

Grundfos COMFORT

Circulator pumps
50 Hz



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Applications

The Grundfos COMFORT circulator pump is designed for

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

The pump is suitable for open and closed systems. It must be installed indoors.

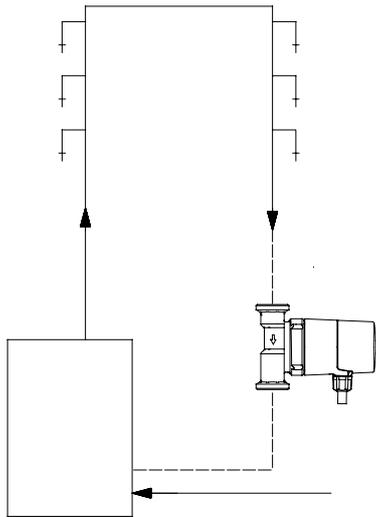


Fig. 1 Single-loop system

TM01 9110 1100

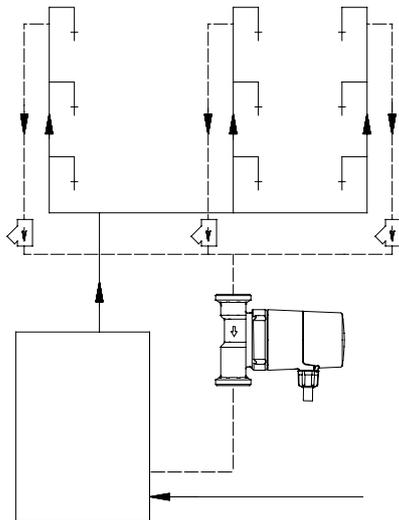


Fig. 2 Branched system

TM01 9111 1100

Options

24-hour timer

The built-in timer has the following functions:

Timer set to	The pump
OFF	is switched off.
TIMER	starts and stops automatically at set intervals of minimum 20 minutes.
ON	runs continuously.

Adjustable thermostat

The built-in thermostat of pump types BT, BUT, BXT and BXUT can be set to stop the pump at a preset liquid temperature.

Setting range: 35 to 65°C.

The thermostat function can be deactivated by turning the thermostat to position .

Factory setting: 35°C.

Fittings

- Extension sets
- Non-return valve
- Isolating valve
- Union sets
- Venting flange.

See *Accessories*, page 8.

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°C to +95°C.

It is recommended to keep the operating temperature as low as possible (e.g. 65°C) to minimise build-up of lime deposits.

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

Maximum system pressure

PN 10: 1.0 MPa (10 bar).

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.

Type key

Example	UP	20	-14	B	X	U	T
Circulator pump							
Type range: 15 = length 80 mm / Rp ½ 20 = length 110 mm / G 1¼							
Maximum head [dm]							
Brass pump housing							
Integrated isolating and non-return valves							
24-hour timer							
Thermostat							

Approvals



Fig. 3 European approvals

Construction

Grundfos COMFORT 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 with a stainless-steel spherical separator.

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

Motor

The motor is a single-phase, 2-pole hysteresis-permanent-magnet motor according to the EMC Directive. Standards applied: EN 61000-6-2 and EN 61000-6-3.

The terminal box and the motor-pump unit have been wet-tested to EN 60335-1 and EN 60335-2-51.

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

Voltage: 1 x 230 V, 50 Hz

Enclosure class: IP 42

Insulation class: F

Cable connection: Various types

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

When the green light on the motor is on, the motor is live.

Material specification

Pos.	Description	Material	DIN W.-Nr.	AISI
1	Stator lamination	Steel		
2	Stator windings	Copper wire and enamel		
3	Stator housing	Aluminium		
4	Capacitor	Metallised PP film		
5	Contact for pc board	Tin-plated brass		
6	Retainer for pc board, lower	PA66/6		
7	Retainer for pc board, upper	PA66/6		
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, PTFE, graphite		
11	Pump housing	Brass MS 58		
12	Terminal box cover	PC/ABS		
13	Pc board with diode	FR 4		
14	Motor cover	PPO		
15	Screw	Stainless steel	1.4301	304
16	Light	Lexan		
17	Cable	PVC		
18	Cable relief	PA66		
19	Insulating cover	EPP 55		
20	Nameplate	PET 50		

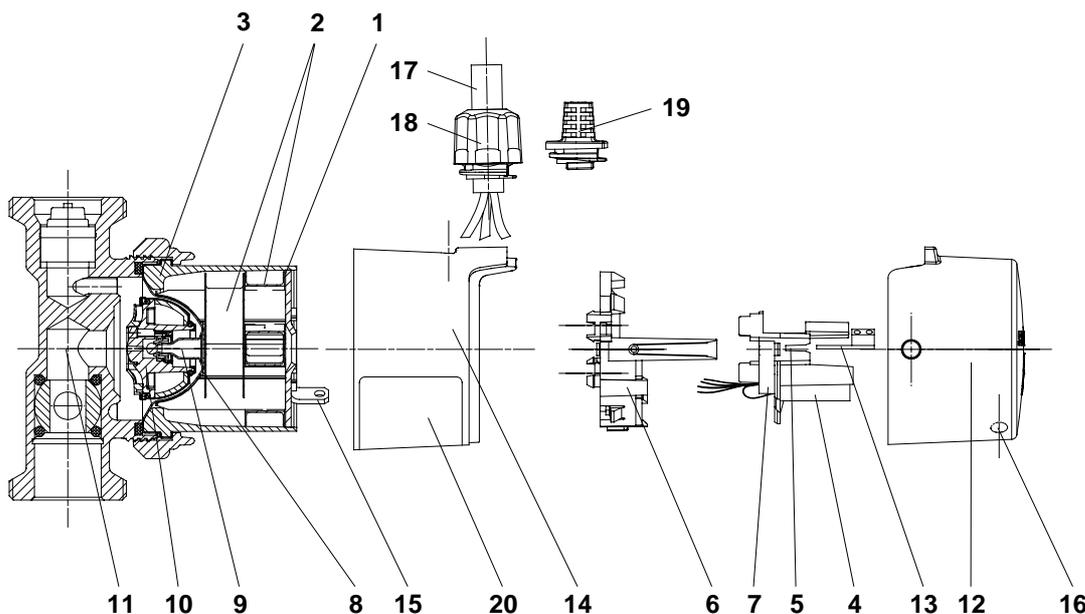


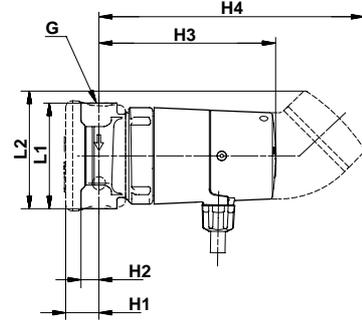
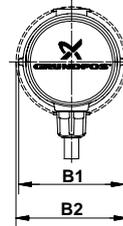
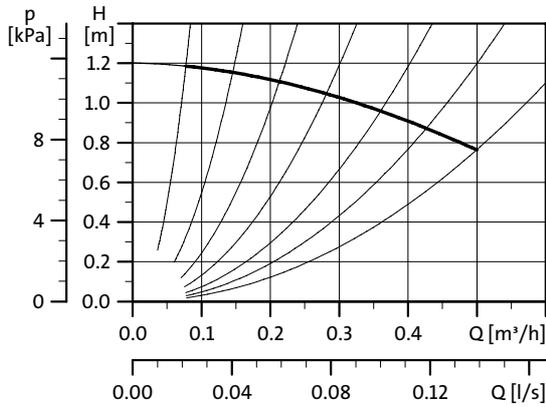
Fig. 4 Sectional drawing

TM01 8532 1602

UP 15-14

80

1 x 230 V, 50 Hz



P₁ [W]	I_n [A]
25	0.11

The motor has thermal overload protection.

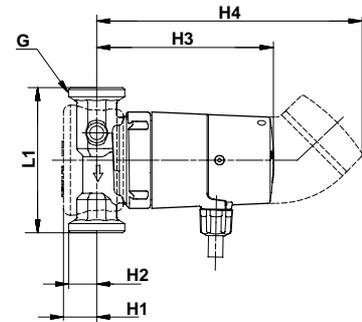
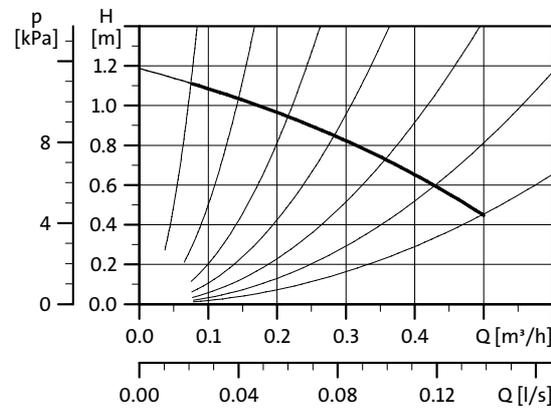
Connections: Various fittings, see page 8.
 System pressure: Max. 10 bar.
 Liquid temperature range: +2°C to +95°C (TF 95).

Pump type	Product number	Dimensions [mm]									Weights [kg]		Ship. vol. [m³]
		L1	L2	H1	H2	H3	H4	B1	B2	G	Net	Gross	
UP 15-14 B	96433883	80	-	25	13.5	133	-	73	84	Rp ½	1.00	1.12	0.0026
UP 15-14 BU	96433884	80	90	25	13.5	-	205	73	84	Rp ½	1.15	1.31	0.0034
UP 15-14 BT	96433885	80	-	25	13.5	155	-	73	84	Rp ½	1.05	1.24	0.0034
UP 15-14 BUT	96433886	80	90	25	13.5	-	205	73	84	Rp ½	1.16	1.32	0.0034

UP 20-14

80

1 x 230 V, 50 Hz



P₁ [W]	I_n [A]
25	0.11

The motor has thermal overload protection.

Connections: Various fittings, see page 8.
 System pressure: Max. 10 bar.
 Liquid temperature range: +2°C to +95°C (TF 95).

Pump type	Product number	Dimensions [mm]									Weights [kg]		Ship. vol. [m³]
		L1	L2	H1	H2	H3	H4	B1	B2	G	Net	Gross	
UP 20-14 BX	96433887	110	-	25	21	133	-	73	84	G 1¼	1.20	1.32	0.0026
UP 20-14 BXU	96433888	110	-	25	21	-	205	73	84	G 1¼	1.35	1.51	0.0034
UP 20-14 BXT	96433889	110	-	25	21	155	-	73	84	G 1¼	1.25	1.44	0.0034
UP 20-14 BXUT	96433890	110	-	25	21	-	205	73	84	G 1¼	1.36	1.52	0.0034

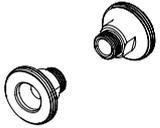
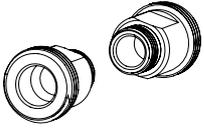
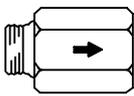
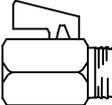
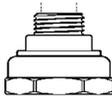
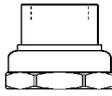
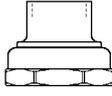
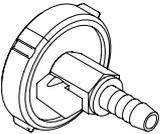
Timer and thermostat

Pump types B, BT, BX and BXT can be upgraded with a 24-hour timer, see the table below.

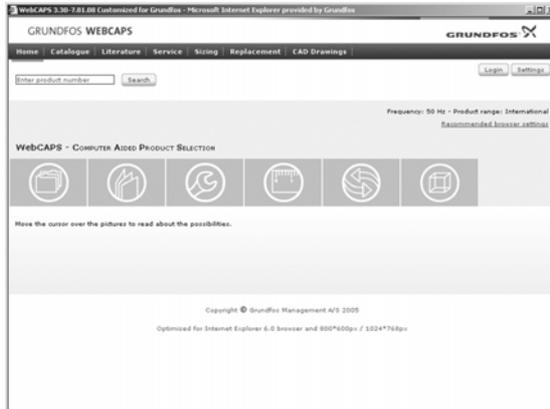
The timer for pump types BT and BXT includes a thermostat.

Pump type	Supplied with			Product numbers	
	24-hour timer	Thermostat	Isolating and non-return valves	24-hour timer	24-hour timer and thermostat
UP 15-14 B				96433891	
UP 15-14 BU	●				96433892
UP 15-14 BT		●			
UP 15-14 BUT	●	●			
UP 20-14 BX			●	96433891	
UP 20-14 BXU	●		●		96433892
UP 20-14 BXT		●	●		
UP 20-14 BXUT	●	●	●		

Fittings

Pump type	Fitting	Description	Connection	Material	Prod. no.
		TM01 8539 0300 Extension set Length = 35 mm each	Rp ½ / G 1¼	MS	96433911
		TM01 8540 0300 Extension set Length = 25 mm each	Rp ½ / G 1½	MS	96433912
UP 15-XX		TM01 8541 0300 Extension set Length = 30 mm each	Rp ½ / G 1	MS	96433913
		TM01 8647 0300 Non-return valve	½	MS	96433904
		TM01 8648 0300 Isolating valve	½	MS	96433905
		TM01 8542 0300 Extension set Length = 40 mm	G 1¼ / G 1¼	MS	96 43 65 59
		TM01 8643 0300 Union set	G 1¼ x 15 mm int. / R ½ ext.	MS	96433907
UP 20-XX		TM01 8644 0300 Union set	G 1¼ x Rp ¾ int.	MS	96433908
		TM01 8645 0300 Union set	G 1¼ x Rp ½ int. / R ¾ ext.	MS	96433909
		TM01 8646 0300 Union set	G 1¼ x 22 mm int.	MS	96433910
UP 15-XX UP 20-XX		TM01 8560 0300 Venting flange	Flange Union nut Hose	PP CuZn40Pb2 PE	96433906

WebCAPS

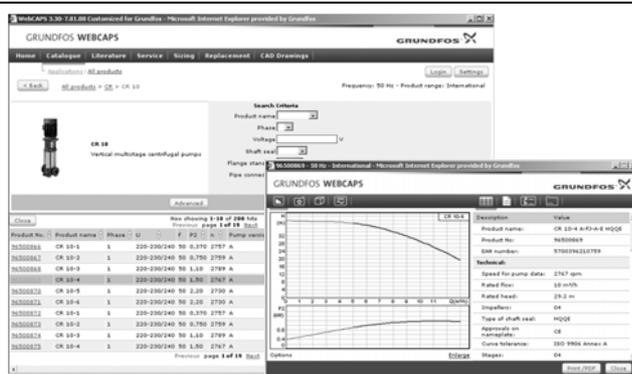


WebCAPS is a **Web-based Computer Aided Product Selection** program available on www.grundfos.com.

WebCAPS contains detailed information on more than 185,000 Grundfos products in more than 20 languages.

In WebCAPS, all information is divided into 6 sections:

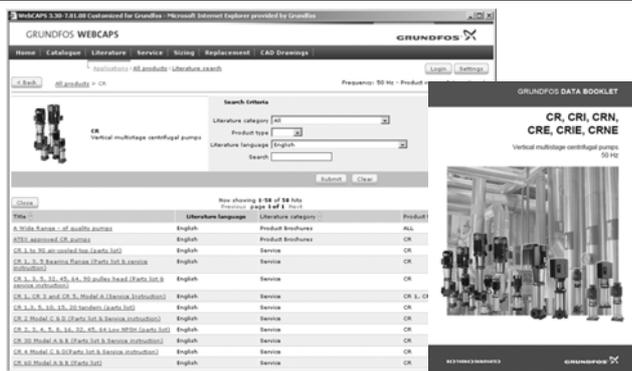
- Catalogue
- Literature
- Service
- Sizing
- Replacement
- CAD drawings.



Catalogue

This section is based on fields of application and pump types and contains

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



Literature

In this section you can access all the latest documents of a given pump, such as

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



Service

This section contains an easy-to-use interactive service catalogue. Here you can find and identify service parts of both existing and discontinued Grundfos pumps. Furthermore, this section contains service videos showing you how to replace service parts.



Sizing

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

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



Replacement

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

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



CAD drawings

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

These formats are available in WebCAPS:

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

WinCAPS



Fig. 5 WinCAPS CD-ROM

WinCAPS is a **Windows-based Computer Aided Product Selection** program containing detailed information on more than 185,000 Grundfos products in more than 20 languages.

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

WinCAPS is available on CD-ROM and updated once a year.

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Subject to alterations.