

# Grundfos COMFORT

Circulator pumps

50/60 Hz



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GRUNDFOS 

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# 1. Product description

## Type key

### Outside USA

Example:	COMFORT	15	-14	(M)	B	(X)	(T)	(S)	(A)	PM	GB
Circulator pump											
Length 80 mm / Rp 1/2											
Maximum head [dm]											
Motor (pump head only - fits all COMFORT pump housings)											
Brass pump housing											
Integrated isolating valve and non-return valve Length 140 mm / G 1											
Temperature control											
Selectric: 3-speed											
AUTO <sub>ADAPT</sub>											
Permanent magnet											
- International											
GB Great Britain											
DACH Germany, Austria, Switzerland											
CN China											

### USA

Example:	COMFORT	10	-16	(T)	(A)	PM	B	5	LC
Circulator pump									
Type range									
Maximum head [dm]									
Temperature control									
AUTO <sub>ADAPT</sub>									
Permanent magnet									
Brass pump housing									
5 1/2" internal sweat									
N5 1/2" NPT									
U 1 1/4" NPSM with integrated isolating valve and non-return valve									
Line cord									

## Approvals



Fig. 1 European approvals



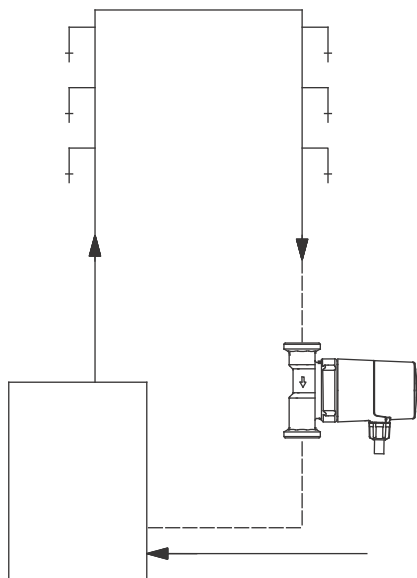
Fig. 2 US approvals

## Applications

Grundfos COMFORT circulator pumps are designed for the following:

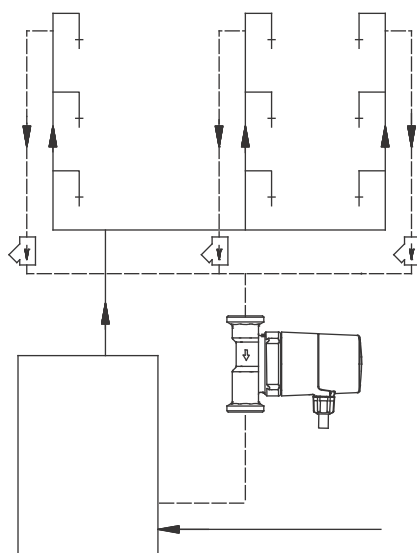
- domestic hot-water systems in single- and two-family houses
- small heating systems
- cooling and air-conditioning systems.

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



**Fig. 3** Single-loop system

TM01 9110 1100

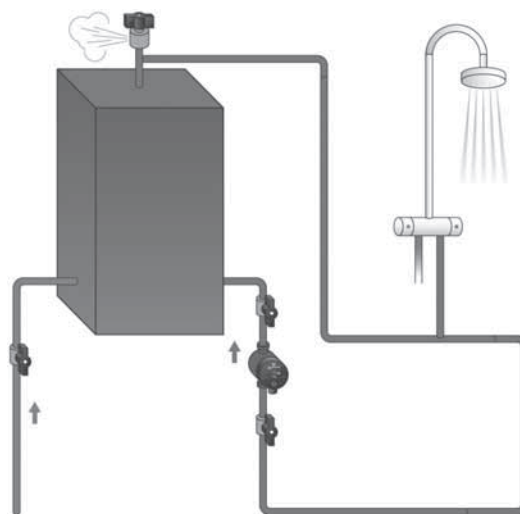


**Fig. 4** Branched system

TM01 9111 1100

## Domestic hot-water systems

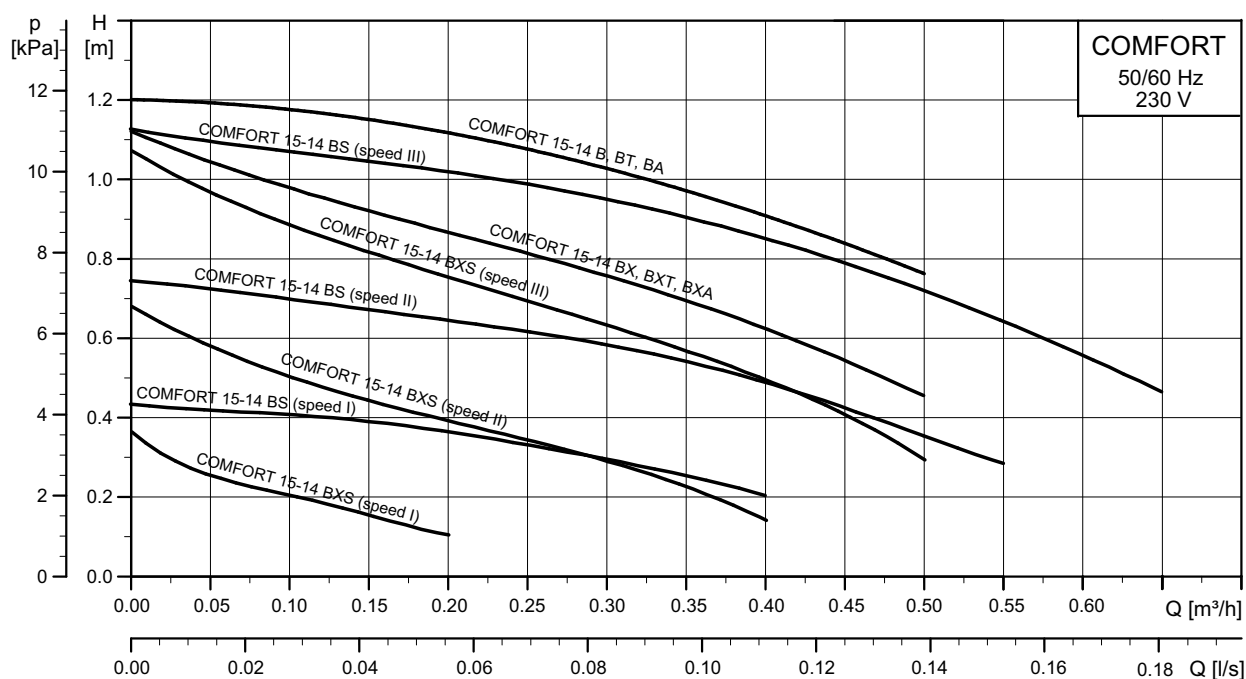
For circulation of drinking water in domestic hot-water systems, we recommend to use Grundfos COMFORT types with brass pump housing in systems with hot-water storage tanks.



**Fig. 5** Domestic hot-water system with hot-water storage tank

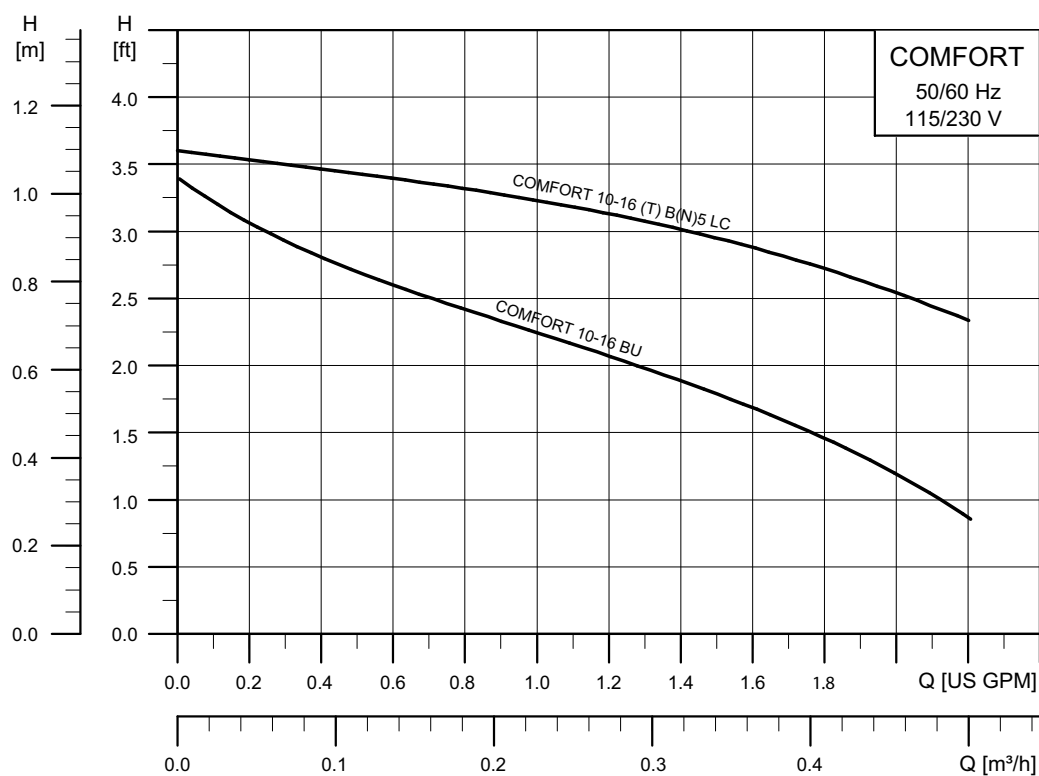
TM05 9316 3313

## Performance range



TM06 8755 1117

Fig. 6 COMFORT performance range (outside USA)



TM06 8411 0517

Fig. 7 COMFORT performance range USA

## 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 mm<sup>2</sup>/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 mm<sup>2</sup>/s, reducing pump performance by approx. 15 %.

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

### Temperatures

#### Liquid temperature

Liquid temperature range: 2 to 95 °C.

#### Operating temperature

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

#### Ambient temperature

The ambient temperature must always be lower than the liquid temperature to minimise condensation in the stator housing, and not exceed 40 °C.

### Pressures

#### System pressure

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 with AUTO<sub>ADAPT</sub>

COMFORT BA PM and BXA PM models have the following operation modes:

- AUTO<sub>ADAPT</sub> mode
- temperature control mode
- continuous 100 % mode.

#### AUTO<sub>ADAPT</sub> mode

The AUTO<sub>ADAPT</sub> function adapts the operating hours by switching on and off according to the tapping pattern of the users. This means that the pump provides maximum comfort and saves energy at the same time.

#### Energy-saving

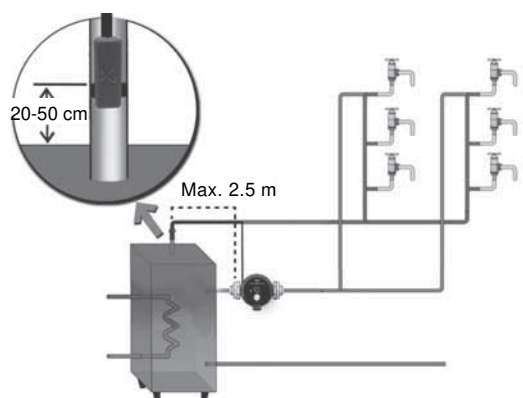
The AUTO<sub>ADAPT</sub> function saves energy in two ways:

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

The AUTO<sub>ADAPT</sub> function automatically adjusts the number of operating hours, based on the hot-water consumption in the given system.

The AUTO<sub>ADAPT</sub> function requires a 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 detect when hot water is tapped. The detected tapping events are logged and used to predict the consumption pattern. The AUTO<sub>ADAPT</sub> 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<sub>ADAPT</sub>.



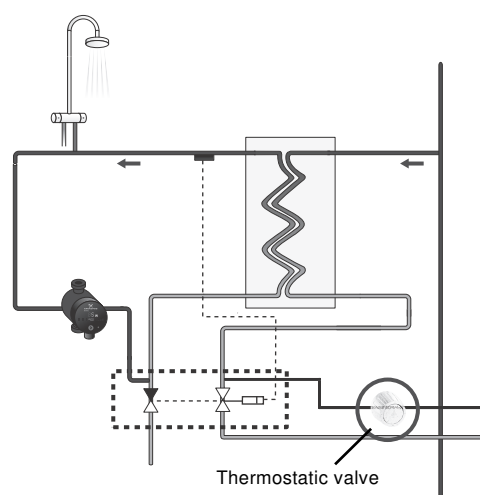
**Fig. 8** COMFORT BA PM or BXA PM pump with built-in temperature sensor

#### AUTO<sub>ADAPT</sub> in heating systems regulated with a thermostatic regulating valve

In systems including a thermostatic regulating valve, choose a COMFORT pump without the AUTO<sub>ADAPT</sub> function.

Choosing a pump with AUTO<sub>ADAPT</sub> function will result in two active regulating systems working separately, which is not recommendable.

**NOTE:** If a pump with AUTO<sub>ADAPT</sub> function is installed in a circulation system where the temperature of the recirculated water is regulated by a thermostatic regulating valve, we recommend that you open the thermostatic regulating valve completely. This is done by setting the valve to max., which deactivates its regulating function.



**Fig. 9** 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 AUTO<sub>ADAPT</sub> function 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	00:20	00:40	----->	07:00	07:20	07:20	07:40	07:40	08:00	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 should be available for tapping from 07:20 to 08:00.

At 08:00 the pump can stop circulating hot water. Likewise, the pump should 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<sub>ADAPT</sub>, 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<sub>ADAPT</sub> control mode. The display does not automatically change to temperature control mode.

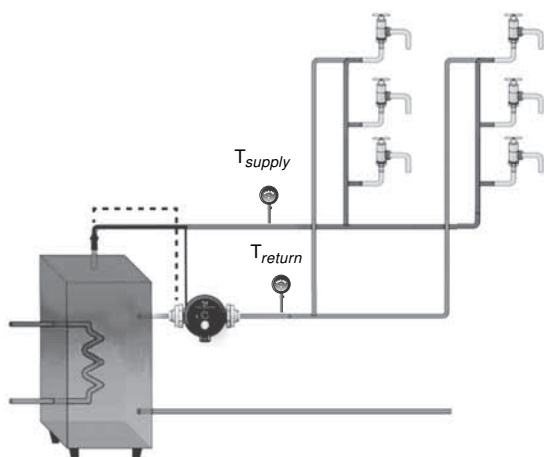
#### Defective internal temperature sensor

If in AUTO<sub>ADAPT</sub>, 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 for all AUTO<sub>ADAPT</sub> (BA, BXA) variants

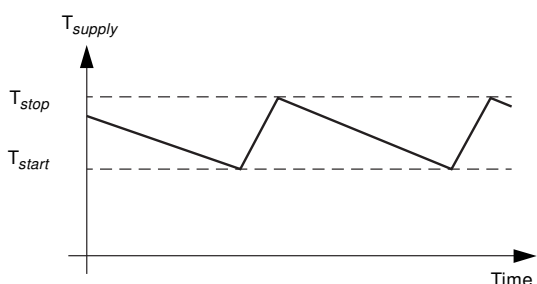
The regulation of the COMFORT AUTO<sub>ADAPT</sub> models is based on temperature control. The operating range of the pump is kept within a calculated temperature range. This means that the pump operates in an average temperature area providing the maximum comfort and saves energy at the same time.



TM06 0947 1214

Fig. 10 Comfort in heat application

With temperature control, the maximum temperature measured at both sensors is stored and the pump automatically calculates the gap between  $T_{stop}$  and  $T_{start}$ . The pump switches on when one of the sensors detects a lower temperature than  $T_{start}$ . The pump switches off when the  $T_{stop}$  temperature is exceeded on both sensors.



TM06 0948 1214

Fig. 11 Temperature control mode

### Continuous 100 % mode

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

### Temperature control mode for BT and BXT variants

COMFORT PM BT and BXT variants have an integrated temperature control mode that controls the circulation. The temperature control mode switches the pump off when a preset temperature limit  $T_{off}$  is reached, and back on when a preset temperature limit  $T_{on}$  is reached.

These temperature limits are set automatically and dynamically. Manual settings are not needed.

After the first installation or after a power cut-off, the pump carries out an identification run for 10 minutes to verify the system temperature. Based on the result,  $T_{on}$  and  $T_{off}$  are calculated. The identification run is repeated every 12 hours to avoid a wrong temperature setting, for example during night setback of the water heater.

- $T_{on} = T_{sys} - 14\text{ °C}$
- $T_{off} = T_{sys} - 7\text{ °C}$

## 4. Construction

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

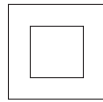
The motor can be separated from the pump housing, enabling easy maintenance and replacement.

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.

### Electrical insulation



TM05 9197 2913

**Fig. 12** Protection Class II symbol

All Grundfos COMFORT PM models are electrically double insulated (Protection Class II). 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.

Enclosure class: IP 44

Insulation class: F

### Voltages

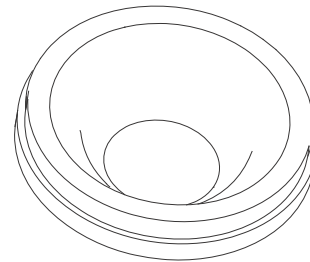
- Europe: 1 x 230 V, 50/60 Hz
- UK: 1 x 230 V, 50/60 Hz
- China: 1 x 230 V, 50/60 Hz
- USA: 1 x 115/230 V, 50/60 Hz

### 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.

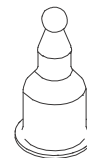


TM06 52014115

**Fig. 13** 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.

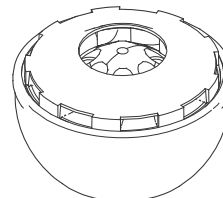


TM06 5202 4115

**Fig. 14** Bearing pin

### Rotor

The rotor is gimbal-mounted on the bearing ball with its own step bearing.

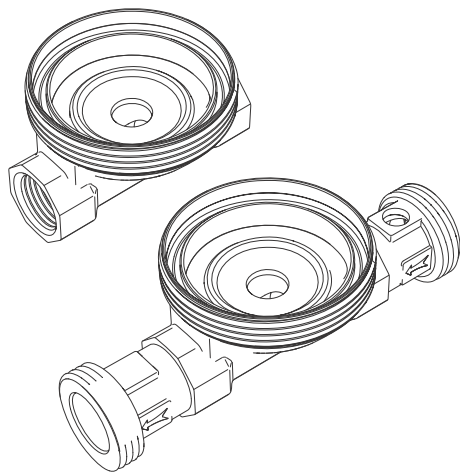


TM06 5203 4115

**Fig. 15** 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.



TM06 8283 5016

Fig. 16 Pump housing with and without valves

## Isolating valve and non-return valve

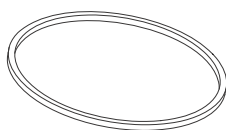
The COMFORT pump types BX (Europe) and BU (USA) have a built-in isolating valve and a non-return valve.

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

The COMFORT pump 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 the entire pump life.



TM06 5206 4115

Fig. 17 Seal ring

## 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.

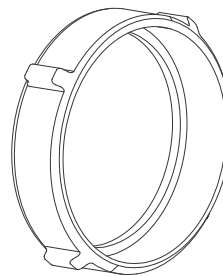
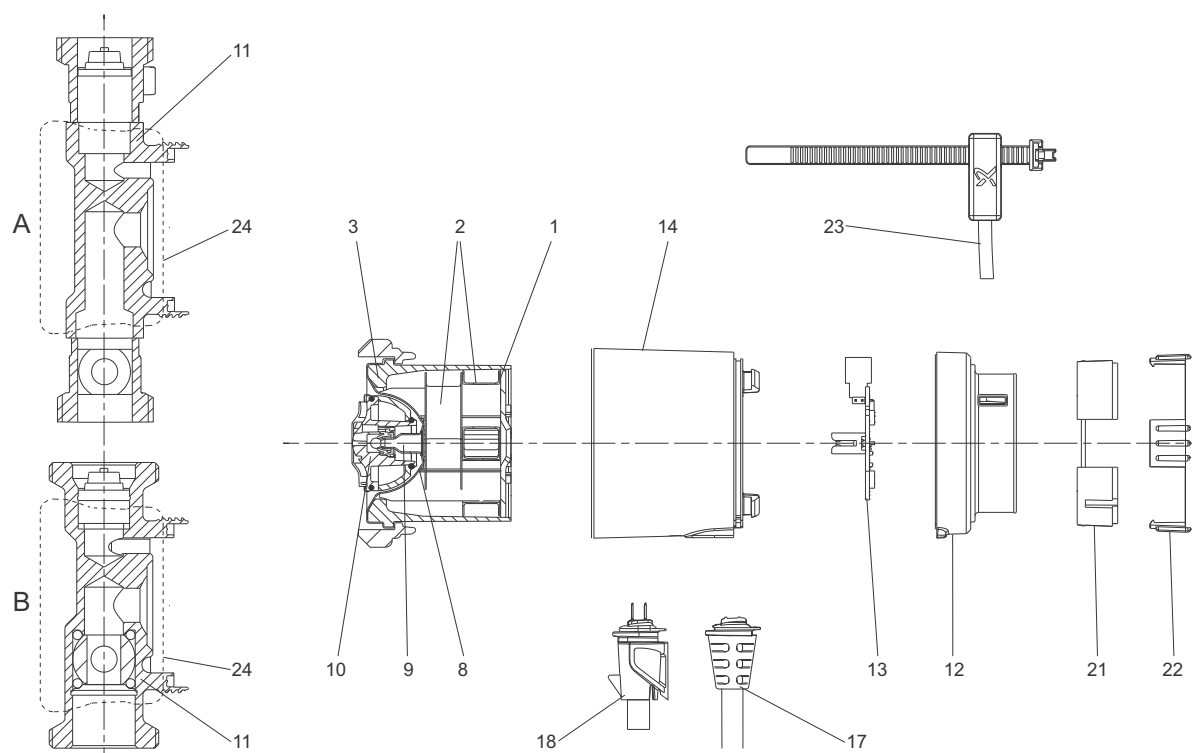


Fig. 18 Union nut

TM06 5207 4115

## Sectional drawing



TM06 8303 5116

Fig. 19 Sectional drawing of COMFORT PM

## 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 A: Outside USA B: USA	Brass (CW617N) Brass (ECOBASS, CuZn <sub>21</sub> Si <sub>3</sub> P)	CW617N	
12	Terminal box cover	PC/ABS		
13	PC board with diode	FR 4		
14	Motor cover	PPO		
17	Cable with plug			
18	COMFORT plug (GB versions BA/BXA only)	PA66		
21	Cable ring 1 (AUTO <sub>ADAPT</sub> variant only)	PC/ABS		
22	Cable ring 2 (AUTO <sub>ADAPT</sub> variant only)	PC/ABS		
	Temperature sensor (AUTO <sub>ADAPT</sub> variant only)			
24	Insulation shells	EPP 55		

## 5. Performance curves

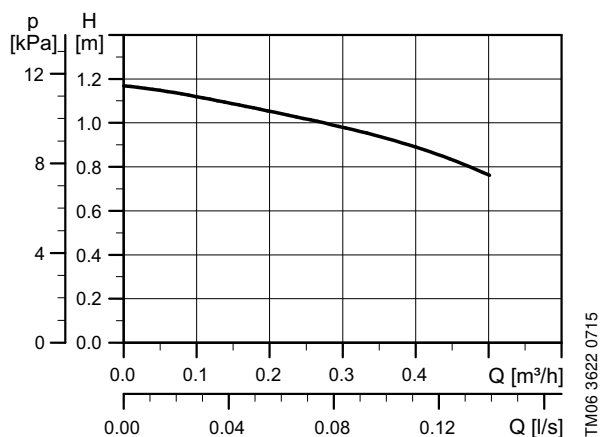
### Curve conditions

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

- Test liquid: airless water.
- The measurements for COMFORT PM 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 COMFORT PM 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] was 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.

## 6. Data sheets

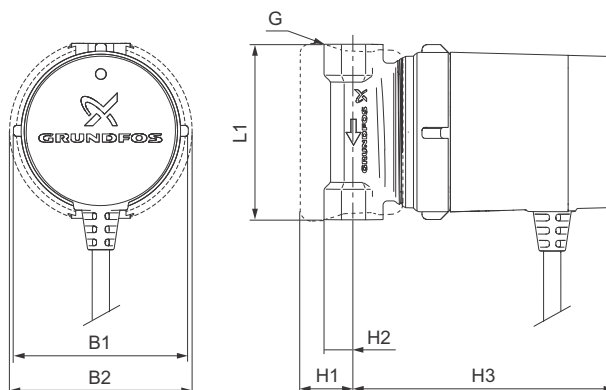
### COMFORT 15-14 B PM, 15-14 B PM DACH, 15-14 B PM CN



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

P <sub>1</sub> [W]	I <sub>1/1</sub> [A]
7	0.07

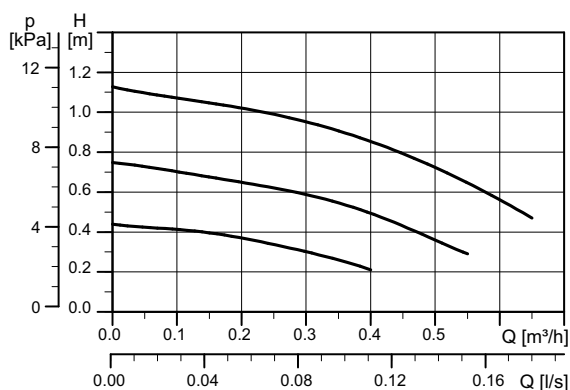
#### Dimensions



Connections: Rp 1/2. Various fittings see page 37.  
 System pressure: Max. 10 bar.  
 Liquid temperature: 2-95 °C (TF 95).  
 IP class: IP44

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

## COMFORT 15-14 BS PM, COMFORT 15-14 BS PM DACH

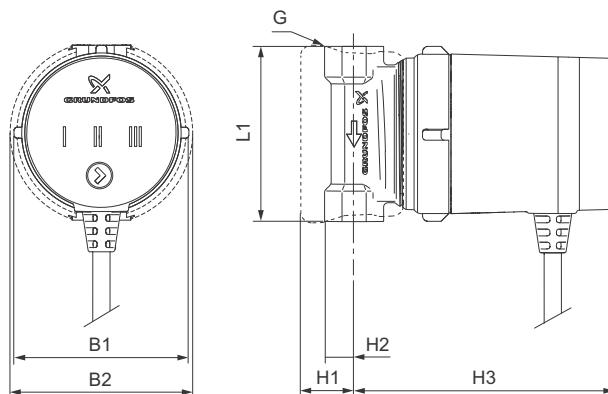


TM06 3620 0715

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

P1 - speed 1/2/3 [W]	I <sub>1/1</sub> - speed 1/2/3 [A]
2.5 / 4 / 6	0.04 / 0.05 / 0.07

### Dimensions



TM06 9446 2317

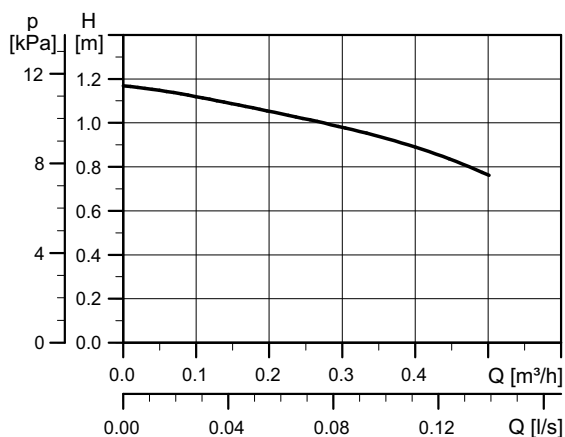
Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m <sup>3</sup> ]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 15-14 BS PM COMFORT 15-14 BS PM DACH	80	25	13.5	129	79.5	84	Rp 1/2	1.00	1.12	0.0026



TM06 8273 5016

Connections: Rp 1/2. Various fittings see page 37.  
 System pressure: Max. 10 bar.  
 Liquid temperature: 2-95 °C (TF 95).  
 IP class: IP44

# COMFORT 15-14 BT PM, 15-14 BT PM DACH, 15-14 BT PM CN

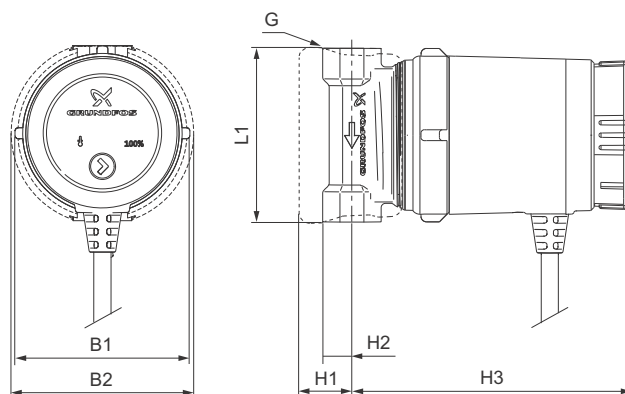


TM06 3622 0715

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

P <sub>1</sub> [W]	I <sub>1/1</sub> [A]
7	0.07

## Dimensions



TM06 9246 2017

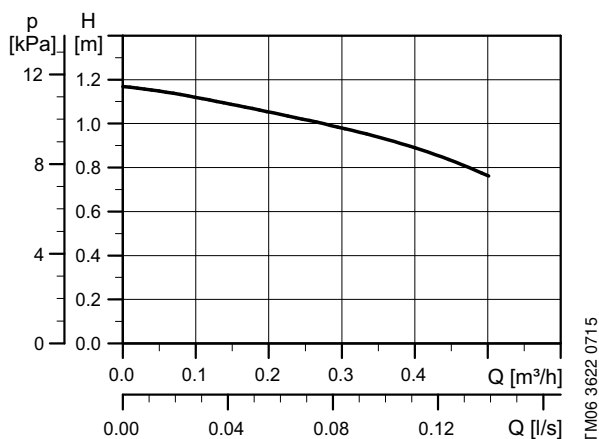
Connections: Rp 1/2. Various fittings see page 37.  
 System pressure: Max. 10 bar.  
 Liquid temperature: 2-95 °C (TF 95).  
 IP class: IP44

TM06 9251 2017

Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 15-14 BT PM COMFORT 15-14 BT PM DACH COMFORT 15-14 BT PM CN	80	25	13.5	129	79.5	84	Rp 1/2	1.00	1.12	0.0026



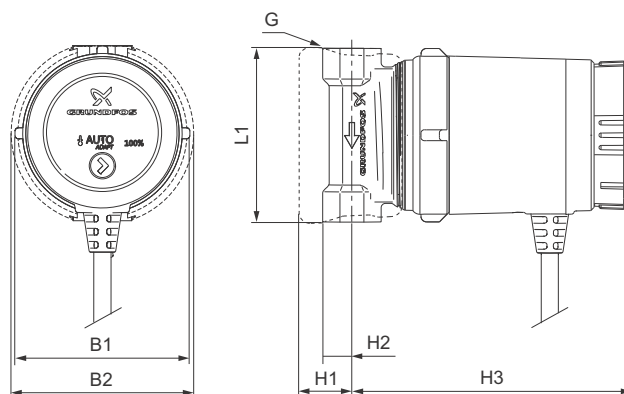
## COMFORT 15-14 BA PM, 15-14 BA PM DACH, 15-14 BA PM CN



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

P <sub>1</sub> [W]	I <sub>1/1</sub> [A]
7	0.07

### Dimensions



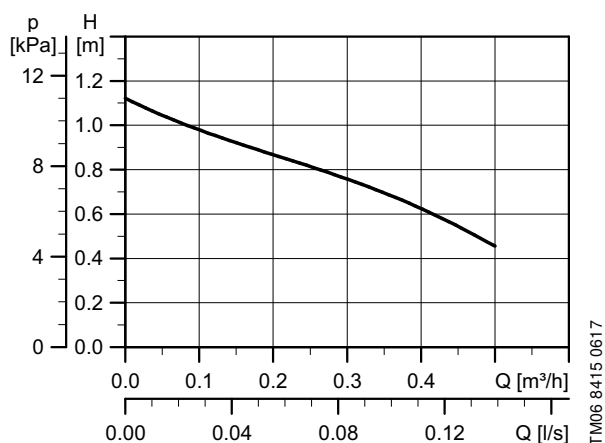
TM06 8274 5016

TM06 9258 2117

Connections: Rp 1/2. Various fittings see page 37.  
 System pressure: Max. 10 bar.  
 Liquid temperature: 2-95 °C (TF 95).  
 IP class: IP44

Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 15-14 BA PM COMFORT 15-14 BA PM DACH COMFORT 15-14 BA PM CN	80	25	13.5	129	79.5	84	Rp 1/2	1.00	1.12	0.0026

## COMFORT 15-14 BX PM, COMFORT 15-14 BX PM DACH

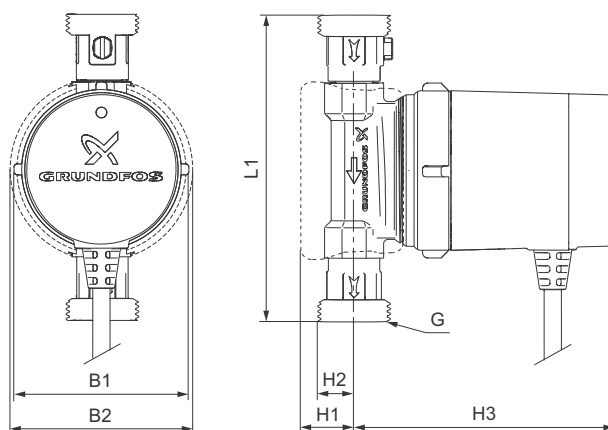


## Electrical data, 1 x 230 V, 50/60 Hz

P <sub>1</sub> [W]	I <sub>1/1</sub> [A]
7	0.07

Connections: G 1  
 System pressure: Max. 10 bar.  
 Liquid temperature: 2-95 °C (TF 95).  
 IP class: IP44

## Dimensions

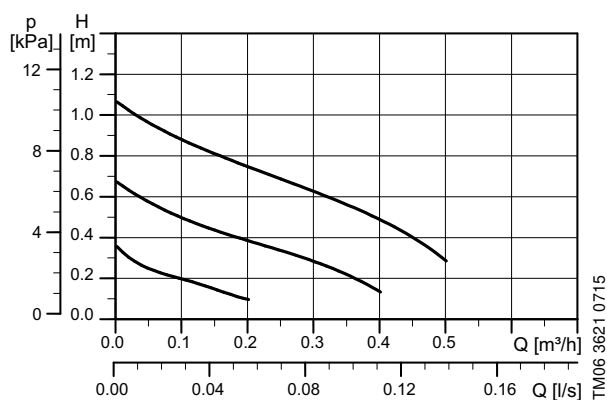


Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 15-14 BX PM	140	25	21	119	79.5	84	G 1	1.35	1.51	0.0034
COMFORT 15-14 BX PM DACH										

TM06 8272 5016

TM06 8285 5016

## COMFORT 15-14 BXS PM, COMFORT 15-14 BXS PM DACH

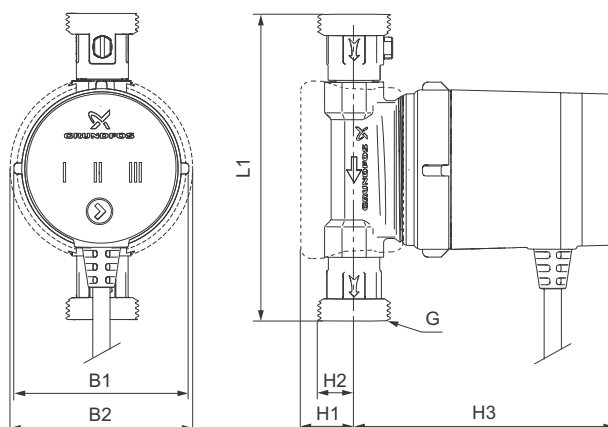


Electrical data, 1 x 230 V, 50/60 Hz

P1 - speed 1/2/3 [W]	I <sub>1/1</sub> - speed 1/2/3 [A]
2.5 / 4 / 6	0.04 / 0.05 / 0.07

Connections: G 1  
 System pressure: Max. 10 bar.  
 Liquid temperature: 2-95 °C (TF 95).  
 IP class: IP44

### Dimensions

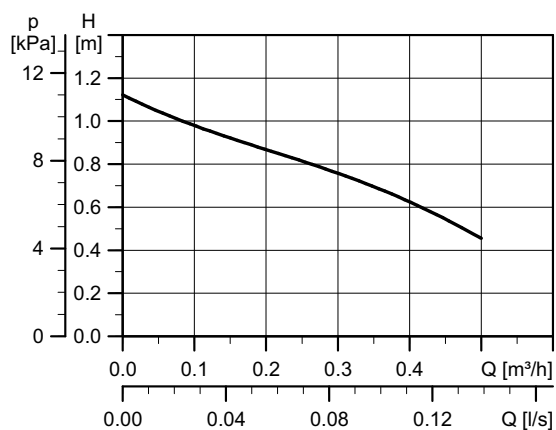


Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 15-14 BXS PM	140	25	21	129	79.5	84	G 1	1.00	1.12	0.0026
COMFORT 15-14 BXS PM DACH										

TM06 8270 5016

TM06 8291 5016

# COMFORT 15-14 BXT PM, 15-14 BXT PM DACH



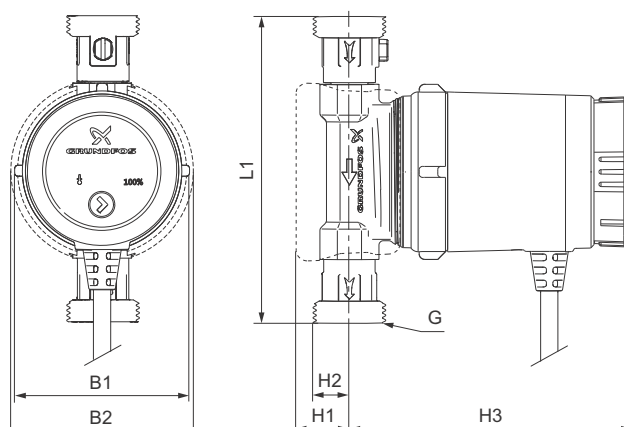
TM06 8415 0617

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

P1 [W]	I <sub>1/1</sub> [A]
7	0.07

Connections: G 1  
 System pressure: Max. 10 bar.  
 Liquid temperature: 2-95 °C (TF 95).  
 IP class: IP44

## Dimensions

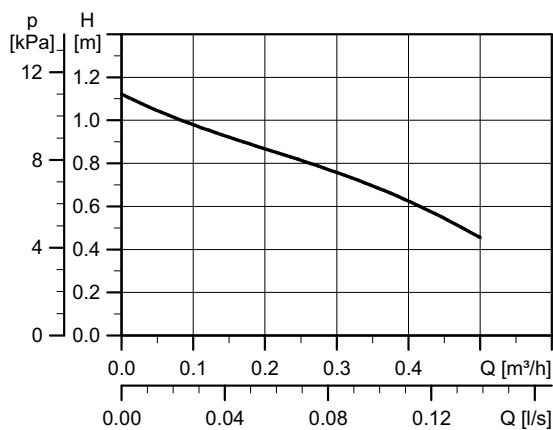


TM06 9247 2017

TM06 9252 2017

Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 15-14 BXT PM COMFORT 15-14 BXT PM DACH	140	25	21	129	79.5	84	G 1	1.35	1.51	0.0034

## COMFORT 15-14 BXA PM, 15-14 BXA PM DACH



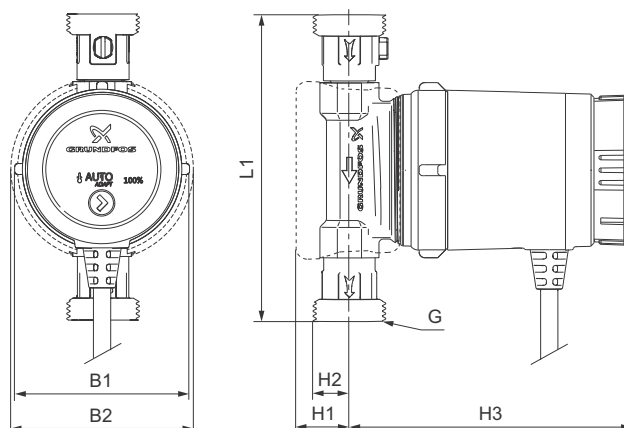
TM06 8415 0617

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

P <sub>1</sub> [W]	I <sub>1/1</sub> [A]
7	0.07

Connections: G 1  
 System pressure: Max. 10 bar.  
 Liquid temperature: 2-95 °C (TF 95).  
 IP class: IP44

### Dimensions



TM06 8271 5016

TM06 8290 5016

Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 15-14 BXA PM	140	25	21	129	79.5	84	G 1	1.35	1.51	0.0034
COMFORT 15-14 BXA PM DACH										

## COMFORT 15-14 MBS PM DACH

### Note:

- Performance curve for pump housing without fittings, see COMFORT 15-14 BS PM, COMFORT 15-14 BS PM DACH on page 15.
- Performance curve for pump housing with fittings, see COMFORT 15-14 BXS PM, COMFORT 15-14 BXS PM DACH on page 19.

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

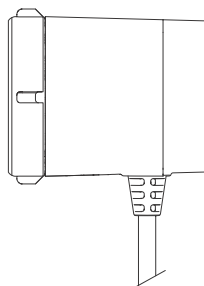
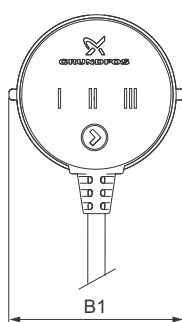
P1 - speed 1/2/3 [W]	I <sub>1/1</sub> - speed 1/2/3 [A]
2.5/4/6	0.04/0.05/0.07



TM06 8263 5016

System pressure: Max. 10 bar.  
 Liquid temperature: 2-95 °C (TF 95).  
 IP class: IP44

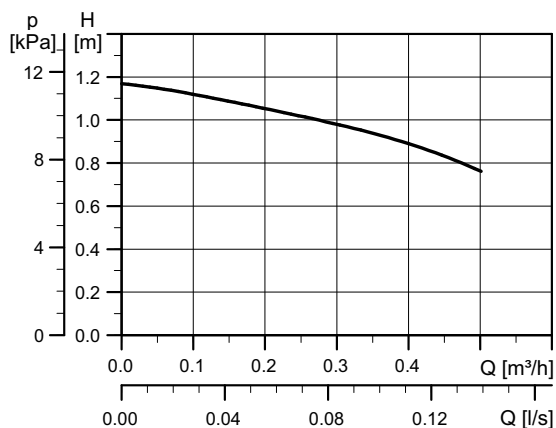
### Dimensions



TM06 8295 5016

Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m <sup>3</sup> ]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 15-14 MBS PM DACH	-	-	-	-	79.5	-	-	0.43	0.44	0.0026

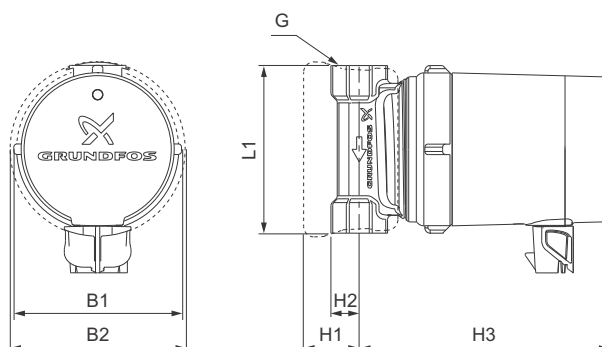
## COMFORT 15-14 B PM GB



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

P <sub>1</sub> [W]	I <sub>1/1</sub> [A]
7	0.07

### Dimensions

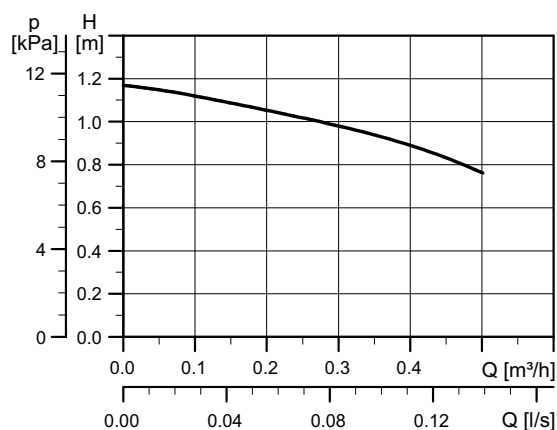


Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 15-14 B PM GB	80	25	13.5	119	79.5	84	Rp 1/2	1.00	1.12	0.0026



Connections: Rp 1/2. Various fittings, see page 37.  
 System pressure: Max. 10 bar.  
 Liquid temperature: 2-95 °C (TF 95).  
 IP class: IP44

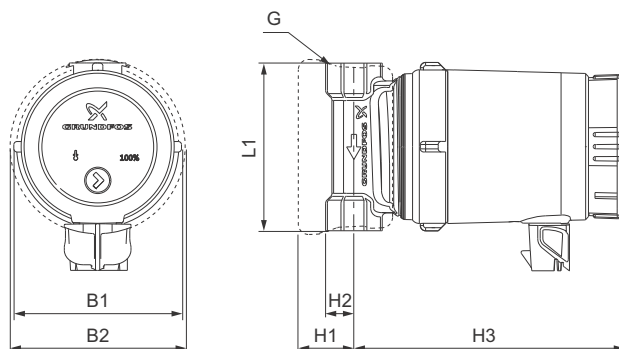
## COMFORT 15-14 BT PM GB



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

P <sub>1</sub> [W]	I <sub>1/1</sub> [A]
7	0.07

## Dimensions

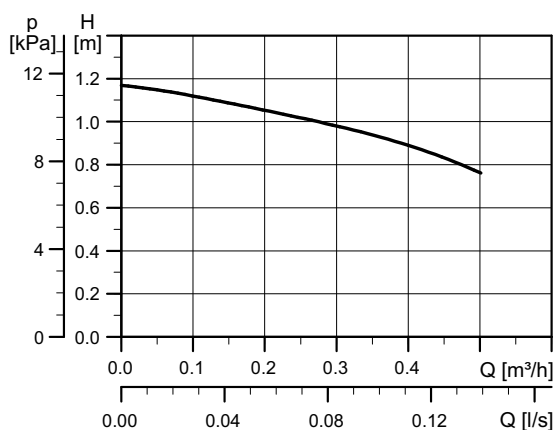


Connections: Rp 1/2. Various fittings see page 37.  
 System pressure: Max. 10 bar.  
 Liquid temperature: 2-95 °C (TF 95).  
 IP class: IP44

Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 15-14 BT PM GB	80	25	13.5	129	79.5	84	Rp 1/2	1.00	1.12	0.0026



## COMFORT 15-14 BA PM GB

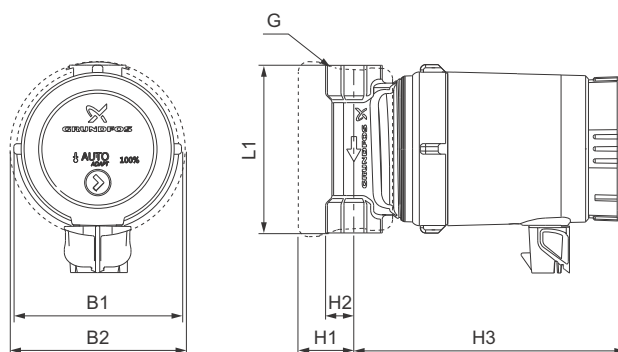


Connections: Rp 1/2. Various fittings see page 37.  
 System pressure: Max. 10 bar.  
 Liquid temperature: 2-95 °C (TF 95).  
 IP class: IP44

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

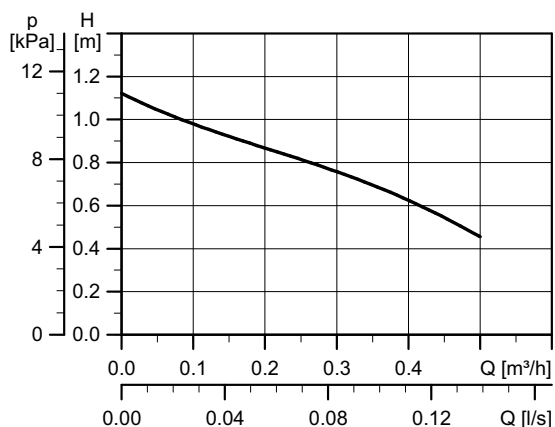
P1 [W]	I <sub>1/1</sub> [A]
7	0.07

### Dimensions



Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 15-14 BA PM GB	80	25	13.5	129	79.5	84	Rp 1/2	1.00	1.12	0.0026

## COMFORT 15-14 BX PM GB

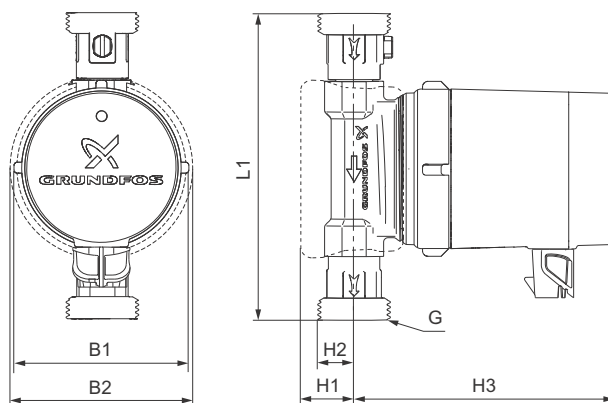


TM06 8415 0617

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

P <sub>1</sub> [W]	I <sub>1/1</sub> [A]
7	0.07

## Dimensions



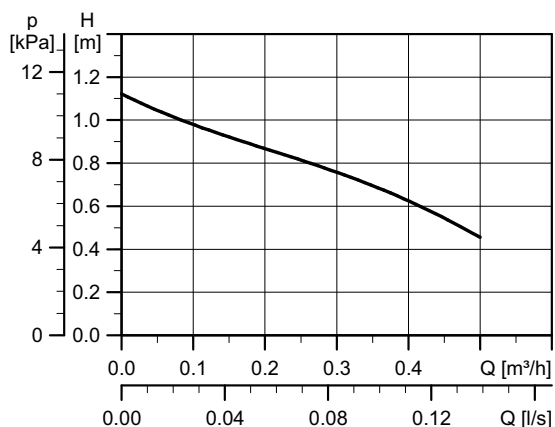
TM06 8266 5016

Connections: G 1  
 System pressure: Max. 10 bar.  
 Liquid temperature: 2-95 °C (TF 95).  
 IP class: IP44

TM06 8297 5016

Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 15-14 BX PM GB	140	25	21	119	79.5	84	G 1	1.35	1.51	0.0034

## COMFORT 15-14 BXT PM GB

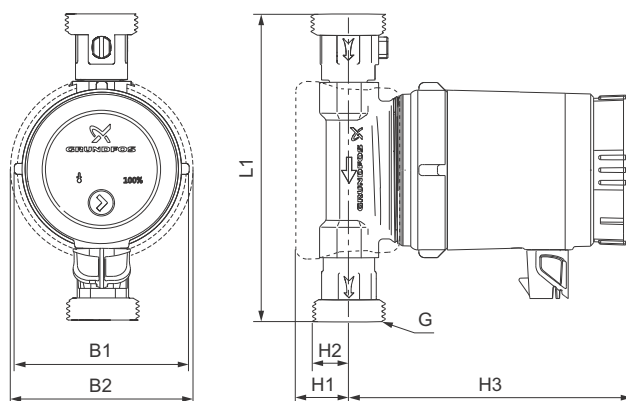


TM06 8415 0617

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

P <sub>1</sub> [W]	I <sub>1/1</sub> [A]
7	0.07

### Dimensions



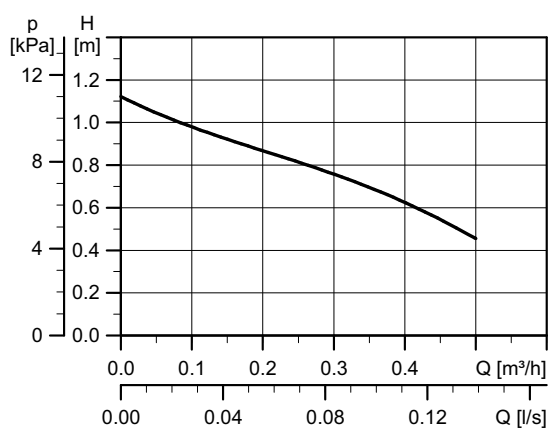
TM06 9254 2017

Connections: G 1  
 System pressure: Max. 10 bar.  
 Liquid temperature: 2-95 °C (TF 95).  
 IP class: IP44

TM06 9249 2017

Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 15-14 BXT PM GB	140	25	21	129	79.5	84	G 1	1.35	1.51	0.0034

## COMFORT 15-14 BXA PM GB

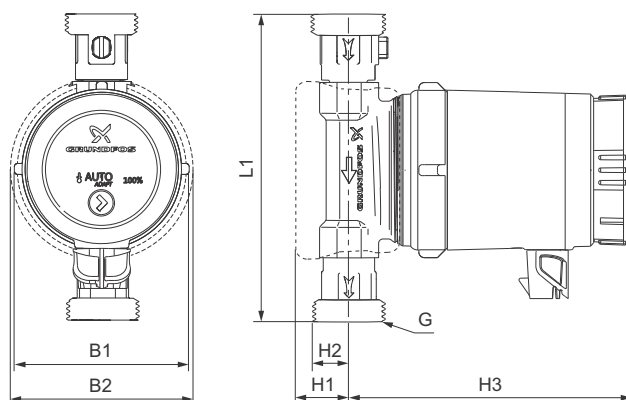


TM06 8415 0617

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

P1 [W]	I <sub>1/1</sub> [A]
7	0.07

## Dimensions

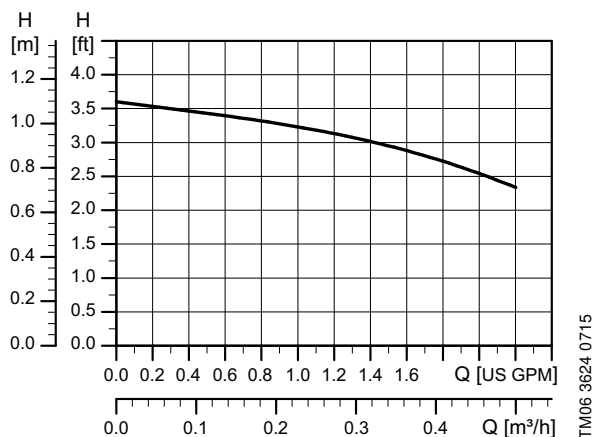


TM06 8285 5016

TM06 8298 5016

Pump type	Dimensions [mm]							Weights [kg]		Shipping volume [m³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 15-14 BXA PM GB	140	25	21	129	79.5	84	G 1	1.35	1.51	0.0034

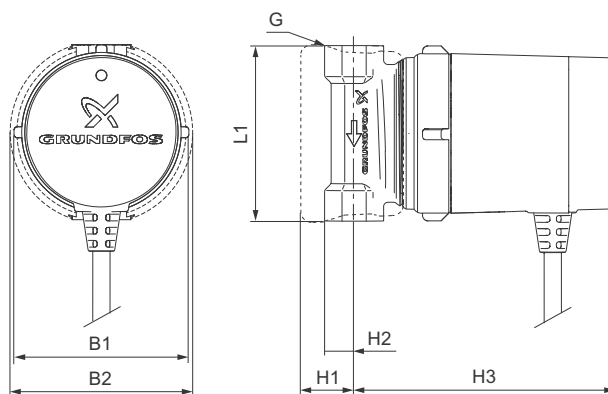
## COMFORT 10-16 PM B5/LC



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

P1 [W]	I <sub>1/1</sub> [A]
6	0.07

### Dimensions

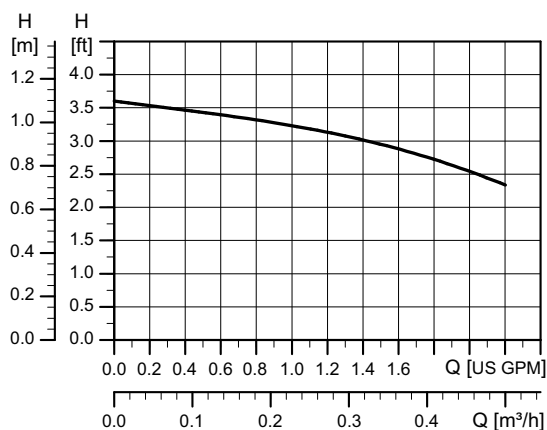


Pump type	Dimensions [inches]							Weights [lb]		Shipping volume [ft³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 10-16 PM B5/LC	3 1/8	1	1/2	4 3/4	3	3 1/3	1/2" NPT	2.6	2.9	0.116



Connections: 1/2" NPT  
 System pressure: 145 psi  
 Liquid temperature: +2 °C to +80 °C / +35 °F to +176 °F  
 IP class: IP44

## COMFORT 10-16 PM BN5/LC

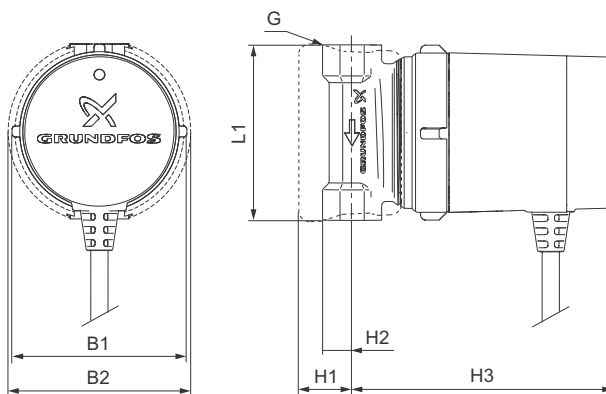


TM06 3624 0715

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

P <sub>1</sub> [W]	I <sub>1/1</sub> [A]
6	0.07

## Dimensions

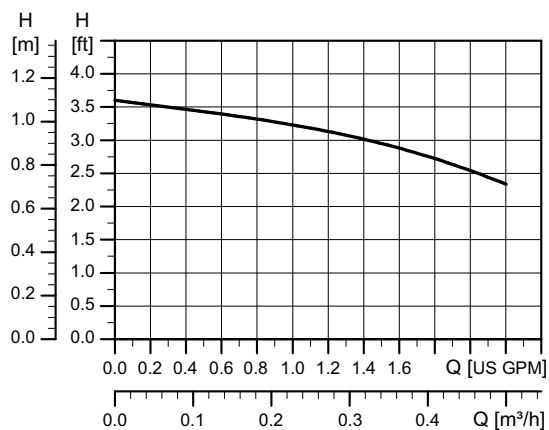


TM06 8275 5016

TM06 8292 5016

Pump type	Dimensions [inches]							Weights [lb]		Shipping volume [ft³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 10-16 PM BN5/LC	3 1/8	1	1/2	4 3/4	3	3 1/3	1/2" NPT	2.6	2.9	0.116

## COMFORT 10-16 T PM BN5/LC

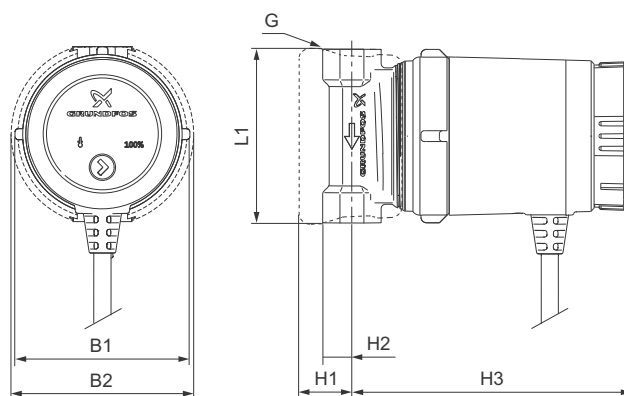


TM06 3624 0715

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

P <sub>1</sub> [W]	I <sub>1/1</sub> [A]
6	0.07

### Dimensions

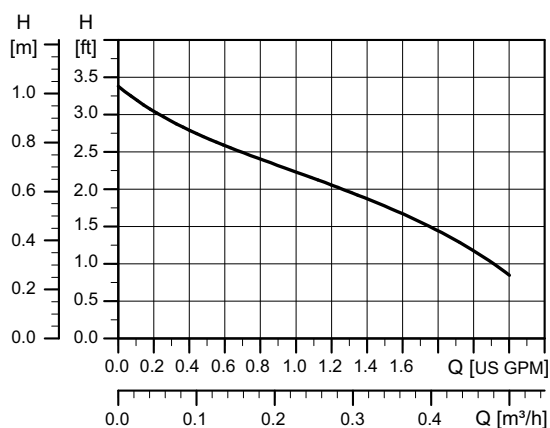


TM06 9251 2017

Connections: 1/2" NPT  
 System pressure: Max. 145 psi  
 Liquid temperature: +2 °C to +80 °C / +35 °F to +176 °F  
 IP class: IP44

Pump type	Dimensions [inches]							Weights [lb]		Shipping volume [ft³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 10-16 T 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 10-16 PM BU/LC

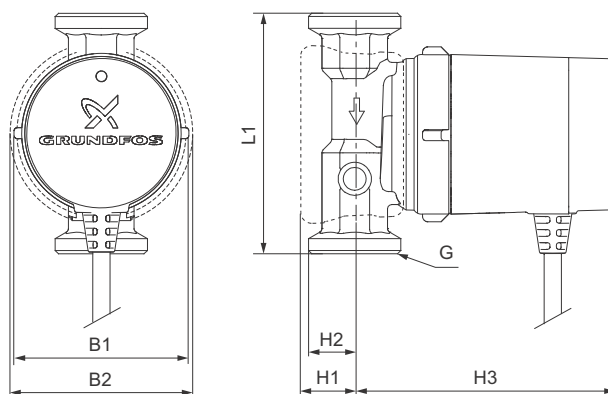


TM06 3625 0715

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

P1 [W]	I <sub>1/1</sub> [A]
6	0.07

## Dimensions



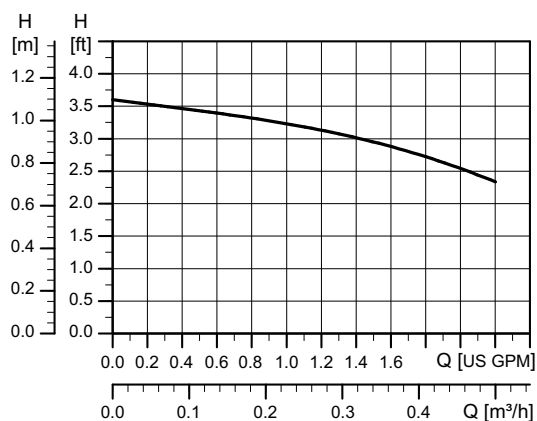
TM06 8299 5016

Connections: 1 1/4" NPSM  
 System pressure: Max. 145 psi  
 Liquid temperature: +2 °C to +80 °C / +35 °F to +176 °F  
 IP class: IP44

Pump type	Dimensions [inches]							Weights [lb]		Shipping volume [ft³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 10-16 PM BU/LC	4 1/3	1	7/8	4 3/4	3	3 1/3	1 1/4" NPSM	3.4	3.8	0.152



## COMFORT 10-16 A PM B5/LC

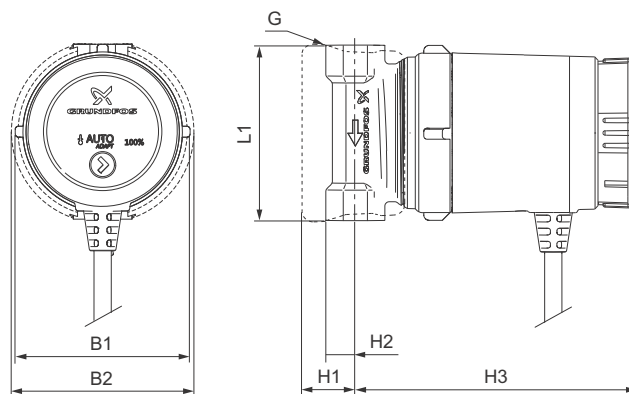


TM06 3624 0715

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

P1 [W]	I <sub>1/1</sub> [A]
6	0.07

### Dimensions



TM06 9448 2317

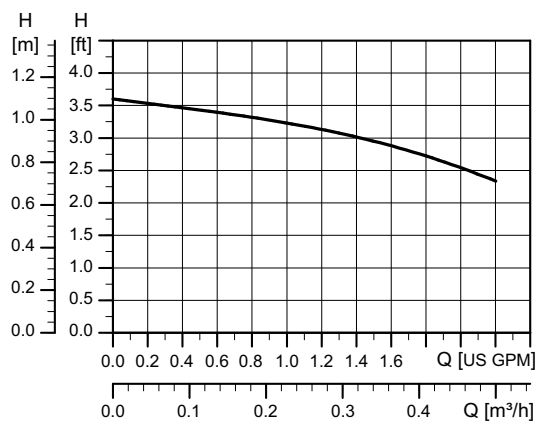
Pump type	Dimensions [inches]							Weights [lb]		Shipping volume [ft³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 10-16 A PM B5/LC	3 1/8	1	1/2	5 1/4	3	3 1/3	1/2" NPT	2.6	2.9	0.116



TM06 8274 5016

Connections: 1/2" NPT  
 System pressure: Max. 145 psi  
 Liquid temperature: +2 °C to +80 °C / +35 °F to +176 °F  
 IP class: IP44

## COMFORT 10-16 A PM BN5/LC

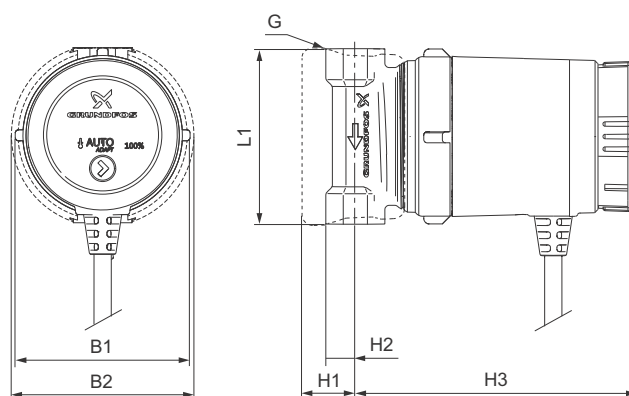


TM06 3624 0715

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

P1 [W]	I <sub>1/1</sub> [A]
6	0.07

## Dimensions



TM06 9448 2317

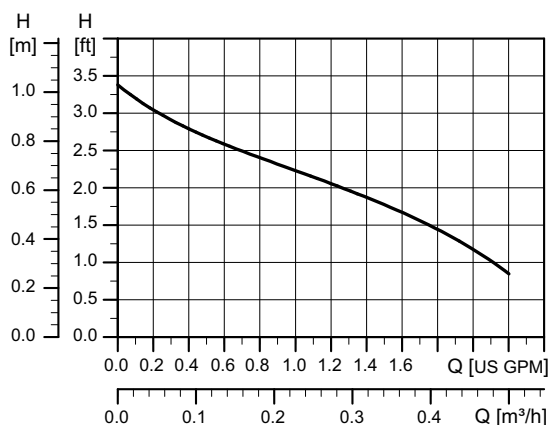
Pump type	Dimensions [inches]							Weights [lb]		Shipping volume [ft³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 10-16 A PM BN5/LC	3 1/8	1	1/2	5 1/4	3	3 1/3	1/2" NPT	2.6	2.9	0.116



TM06 8274 5016

Connections: 1/2" NPT  
 System pressure: Max. 145 psi  
 Liquid temperature: +2 °C to +80 °C / +35 °F to +176 °F  
 IP class: IP44

## COMFORT 10-16 A PM BU/LC

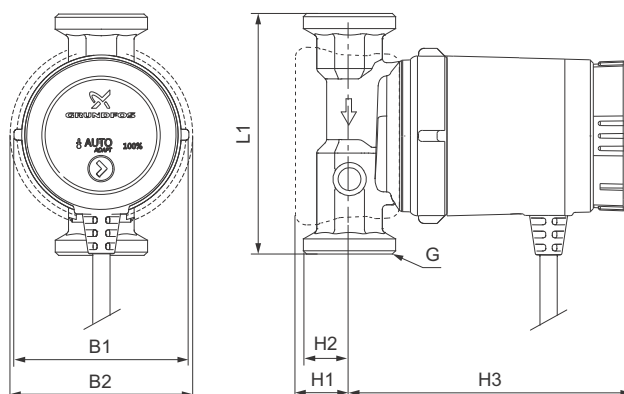


TM06 3625 0715

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

P1 [W]	I <sub>1/1</sub> [A]
6	0.07

### Dimensions



TM06 8300 1515



TM06 5323 4315

Connections: 1 1/4" NPSM  
 System pressure: Max. 145 psi  
 Liquid temperature: +2 °C to +80 °C / +35 °F to +176 °F  
 IP class: IP44

Pump type	Dimensions [inches]							Weights [lb]		Shipping volume [ft³]
	L1	H1	H2	H3	B1	B2	G	Net	Gross	
COMFORT 10-16 A PM BU/LC	4 1/3	1	7/8	5 1/4	3	3 1/3	1 1/4" NPSM	3.4	3.8	0.152

## 7. Product numbers

### COMFORT, International, DACH, GB, CN, 50/60 Hz

Market region	Pump type	Product number	Port-to-port length [mm]	Connection	Supplied with		Data sheet
					Plug	Isolating valve Non-return valve	
International	COMFORT 15-14 B PM	97916771	80 mm	Rp 1/2			page 14
	COMFORT 15-14 BS PM	98492992					page 15
	COMFORT 15-14 BT PM	99279863					page 16
	COMFORT 15-14 BA PM	97916757					page 17
	COMFORT 15-14 BX PM	97916772	140 mm	G 1		•	page 18
	COMFORT 15-14 BXS PM	98492994				•	page 19
	COMFORT 15-14 BXT PM	99279864				•	page 20
	COMFORT 15-14 BXA PM	97916749				•	page 21
Germany Austria Switzerland	COMFORT 15-14 B PM DACH	97989265	80 mm	Rp 1/2			page 14
	COMFORT 15-14 BS PM DACH	99302353					page 15
	COMFORT 15-14 BT PM DACH	99279865					page 16
	COMFORT 15-14 BA PM DACH	99302331					page 17
	COMFORT 15-14 BX PM DACH	97989266	140 mm	G 1		•	page 18
	COMFORT 15-14 BXS PM DACH	99302354				•	page 19
	COMFORT 15-14 BXT PM DACH	99279866				•	page 20
	COMFORT 15-14 BXA PM DACH	99302332				•	page 21
Great Britain	COMFORT 15-14 MBS PM DACH	99302355	-	-			page 22
	COMFORT 15-14 B PM GB	99164484	80 mm	Rp 1/2	•		page 23
	COMFORT 15-14 BT PM GB	99279867			•		page 24
	COMFORT 15-14 BA PM GB	99164487			•		page 25
	COMFORT 15-14 BX PM GB	99164486	140 mm	G 1	•	•	page 26
	COMFORT 15-14 BXT PM GB	99279868			•	•	page 27
	COMFORT 15-14 BXA PM GB	99164488			•	•	page 28
	COMFORT 15-14 B PM CN	98485504	80 mm	Rp 1/2			page 14
China	COMFORT 15-14 BT PM CN	99279869					page 16
	COMFORT 15-14 BA PM CN	98485557					page 17

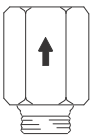

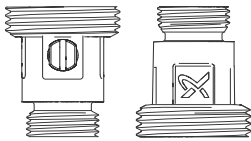
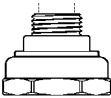
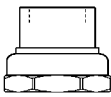
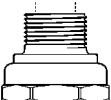
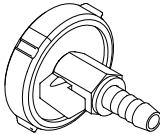
### COMFORT, USA, 50/60 Hz

Market region	Pump type	Product number	Port-to-port length [inches]	Connection	Supplied with		Data sheet
					Line cord	Isolating valve Non-return valve	
USA ★	COMFORT 10-16 PM B5/LC	98420206	3 1/8"	1/2" NPT	•		page 29
	COMFORT 10-16 PM BN5/LC	98420210			•		page 30
	COMFORT 10-16 T PM BN5/LC	99279870			•		page 31
	COMFORT 10-16 PM BU/LC	98420221	4 1/3"	1 1/4" NPSM	•	•	page 32
	COMFORT 10-16 A PM B5/LC	98420222	3 1/8"	1/2" NPT	•		page 33
	COMFORT 10-16 A PM BN5/LC	98420223			•		page 34
	COMFORT 10-16 A PM BU/LC	98420224			•	•	page 35

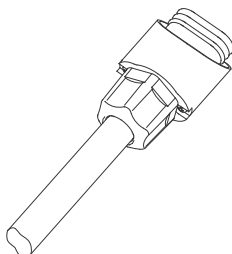
★ Lead-free pump housing

## 8. Accessories

### Fittings

Fitting		Description	Connection	Material	Product number
	TM01 8647 0300	Non-return valve	1/2	Brass	96433904
	TM01 8648 0300	Isolating valve	1/2	Brass	96433905
	TM06 8451 0617	Fittings with integrated non-return valve and isolating valve	G 1 x Rp 1/2 int.	Brass	00ID8748
	TM01 8643 0300	Union set	G 1 1/4 x 15 mm int. R 1/2 ext.	Brass	96433907
	TM01 8644 0300	Union set	G 1 1/4 x Rp 3/4 int.	Brass	96433908
	TM01 8645 0300	Union set	G 1 1/4 x Rp 1/2 int. R 3/4 ext.	Brass	96433909
	TM01 8560 0300	Venting flange	Flange Union nut Hose	PP Brass PE	96433906
Bulk COMFORT PM plug (80 pcs.)					98890117

### Spare parts



TM01 9911 3400

Description	Product number
Spare plug for COMFORT PM	98685259

## 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 is a navigation bar with the Grundfos logo, 'PRODUCT CENTER', and links for 'HOME', 'FIND PRODUCT', 'COMPARE', 'YOUR PROJECTS', 'SAVED ITEMS', and 'HELP'. A search bar is located below the navigation bar. Below the search bar are four main sections: 'SIZING' (with a subtext 'Enter pump sizing'), 'CATALOGUE' (with a subtext 'Products and services'), 'REPLACEMENT' (with a subtext 'Replace an old pump with a new'), and 'LIQUIDS' (with a subtext 'Find pump by liquid'). Below these sections is a 'QUICK SIZING' section with input fields for 'Flow (Q)\*' and 'Head (H)\*', and a 'Select what to size by' section with radio buttons for 'Size by application', 'Size by pump design', and 'Size by pump family'. A 'START SIZING' button is located to the right of the 'QUICK SIZING' section. Below the 'QUICK SIZING' section is an 'ADVANCED SIZING' section with links for 'Advanced sizing by application' and 'Guided selection'.

Callouts from the text blocks above point to specific features in the interface:

- The "SIZING" callout points to the 'SIZING' section.
- The "REPLACEMENT" callout points to the 'REPLACEMENT' section.
- The "CATALOGUE" callout points to the 'CATALOGUE' section.
- The "LIQUIDS" callout points to the 'LIQUIDS' section.

### 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.



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ECM: 1199343

**GRUNDFOS A/S**  
DK-8850 Bjerringbro . Denmark  
Telephone: +45 87 50 14 00  
[www.grundfos.com](http://www.grundfos.com)

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