

Unilift CC, KP, AP

Submersible drainage and effluent pumps
50 Hz



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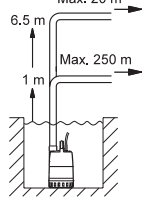

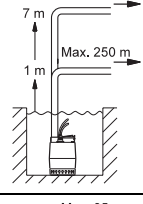

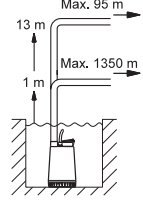

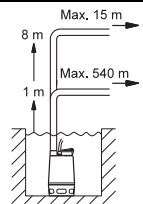

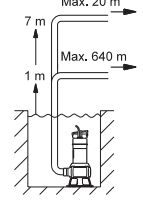

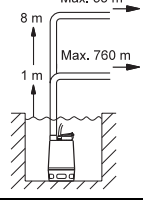

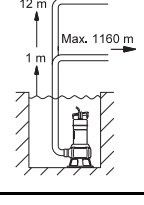
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Product range

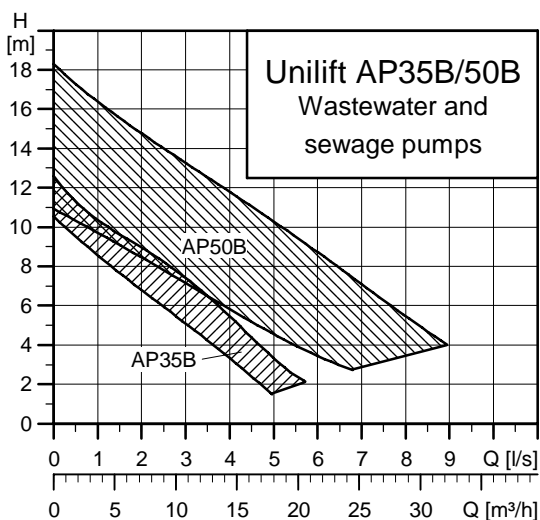
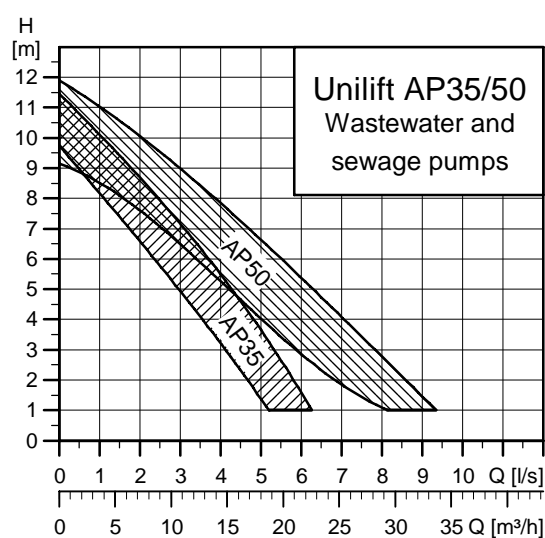
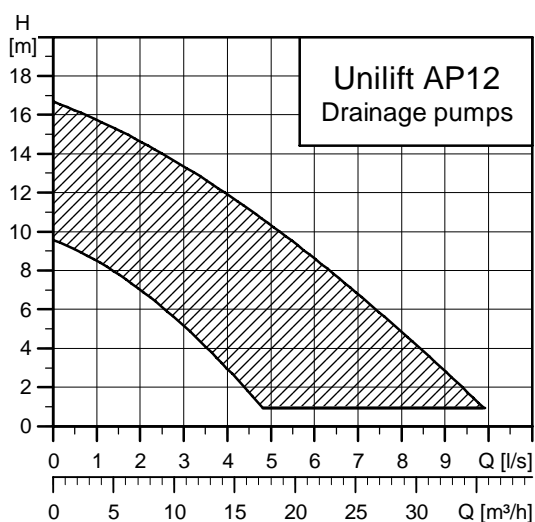
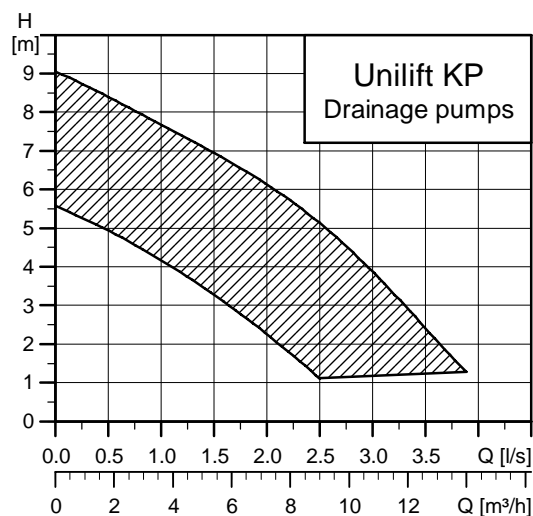
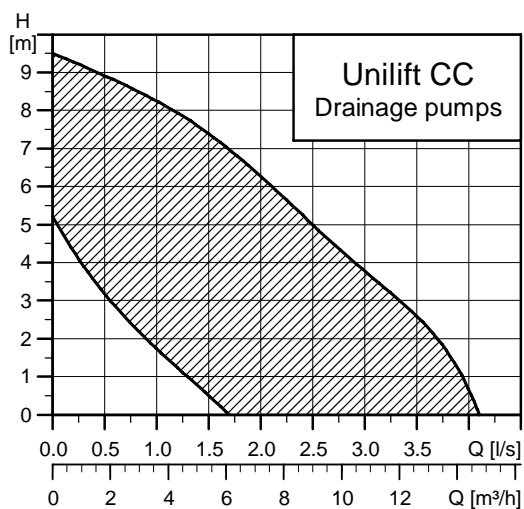
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	Application		Technical data	Sizing
Drainage	Unilift CC Submersible pump with a low-suction ability designed for pumping clean, non-aggressive water and slightly dirty (grey) wastewater. Unilift CC is suitable for both stationary and portable use.		GR A0682 <ul style="list-style-type: none"> Max. flow, Q: 14 m³/h Max. head, H: 9 m Liquid temp.: 0°C to +40°C Max. particle size: ø10 mm Material: Composite Low suction to 3 mm. 	 TM03 1883 3305
	Unilift KP Submersible pump designed for pumping clean, non-aggressive water and slightly dirty (grey) wastewater. Robust, compact design with hermetically sealed stator housing (wet runner).		GR A 2568 <ul style="list-style-type: none"> Max. flow, Q: 14 m³/h Max. head, H: 9 m Liquid temp.: 0°C to +50°C Max. particle size: ø10 mm Material: Stainless steel. 	 TM03 1884 3305
	Unilift AP12 Submersible pump designed for pumping clean, non-aggressive water and slightly dirty (grey) wastewater. Unilift AP12 can be used as a portable pump for installers and light industry.		TM03 1851 3205 <ul style="list-style-type: none"> Max. flow, Q: 32 m³/h Max. head, H: 17 m Liquid temp.: 0°C to +55°C Max. particle size: ø12 mm Material: Stainless steel. 	 TM03 1885 3305
Effluent	Unilift AP35 Submersible pump designed for pumping dirty water, untreated wastewater (excluding toilet discharge) and liquids containing fibres from light industry, laundries, etc. with particles up to ø35 mm.		TM00 5739 1195 <ul style="list-style-type: none"> Max. flow, Q: 18 m³/h Max. head, H: 11 m Liquid temp.: 0°C to +55°C Max. particle size: ø35 mm Material: Stainless steel. 	 TM03 1886 3305
	Unilift AP35B Submersible pump designed for pumping effluents (excluding toilet discharge). The pump is suitable for installation on auto-coupling allowing easy access to the pump, e.g. for maintenance.		TM01 4187 4998 <ul style="list-style-type: none"> Max. flow, Q: 21 m³/h Max. head, H: 13 m Liquid temp.: 0°C to +40°C Max. particle size: ø35 mm Material: Stainless steel Optional: Auto-coupling. 	 TM03 1888 3305
Domestic sewage	Unilift AP50 Submersible pump designed for pumping dirty water, untreated wastewater and liquids containing fibres from light industry, laundries, etc. with particles up to ø50 mm.		TM00 5740 1495 <ul style="list-style-type: none"> Max. flow, Q: 32 m³/h Max. head, H: 12 m Liquid temp.: 0°C to +55°C Max. particle size: ø50 mm Material: Stainless steel. 	 TM03 1887 3305
	Unilift AP50B Submersible pump designed for pumping effluents. The pump is suitable for installation on auto-coupling allowing easy access to the pump, e.g. for maintenance.		TM01 4187 4998 <ul style="list-style-type: none"> Max. flow, Q: 31 m³/h Max. head, H: 17 m Liquid temp.: 0°C to +40°C Max. particle size: ø50 mm Material: Stainless steel Optional: Auto-coupling. 	 TM03 1889 3305

Performance range



Applications

Unilift CC, KP and AP are submersible drainage pumps suitable for temporary as well as permanent free-standing installation. Furthermore, Unilift AP35B and AP50B pumps are suitable for installation on an auto-coupling at the bottom of a pit with guide rails going to the top.

The pumps are designed for intermittent operation.

pH values:

- Unilift CC: 4 to 9
- Unilift KP: 4 to 9
- Unilift AP: 4 to 10.

Maximum density: 1,100 kg/m³.

Maximum installation depth below water level: 10 m.

For permanent installation, level controllers are available: LC 107, LC 108 and LC 110 for one-pump installations and LCD 107, LCD 108 and LCD 110 for two-pump installations.

Examples of applications

Pump type	CC	KP	AP12	AP35	AP35B	AP50	AP50B
Max. liquid temperature	40°C	50°C	55°C	55°C	40°C	55°C	40°C
Max. particle size [mm]	10	10	12	35	35	50	50
Portable use	●	●	○	○	○	○	○
Horticulture	●	●	●				
Water from rivers and lakes	●	●	●	●	●	●	●
Rain water, drainage water and flood	●	●	●	●	●	●	●
Filling/emptying containers, ponds, tanks, etc.	●	●	●	●	●	●	●
Effluents from showers, washing machines and sinks below sewer level	●	●	●	●	●	●	●
Pool water	●	●	●	●	●	●	●
Ditch drainage water	●	●	●	●	●	●	●
Groundwater lowering	●	●	●	●	●	●	●
Domestic wastewater from septic and sludge-treating systems	○	○	●	●	●	●	●
Portable use for installers and light industry			●	●	●	●	●
Liquids containing fibres from light industry, laundries, etc.				●	●	●	●
Effluents from viaducts, underpasses, etc.				●	●	●	●
Drainage water from garage sprinkler systems				○	○	○	○
Domestic wastewater with discharge from pipes and toilets situated below sewer level, outdoor pump installations						●	●
Domestic wastewater with discharge from pipes and toilet situated below sewer level, indoor pump installations							

Not applicable, use Multilift

● = Recommended pump type

○ = Alternative pump type

Wastewater definitions

Drainage

Raw water, drainage and untreated wastewater containing solids no larger than 12 mm from households, farms and small industry.

Effluent

Dirty water and untreated wastewater (excluding toilet discharge), containing fibres and solids no larger than 50 mm from dewatering systems, domestic wastewater systems and small industry.

Sewage

Untreated wastewater and raw sewage containing fibres, textiles and other solids, including toilet discharge from domestic sewage systems, farms and industry.

To avoid clogging, pumps allowing free passage of solids up to 70-80 mm are recommended. Be aware that toilet discharge often contains foreign bodies such as nappies, tampons, toilet rolls, children's toys and toothbrushes.

Pump overview

Pump range Unilift	Free passage [mm]	Impeller type	Number of motor poles
CC	10	Semi-open	2
KP	10	Semi-open	2
AP12	12	Semi-open	2
AP35	35	Vortex	2
AP35B	35	Vortex	2
AP50	50	Vortex	2
AP50B	50	Vortex	2

Type keys

Unilift CC pumps

Example		CC	7	A1
CC	Pump range			
5				
7	Max. head [m]			
9				
A1	With float switch			
M1	Without float switch			

Unilift KP pumps

Example		KP	150	A	1
KP	Pump range				
150	150 W motor power output				
250	250 W motor power output				
350	350 W motor power output				
S	With integrated, electronic sensor				
A	With float switch				
M	Without level switch				
1	Single-phase voltage supply				
3	Three-phase voltage supply				

Unilift AP pumps

Example		AP	35	.40	.08	/1	A	.1	.V
AP	Pump range								
12-50	Max. free passage [mm]								
B	Basic								
40-50	Nominal diameter of discharge port [mm]								
0.4 -15	Power output $P_2/100$ [W]								
/1	Blank or 1 = Standard performance. 1 = Available with a reduced-diameter impeller. 2 = Reduced-diameter impeller meaning reduced performance								
A	With level switch								
1	Single-phase voltage supply								
Blank or 3	Three-phase voltage supply								
V	With vortex impeller								

Construction

Vertical, single-stage, submersible centrifugal pumps with horizontal or vertical discharge port, designed for free-standing installation, installation by means of an auto-coupling guide rail system, or for pit installation.

The pumps are directly connected to an asynchronous submersible motor for 1 x 230 V +6/–10%, 3 x 230 V +6/–10% or 3 x 400 V +6/–10%, 50 Hz.

Enclosure class: IP 68
Insulation class: B or F.

Unilift pumps

Single-phase pumps incorporate thermal overload protection and require no additional motor protection.

Three-phase pumps must be connected to a motor starter.

Installation

The pumps are suitable for free-standing installation. Unilift AP35B and AP50B can be installed on an auto-coupling guide rail system, available as an accessory.

Pumps for vertical dry pit installation can be installed by means of a stationary dry pit stand with suction bend.

Unilift CC



TM03 1358 1805

Fig. 1 Unilift CC

Unilift CC 5, CC 7 and CC 9 are single-stage, submersible pumps with a low-suction ability down to 3 mm water level. The pumps are designed for pumping rain-water and grey wastewater, e.g. from

- washing machines, baths, sinks, etc. from low-lying parts of buildings up to sewer level
- cellars or buildings prone to flooding
- drain pits
- surface water pits with inlets from roof gutters, shafts, tunnels, etc.
- swimming pools, ponds or fountains.

The pumps are suitable for both stationary and portable use. They are available in two versions:

- M for manual operation
- A for automatic operation.

The pumps allow free passage of particles up to Ø10 mm.

Approvals

VDE, GOST and LGA according to DIN EN 12050-2.

Pumped liquids

The pumps are suitable for:

- clean, non-aggressive water
- slightly dirty (grey) wastewater.

The pumps are **not** suitable for:

- liquids containing long fibres
- inflammable liquids (oil, petrol, etc.)
- aggressive liquids.

If the pump has been used for other liquids than clean water, it should be flushed through with clean water immediately after use.

Components included

The pump is supplied with an adaptor and a non-return valve.

The adaptor has ¾", 1" and 1¼" external threads. It must be cut to fit the discharge pipe.

The non-return valve can be fitted in the adaptor to prevent backflow through the pump when it stops.

Pump sleeve and housing

The sleeve is made of composite material cast in one piece with a 1¼" external pipe thread (G) discharge connection. A slot on the handle holds the float switch cable.

The main cable and flow switch cable are introduced into the sleeve through hermetically sealed cable inlets.

The suction strainer is fitted to the sleeve with a light push and can be removed easily by means of a screwdriver or similar tool. The water enters the pump through the holes of the suction strainer preventing the passage of large solids. The large holes also ensure a slow flow into the pump.

Suction to low water level is obtained by removing the strainer.

Motor

The motor is a single-phase, asynchronous, dry-running motor. The axial rotor position is secured by means of a ball bearing. The motor is cooled by the pumped liquid around the motor.

	Insulation class	Enclosure class
Unilift CC 5	B	IP 68
Unilift CC 7	F	IP 68
Unilift CC 9	B	IP 68

The motor incorporates automatic overload protection cutting out the motor in case of overload. When cooled to normal temperature, the motor restarts automatically.

Materials

Component	Material	DIN W.-Nr.
Motor sleeve	PP 15 GF	
Pump sleeve	PP 15 GF	
Motor		
Impeller	PPOm 20 GF	
Suction strainer	Stainless steel class A2	1.4301
V-ring	NBR 50	
O-rings	NBR 70	
Cable	H05RN-F 3G0.75 (CC 5) H07RN-F3G1 (CC 7 - CC 9)	

Selection

The below overview is suitable for the selection of the correct size of Unilift CC pumps used in stationary applications.

The flow velocity through the discharge pipe must be minimum 0.7 m/s to ensure self-cleaning.

Example: A DN 32 discharge pipe with an inner diameter of 26 to 34 mm (depending on local standards) requires a minimum flow velocity of approximately 2 m³/h.

The overview below shows the maximum lengths of combined vertical and horizontal DN 32 discharge pipes.

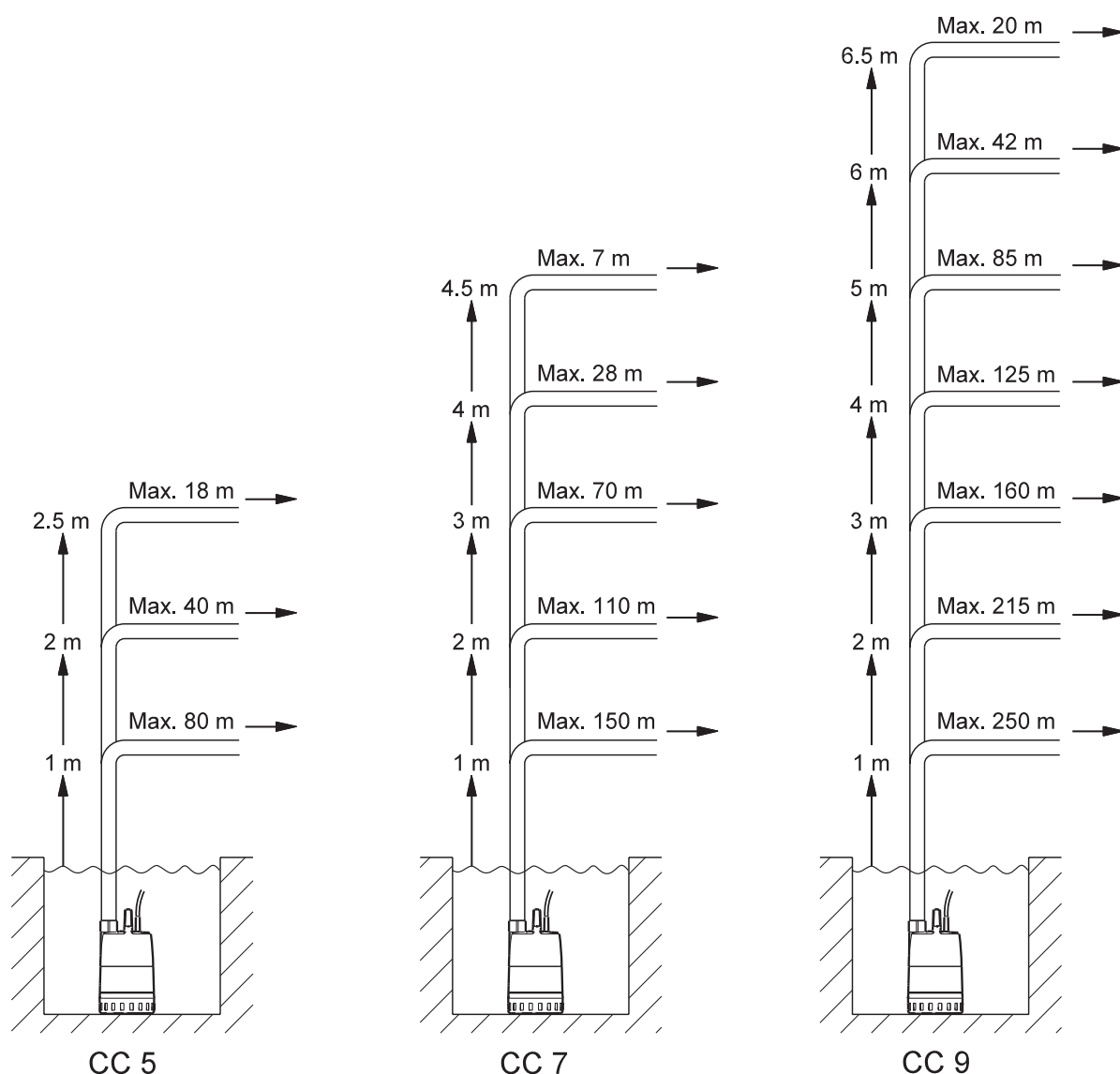


Fig. 2 Overview of maximum lengths of combined vertical and horizontal discharge pipes

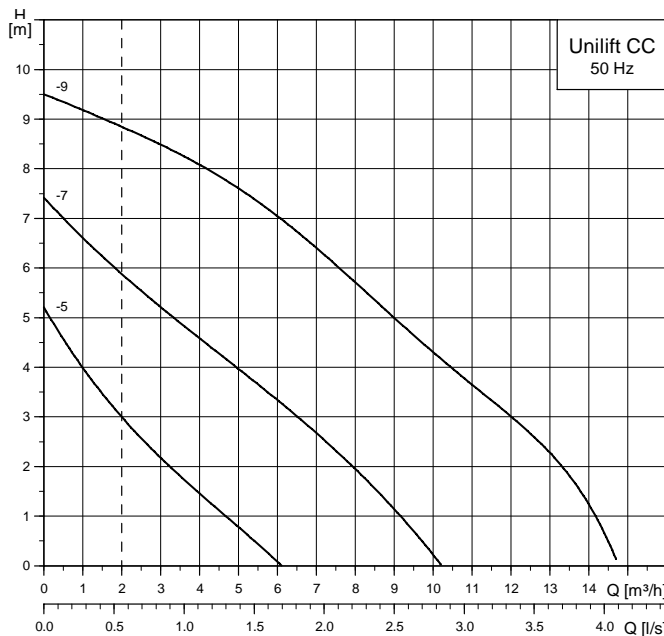
The above overview is only intended as a guide. Grundfos is not liable for any faulty installations based on the overview.

Note: If the non-return valve is used, the pressure drop in the valve is 0.2 m head at 2 m³/h, which is to be subtracted from the vertical pipe lengths.

The vertical height of the discharge pipe should be measured from the pump stop level.

TM03 1370 1805

Performance curves



The broken line represents a min. liquid velocity of 0.7 m/s with a DN 32 discharge pipe to DIN EN 12056.

Operating conditions

Liquid temperature

0°C to +40°C.

However, at intervals of at least 30 minutes, the pump is allowed to run at maximum +70°C for periods not exceeding two minutes.

Installation

The pump can be used in the vertical position as well as in the tilted or horizontal position with the discharge port as the highest point of the pump. The suction strainer must be covered by the pumped liquid.

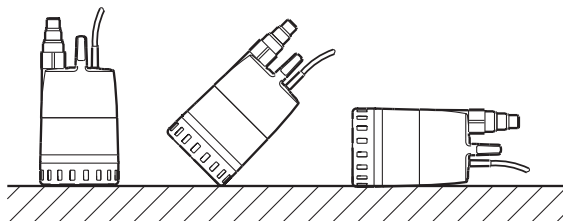


Fig. 3 Pump positions

Installation depth

Maximum 10 metres below the water surface.

Adjustment of cable length for float switch

The difference in level between start and stop can be adjusted by changing the free cable length between the float switch and the pump handle.

- Increasing the free cable length results in fewer starts/stops and a large difference in level.
- Reducing the free cable length results in more starts/stops and a small difference in level.

In order for the float switch to start and stop the pump, the free cable length must be minimum 100 mm and maximum 200 mm.

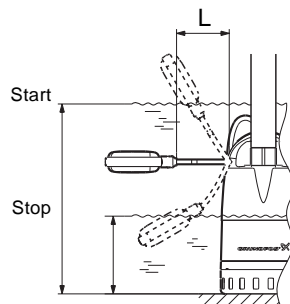


Fig. 4 Start/stop levels at min. and max. cable lengths

Pump type	Cable length (L) min. 100 mm		Cable length (L) max. 200 mm	
	Start [mm]	Stop [mm]	Start [mm]	Stop [mm]
Unilift CC 5	350	115	400	55
Unilift CC 7	350	115	400	55
Unilift CC 9	385	150	435	90

TM03 1346 1805

TM03 0829 0505

Technical data

Pump type	Voltage [V]	P ₁ [W]	I _n [A]	Dimensions [mm]					Weight [kg]
				H	B	H1	B1	B2	
Unilift CC 5	1 x 220/240	240	1.1	520	400	305	160	26.5	4.35
Unilift CC 7	1 x 220/240	380	1.7	520	400	305	160	26.5	4.6
Unilift CC 9	1 x 220-240	780	3.7	570	500	340	160	26.5	6.5

With float switch

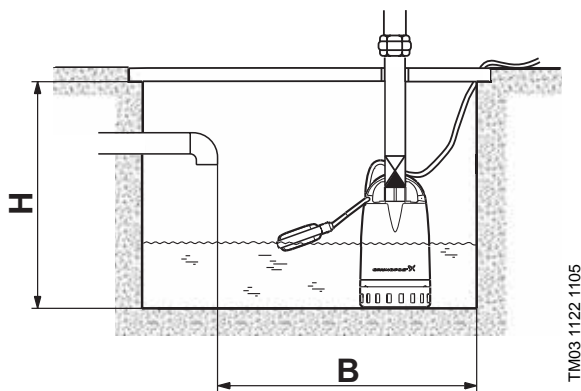


Fig. 5 Unilift CC with float switch

If the pump is installed in a pit, the minimum dimensions of the pit should be as shown above to ensure free movability of the float switch.

Without float switch

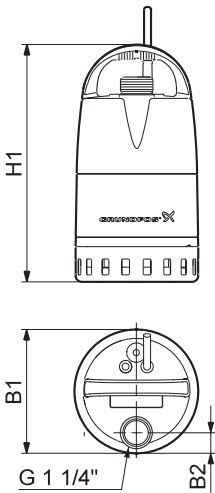


Fig. 6 Unilift CC without float switch

The space required corresponds to the physical dimensions of the pump.

Unilift KP



GrA2568

Fig. 7 Unilift KP-S

Unilift KP is a single-stage, submersible, stainless steel drainage pump in compact design with hermetically sealed stator housing (wet runner).

The pump can be installed in a permanent installation or used as a portable pump. It may be operated fully or partially submerged.

The pump is suitable for:

- pumping in drain pits
- pumping of wastewater without discharge from toilets
- drainage of flooded cellars or buildings
- emptying of swimming pools, tanks and fountains
- applications within agriculture, horticulture, dairies, breweries and the process industry.

Versions

The Unilift KP pump series comes in these versions:

- KP-S with integrated, electronic sensor (automatic operation)
- KP-A with float switch (automatic operation)
- KP-M without level switch (manual operation).

It is possible to upgrade a Unilift KP-A and a Unilift KP-M, 220-240 V, 50 Hz, to a Unilift KP-S. Contact Grundfos.

Special features of Unilift KP-S

- Compact design - requires a minimum of space
- Automatically self-venting if air is trapped in impeller
- Protected against blocked impeller and dry-running
- Integrated, nanocoded, super-slip, electronic sensor
- Starts even with a 2 mm thick layer of dirt on the sensor plate.

Approvals

CE, LGA, VDE, GS, EMV, GOST, UL, CSA and C-TICK.

Pumped liquids

The pump is suitable for

- clean, non-aggressive water
- slightly dirty (grey) wastewater.

The open-impeller construction ensures the free passage of solids up to $\varnothing 10$ mm.

Functions

Unilift KP-S

Automatic start/stop operation by means of a sensor.

The pump starts:

- when the liquid level reaches the sensor plate
- when the pump is connected to the electricity supply
- when the sensor plate is touched with a finger.

The pump stops:

- when the pump starts to suck air (automatic stop)
- if the impeller is blocked.

Unilift KP-A

Automatic start/stop operation by means of a float switch.

Unilift KP-M

Manual operation by means of external start/stop.

Construction

The stainless steel pump sleeve is made in one piece with Rp 1 1/4 discharge port and insulating handle. Mains cable and float switch cable are combined in one vulcanized and water-tight plug, secured to the socket of the hermetically sealed stator housing.

Liquid enters the pump through the holes of the suction strainer. The holes of the strainer prevent the passage of large solids.

The sturdy impeller has single-curved vanes. The bevelled front edges prevent fibres from jamming the impeller.

The guide vanes of the pump housing guide the liquid, lifting sand grains into the liquid flow. This prevents sand from blocking the impeller.

Motor

The motor is a single- or three-phase, asynchronous canned motor with liquid-filled rotor chamber and water-lubricated bearings. The motor is cooled by the pumped liquid around the motor.

Enclosure class: IP 68

Insulation class: F.

The motor incorporates automatic overload protection. In case of overload, the motor stops automatically. When cooled, the motor restarts automatically.

Selection

The below overview is suitable for the selection of the correct size of Unilift KP pumps used in stationary applications.

The flow velocity through the discharge pipe must be minimum 0.7 m/s to ensure self-cleaning.

Example: A DN 32 discharge pipe with an inner diameter of 26 to 34 mm (depending on local standards) requires a minimum flow velocity of approximately 2.3 m³/h.

The overview below shows the maximum lengths of combined vertical and horizontal DN 32 discharge pipes.

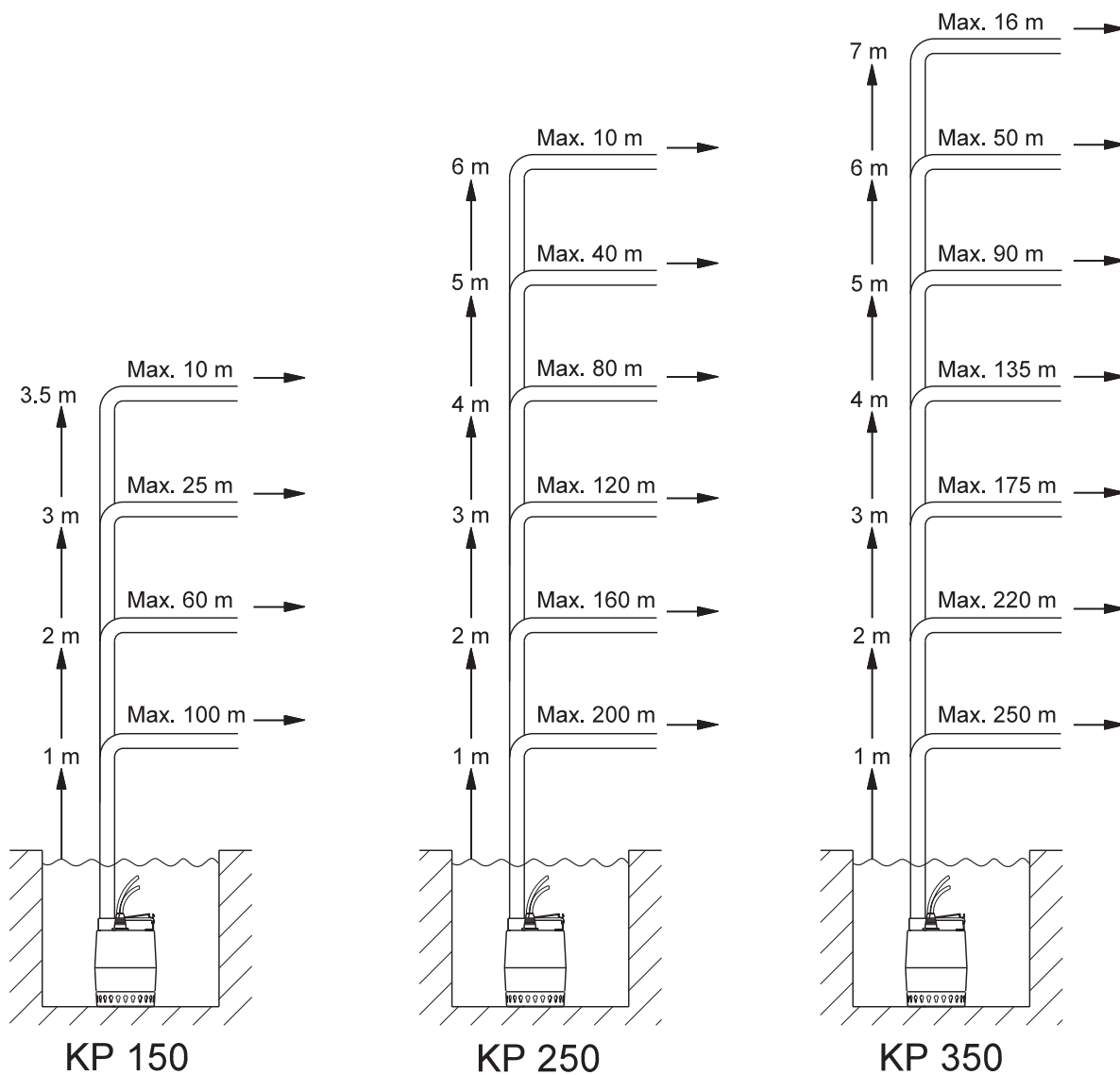


Fig. 8 Overview of maximum lengths of combined vertical and horizontal discharge pipes

The above overview is only intended as a guide. Grundfos is not liable for any faulty installations based on the overview.

Note: If the non-return valve is used, the pressure drop in the valve is 0.2 m head. The pressure drop is to be subtracted from the vertical pipe lengths.

The vertical height of the discharge pipe should be measured from the pump stop level.

TM03 1643 2505

Operating conditions

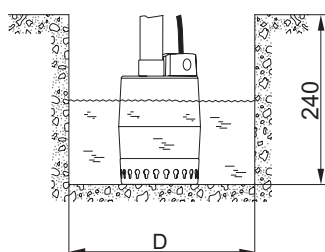
Installation depth:	Max. 10 metres below liquid level
Min. liquid temperature:	0°C
Max. liquid temperature at continuous operation:	50°C *

* At intervals of at least 30 minutes, the pump is allowed, however, to run at maximum +70°C for periods not exceeding 2 minutes.

During continuous operation, the suction strainer must always be completely covered by the liquid.

Installation

Unilift **KP-S** requires a minimum of space. If the pump is installed in a pit, the pit diameter must be minimum 200 mm to avoid too many starts and stops. Use the recommended dimensions in the table below.

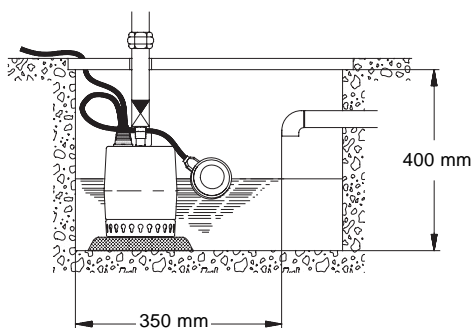


TM03 4674 2406

Fig. 9 Pit dimensions, Unilift KP-S

Pit diameter, D [mm]	200	250	300
Maximum inlet flow to the pit [m³/h]	0.3	0.7	1.3

If Unilift **KP-A** is installed in a pit, the minimum pit dimensions must be as shown in the figure below.



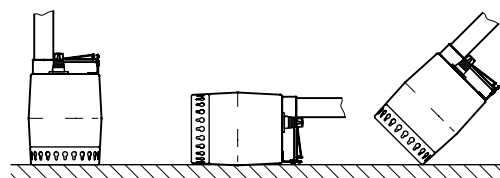
TM03 4445 2106

Fig. 10 Minimum pit dimensions, Unilift KP-A

Pump positioning

Unilift **KP-M** and Unilift **KP-A** can be used in the vertical position with the discharge port uppermost or in the horizontal or tilted position with the discharge port as the highest point of the pump.

Unilift **KP-S** must be used in the vertical position.



TM00 1548 0493

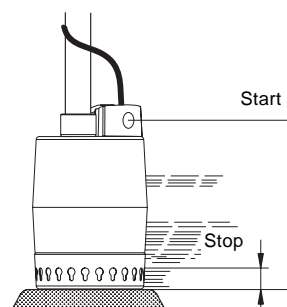
Fig. 11 Pump positions

Level switches

A level switch starts and stops the pump between two liquid levels. This type of installation requires a non-return valve in the discharge pipe or the pump. Unilift KP pumps are available with two different level switch types.

Unilift KP-S with electronic sensor

The sensor is integrated in the pump. Consequently, the difference in level between start and stop cannot be adjusted.



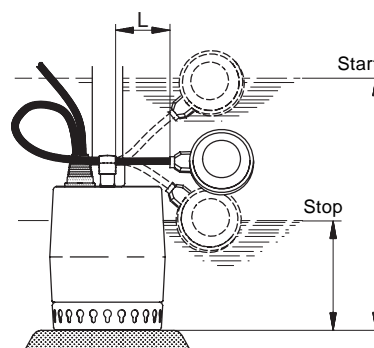
TM03 4446 2106

Fig. 12 Start-stop level, Unilift KP-S

Pump type	Start [mm]	Stop [mm]
Unilift KP-S 150		
Unilift KP-S 250	205	15
Unilift KP-S 350	215	15

Unilift KP-A with float switch

A clamp on the pump handle holds the float switch cable. The difference in level between start and stop can be adjusted by changing the free cable length between pump handle and float switch.

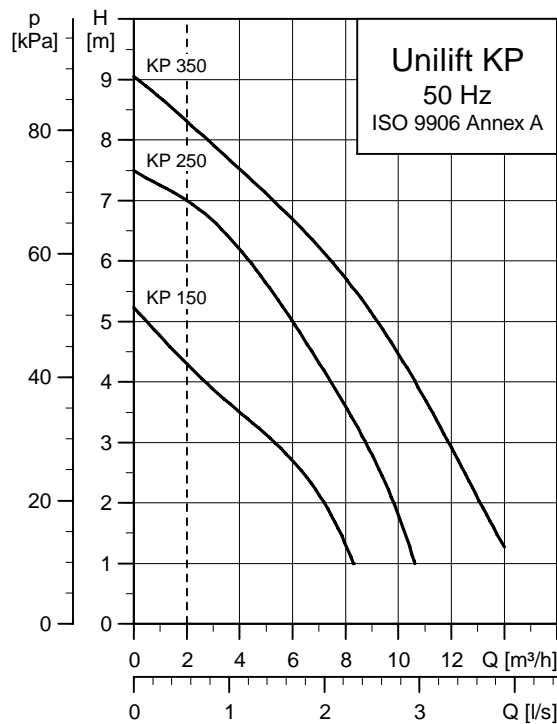


TM03 4446 2106

Fig. 13 Start/stop levels at min. and max. cable lengths, Unilift KP-A

Pump type	Cable length (L) min. 70 mm		Cable length (L) max. 150 mm	
	Start [mm]	Stop [mm]	Start [mm]	Stop [mm]
Unilift KP-A 150				
Unilift KP-A 250	290	140	335	100
Unilift KP-A 350	300	150	345	110

Performance curves



The broken line shows a minimum liquid velocity of 0.7 m/s with a DN 32 discharge pipe to DIN EN 12056.

TM03 1593 2505

Pump type	Supply voltage [V]	Power P_1 [W]	Current, I_n [A]	Power factor $\cos \varphi$	Speed $[\text{min}^{-1}]$	Capacitor μF
KP 150	1 x 220-230	300	1.3	0.99	2900	8
KP 150	1 x 230-240					
KP 250	1 x 220-230	480	2.3	0.97	2900	8
KP 250	1 x 230-240					
KP 250*	3 x 380-415	480 (415 V)	0.8			
KP 350	1 x 220-240	700	3.2	0.99	2900	8
KP 350*	3 x 380-400					

* Not available in the Unilift KP-S version.

Pump dimensions

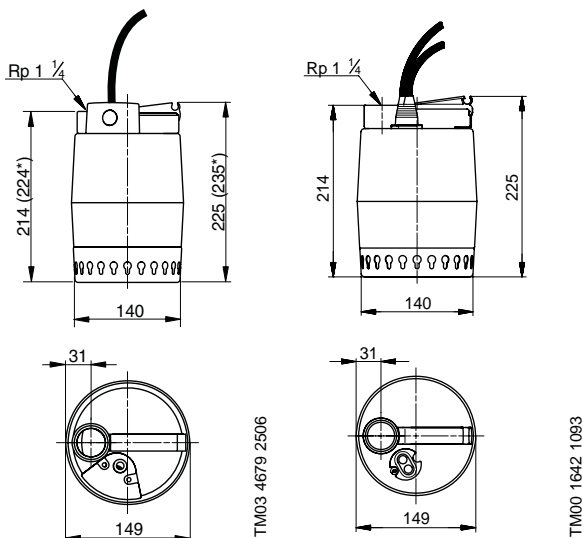


Fig. 14 Pump dimensions

* Unilift KP-350

Materials

Component	Material	DIN W.-Nr.	AISI
Pump sleeve	Stainless steel	1.4301	304
Pump housing	Stainless steel	1.4301	304
Suction strainer	Stainless steel	1.4301	304
Impeller	Stainless steel	1.4301	304
Shaft	Stainless steel	1.4057	431
Stator housing	Stainless steel	1.4301	304
Guide vanes	Stainless steel	1.4301	304
Bearings	Carbon		
O-rings	NBR		
Seal rings			
Cables	H07RN-F 3 G 1 H07RN-F 4 G 1		

Unilift AP12



TM00 5738 0895

Fig. 15 Unilift AP12

Unilift AP12 is a single-stage submersible pump designed for pumping drainage water.

The pump is suitable for:

- groundwater lowering
- pumping in drainage pits
- pumping in surface water pits with inflow from roof gutters, shafts, tunnels, etc.
- emptying of ponds, tanks, etc.

Maximum particle size: 12 mm.

Liquid temperature range: 0°C to +55°C.

Approvals

VDE, LGA, GOST, C-tick, UL, CSA and JET.

Automatic operation

The pump is available for automatic as well as manual operation and can be installed in a permanent installation or used as a portable pump. The pump is available:

- with level switch fitted for automatic on/off operation between two liquid levels (single-phase pumps)
- with separate level switch and control box for automatic on/off operation between two liquid levels (three-phase pumps)
- without level switch for manual on/off operation.

Pumps fitted with level switches can also be used for manual on/off operation. In this case, the level switch must be secured in an upward-pointing position.

Pump sleeve and housing

The stainless steel pump sleeve is made in one piece and equipped with an insulated carrying handle. The suction strainer is clipped on to the pump housing for easy removal in connection with maintenance. The strainer prevents the passage of large solids and ensures a slow flow into the pump. As a result, most impurities are deposited outside the pump.

The stainless steel pump housing is fitted with an internal riser pipe ensuring high efficiency.

The riser pipe has a number of holes enabling efficient cooling of the motor during operation. The cable entry is of the socket and plug connection type for quick and easy dismantling.

Discharge port

All Unilift AP12 pumps have a threaded vertical discharge port.

Unilift AP12.40: Rp 1½"

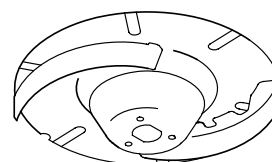
Unilift AP12.50: Rp 2".

Shaft and bearings

The stainless steel shaft rotates in maintenance-free prelubricated ball bearings.

Impeller

The stainless steel impeller is a semi-open impeller with L-shaped blades and a clearance of 12 mm. The blades are curved backwards to reduce any harmful effect from solid particles and to minimise power consumption.



TM00 5477 0895

Fig. 16 Impeller

Shaft seal

The shaft seal is a combination of a mechanical bellows shaft seal and a lip seal with 60 ml oil between. Seal faces are made of silicon carbide.

Motor

The motor is a single- or three-phase asynchronous dry-running motor.

Enclosure class: IP 68

Insulation class: F (155°C)

Cable type: H07RN-F.

Single-phase motors have built-in thermal protection.

Materials

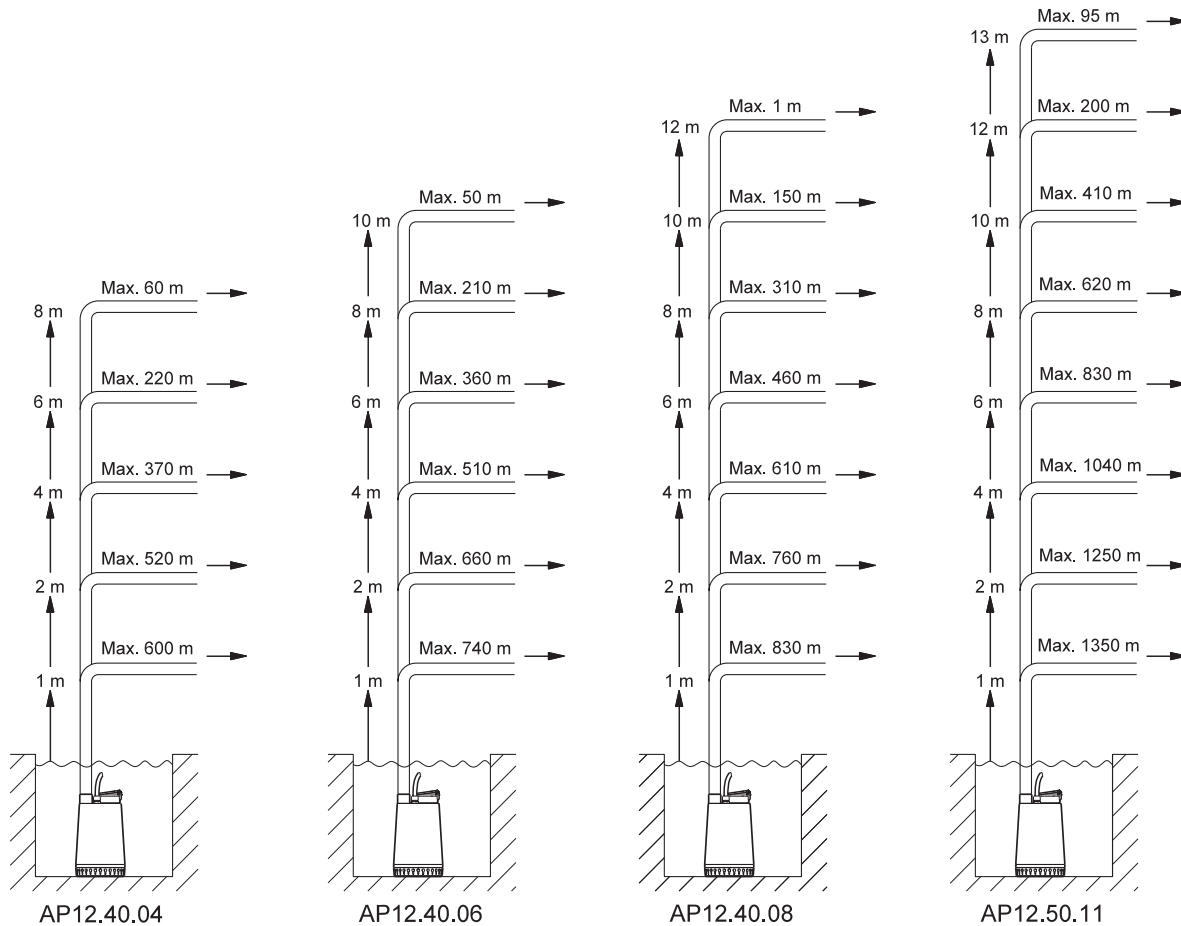
Component	Material	DIN W.-Nr.	AISI
Pump housing	Stainless steel	1.4301	304
Riser pipe	Stainless steel	1.4301	304
Impeller	Stainless steel	1.4301	304
Pump sleeve	Stainless steel	1.4401	316
Shaft	Stainless steel	1.4305	
Bearings	Heavy-duty prelubricated ball bearings		
O-rings	NBR rubber		
Screws	Stainless steel	1.4301	304
Oil	Shell Ondina 15, non-toxic		

Selection

The below overview is suitable for the selection of the correct size of Unilift AP12 pumps used in stationary applications.

To ensure that the discharge pipe is self-cleaning, the calculation of the pipe lengths is based on:

- the use of steel pipes
- a minimum flow velocity through the vertical discharge pipe of 1 m/s (1½" for AP12.40.xx and 2" for AP12.50.11)
- a minimum flow velocity through the horizontal discharge pipe of 0.7 m/s (2" for AP12.40.xx and 2½" for AP12.50.11).



TM03 1878 3305

Fig. 17 Overview of maximum lengths of combined vertical and horizontal discharge pipes

The above overview is only intended as a guide. Grundfos is not liable for any faulty installations based on the overview.

Note: If the non-return valve is used, the pressure drop in the valve is 0.2 m head, which is to be subtracted from the vertical pipe lengths.

The vertical height of the discharge pipe should be measured from the pump stop level.

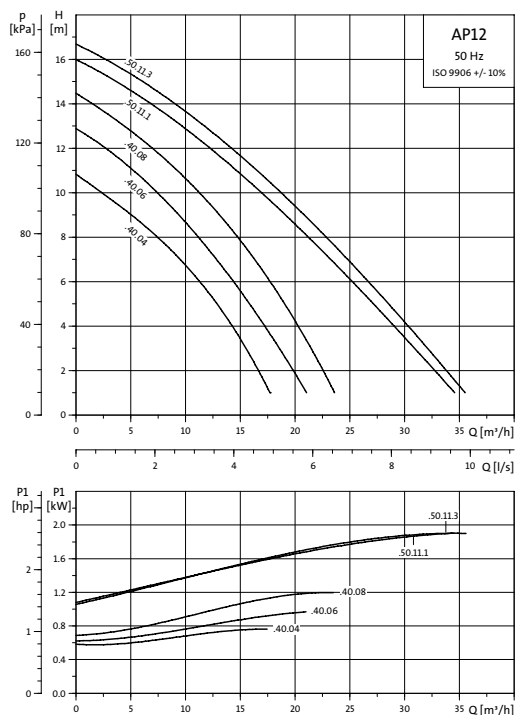


Fig. 18 Performance curves

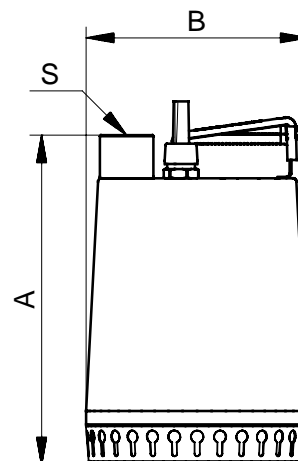


Fig. 19 Dimensions

TM00 5523 0995

TM00 7212 0803

Pump type	Voltage [V]	P ₁ [kW]	P ₂ [kW]	I _n [A]	Cos φ	I _{start} I _n	Dimensions [mm]			Weight [kg]
							A	B	S	
AP12.40.04.1	1 x 230	0.8	0.4	3.0	0.99	3.8	321	216	Rp 1½	11.0
AP12.40.04.A1	1 x 230	0.8	0.4	3.0	0.99	3.8	321	216	Rp 1½	11.0
AP12.40.04.3	3 x 230	0.8	0.4	2.2	0.85	4.7	321	216	Rp 1½	9.7
AP12.40.04.A.3	3 x 230	0.8	0.4	2.2	0.85	4.7	321	216	Rp 1½	12.0
AP12.40.04.3	3 x 400	0.8	0.4	1.2	0.83	5.0	321	216	Rp 1½	9.7
AP12.40.04.A.3	3 x 400	0.8	0.4	1.2	0.83	5.0	321	216	Rp 1½	12.0
AP12.40.06.1	1 x 230	1.0	0.6	4.4	0.99	3.8	321	216	Rp 1½	11.0
AP12.40.06.A.1	1 x 230	1.0	0.6	4.4	0.99	3.8	321	216	Rp 1½	11.0
AP12.40.06.3	3 x 230	1.0	0.6	2.9	0.83	5.4	321	216	Rp 1½	10.7
AP12.40.06.A.3	3 x 230	1.0	0.6	2.9	0.83	5.4	321	216	Rp 1½	13.0
AP12.40.06.3	3 x 400	1.0	0.6	1.6	0.83	4.8	321	216	Rp 1½	10.7
AP12.40.06.A.3	3 x 400	1.0	0.6	1.6	0.83	4.8	321	216	Rp 1½	10.7
AP12.40.08.1	1 x 230	1.3	0.8	5.9	0.99	3.8	346	216	Rp 1½	12.6
AP12.40.08.A.1	1 x 230	1.3	0.8	5.9	0.99	3.8	346	216	Rp 1½	12.6
AP12.40.08.3	3 x 230	1.2	0.8	3.7	0.85	4.7	346	216	Rp 1½	12.0
AP12.40.08.A.3	3 x 230	1.2	0.8	3.7	0.85	4.7	346	216	Rp 1½	14.3
AP12.40.08.3	3 x 400	1.2	0.8	2.1	0.87	4.9	346	216	Rp 1½	12.0
AP12.40.08.A.3	3 x 400	1.2	0.8	2.1	0.87	4.9	346	216	Rp 1½	14.3
AP12.50.11.1	1 x 230	1.9	1.1	8.5	0.92	3.8	357	241	Rp 2	15.1
AP12.50.11.A.1	1 x 230	1.9	1.1	8.5	0.92	3.8	357	241	Rp 2	15.1
AP12.50.11.3	3 x 230	1.9	1.1	6.4	0.85	3.6	357	241	Rp 2	15.6
AP12.50.11.A.3	3 x 230	1.9	1.1	6.4	0.85	3.6	357	241	Rp 2	17.9
AP12.50.11.3	3 x 400	1.9	1.1	3.2	0.88	4.6	357	241	Rp 2	15.6
AP12.50.11.A.3	3 x 400	1.9	1.1	3.2	0.88	4.6	357	241	Rp 2	17.9

Unilift AP12 installations

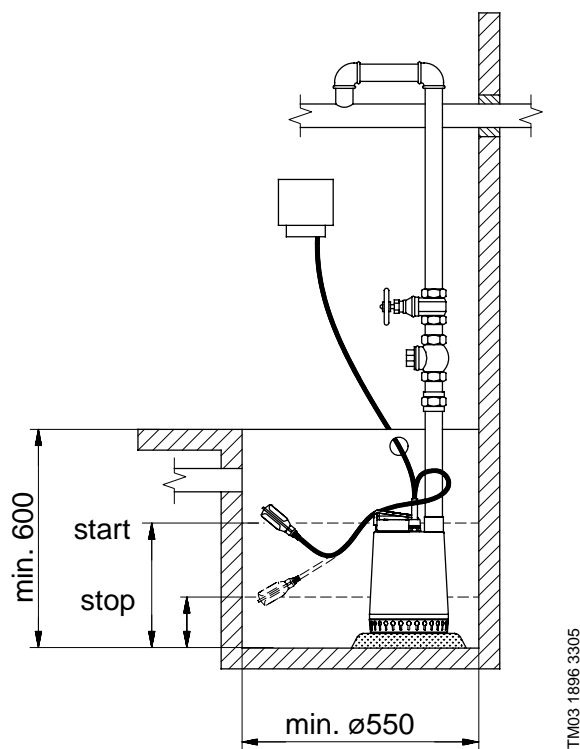


Fig. 20 Unilift AP12 installation, one pump

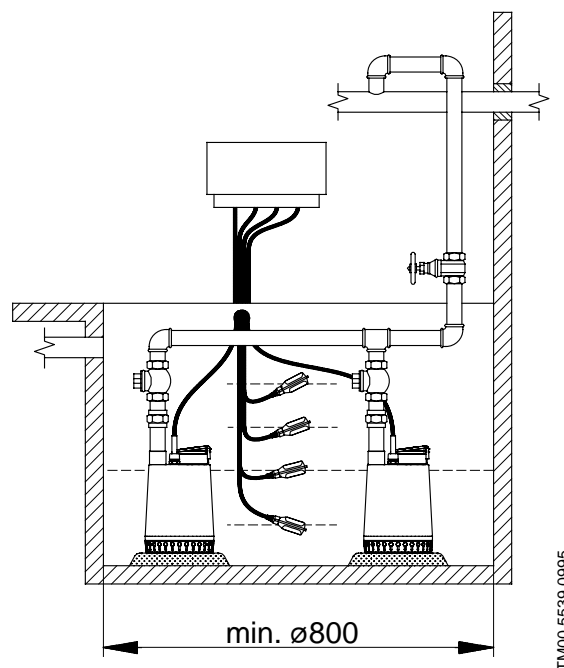


Fig. 21 Unilift AP12 installation, two pumps

Adjustment of cable length for float switch

The difference in level between start and stop can be adjusted by changing the free cable length between the float switch and the pump handle.

- Increasing the free cable length results in fewer starts/stops and a large difference in level.
- Reducing the free cable length results in more starts/stops and a small difference in level.

In order for the float switch to start and stop the pump, the free cable length must be min. 100 mm and max. 350 mm.

Pump type	Cable length min. 100 mm		Cable length max. 350 mm	
	Start [mm]	Stop [mm]	Start [mm]	Stop [mm]
AP12	500	300	550	100

Unilift AP35



TM00 5739 1195

Fig. 22 Unilift AP35

Unilift AP35 is a single-stage, submersible pump designed for pumping drainage water and effluent. The pump is suitable for:

- groundwater lowering
- pumping in drainage pits
- pumping in surface water pits with inflow from roof gutters, shafts, tunnels, etc.
- emptying of ponds, tanks, etc.
- pumping of fibre-containing wastewater from laundries and industries
- pumping of domestic wastewater without discharge from water closets.

Liquid temperature range: 0°C to +55°C.

Approvals

VDE, LGA, GOST, C-tick, UL, CSA and JET.

Automatic operation

The pump is available for automatic as well as manual operation and can be installed in a permanent installation or used as a portable pump. The pump is available:

- with level switch fitted for automatic on/off operation between two liquid levels (single-phase pumps)
- with separate level switch and control box for automatic on/off operation between two liquid levels (three-phase pumps)
- without level switch for manual on/off operation.

Pumps fitted with level switches can also be used for manual on/off operation. In this case the level switch must be secured in an upward-pointing position.

Pump sleeve and housing

The stainless steel pump sleeve is made in one piece and equipped with an insulated carrying handle.

The suction strainer is clipped on to the pump housing for easy removal in connection with maintenance. The strainer prevents the passage of large solids and ensures a slow flow into the pump.

The stainless steel pump housing is fitted with an internal riser pipe ensuring high efficiency. The riser pipe has a number of holes enabling efficient cooling of the motor during operation. The cable entry is of the socket and plug connection type, allowing for quick and easy dismantling.

Discharge port

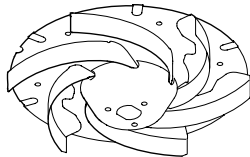
All Unilift AP35 pumps have a threaded vertical discharge port of Rp 1½".

Shaft and bearings

The stainless steel shaft rotates in maintenance-free prelubricated ball bearings.

Impeller

The stainless steel impeller is a vortex impeller with L-shaped blades and a clearance of 35 mm in the pump housing. The blades are curved backwards to reduce any harmful effect from solid particles and to minimise power consumption. The impeller has a protective cap to prevent the deposit of long-fibred material.



TM00 5478 0895

Fig. 23 Impeller

Shaft seal

The shaft seal is a combination of a mechanical, bellows shaft seal and a lip seal with 60 ml oil between. Seal faces are made of silicon carbide.

Motor cable

The motor is a single- or three-phase asynchronous dry-running motor.

Enclosure class: IP 68
Insulation class: F (155°C)
Cable type: H07RN-F.

Single-phase motors have built-in thermal protection.

Materials

Component	Materials	DIN W.-Nr.	AISI
Pump housing	Stainless steel	1.4301	304
Riser pipe	Stainless steel	1.4301	304
Impeller	Stainless steel	1.4301	304
Pump sleeve	Stainless steel	1.4401	316
Shaft	Stainless steel	1.4305	
Bearings	Heavy-duty prelubricated ball bearings		
O-rings	NBR rubber		
Screws	Stainless steel	1.4301	304
Cables	Neoprene		
Oil	Shell Ondina 15, non-toxic		

Selection

The below overview is suitable for the selection of the correct size of Unilift AP35 pumps used in stationary applications.

To ensure that the discharge pipe is self-cleaning, the calculation of the pipe lengths is based on:

- the use of steel pipes
- a minimum flow velocity through the vertical discharge pipe (1½") of 1 m/s
- a minimum flow velocity through the horizontal discharge pipe (2") of 0.7 m/s.

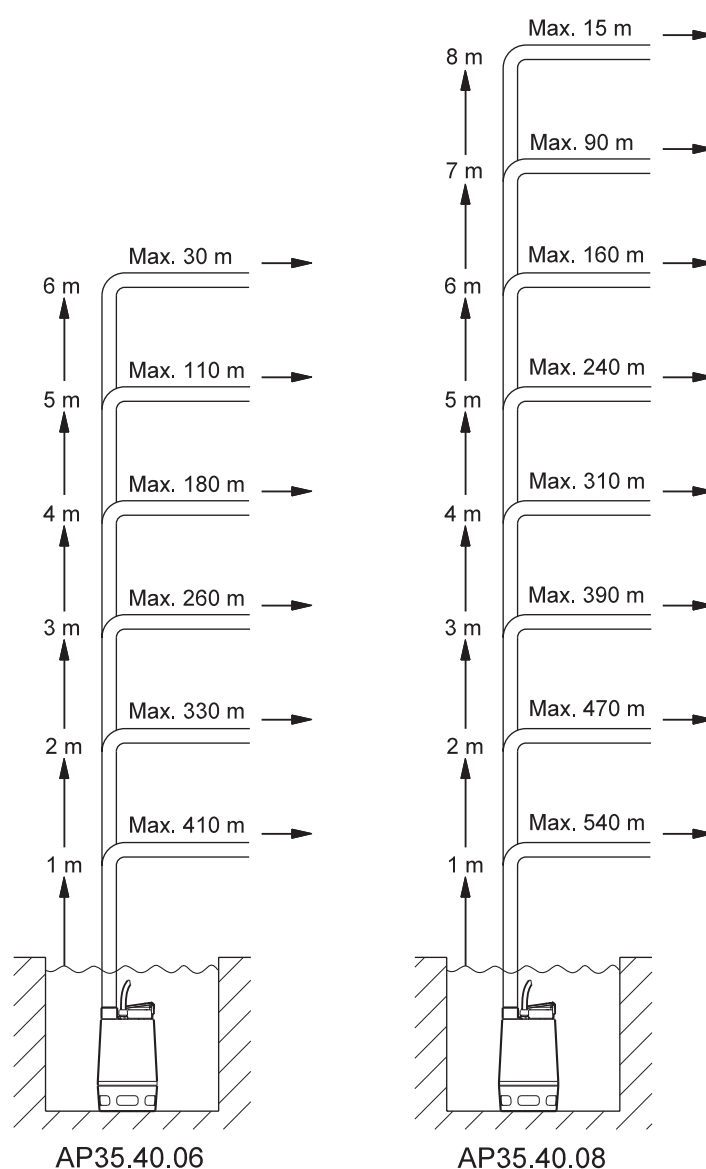


Fig. 24 Overview of maximum lengths of combined vertical and horizontal discharge pipes

The above overview is only intended as a guide. Grundfos is not liable for any faulty installations based on the overview.

Note: If the non-return valve is used, the pressure drop in the valve is 0.2 m head, which is to be subtracted from the vertical pipe lengths.

The vertical height of the discharge pipe should be measured from the pump stop level.

TM03 1879 3305

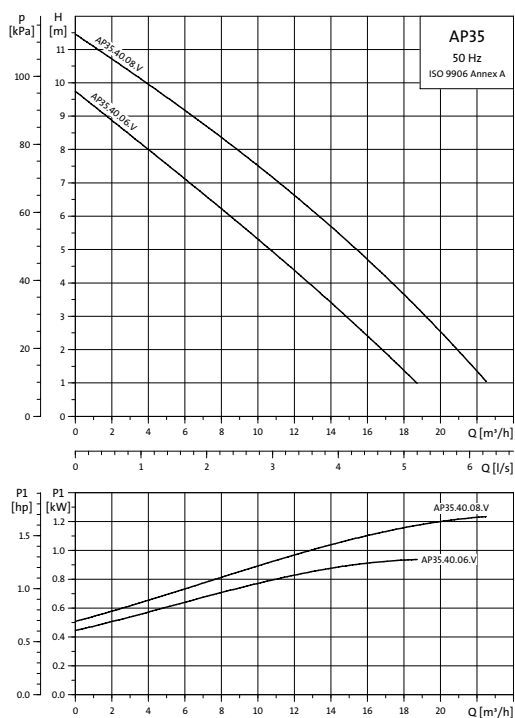


Fig. 25 Performance curves

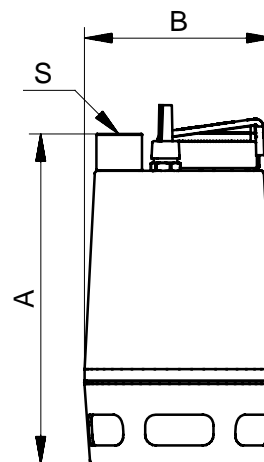


Fig. 26 Dimensions

TM00 5524 0995

Pump type	Voltage [V]	P ₁ [kW]	P ₂ [kW]	I _n [A]	Cos φ	$\frac{I_{start}}{I_n}$	Dimensions [mm]			Weight [kg]
							A	B	S	
AP35.40.06.1.V	1 x 230	0.9	0.6	4.0	0.97	4.1	376	216	Rp 1½	11.4
AP35.40.06.A.1.V	1 x 230	0.9	0.6	4.0	0.97	4.1	376	216	Rp 1½	11.4
AP35.40.06.3.V	3 x 230	1.0	0.6	3.0	0.85	5.2	376	216	Rp 1½	11.1
AP35.40.06.A.3.V	3 x 230	1.0	0.6	3.0	0.85	5.2	376	216	Rp 1½	13.4
AP35.40.06.3.V	3 x 400	0.9	0.6	1.6	0.83	4.8	376	216	Rp 1½	11.1
AP35.40.06.A.3.V	3 x 400	0.9	0.6	1.6	0.83	4.8	376	216	Rp 1½	13.4
AP35.40.08.1.V	1 x 230	1.2	0.8	5.5	0.98	4.0	410	216	Rp 1½	12.7
AP35.40.08.A.1.V	1 x 230	1.2	0.8	5.5	0.98	4.0	410	216	Rp 1½	12.7
AP35.40.08.3.V	3 x 230	1.3	0.8	3.6	0.85	5.3	410	216	Rp 1½	12.1
AP35.40.08.A.3.V	3 x 230	1.3	0.8	3.6	0.85	5.3	410	216	Rp 1½	14.4
AP35.40.08.3.V	3 x 400	1.1	0.8	2.0	0.86	5.1	410	216	Rp 1½	12.1
AP35.40.08.A.3.V	3 x 400	1.1	0.8	2.0	0.86	5.1	410	216	Rp 1½	14.4

Unilift AP35 installations

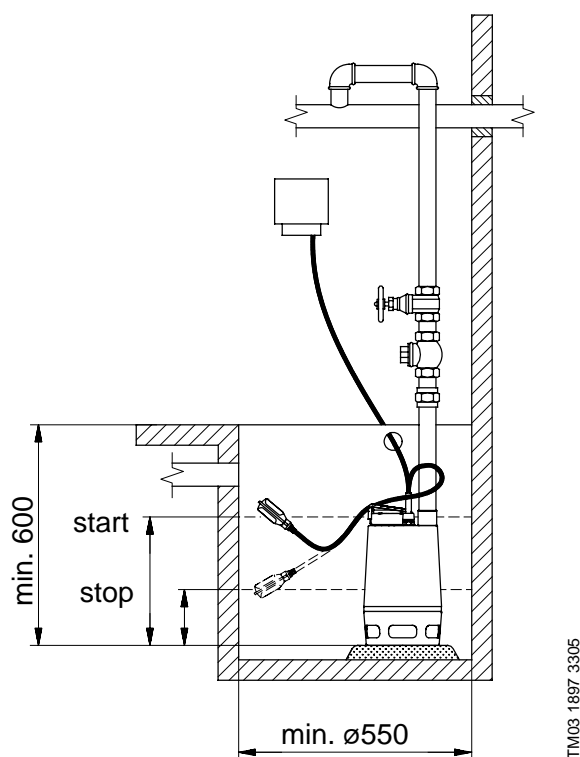


Fig. 27 Unilift AP35 installation, one pump

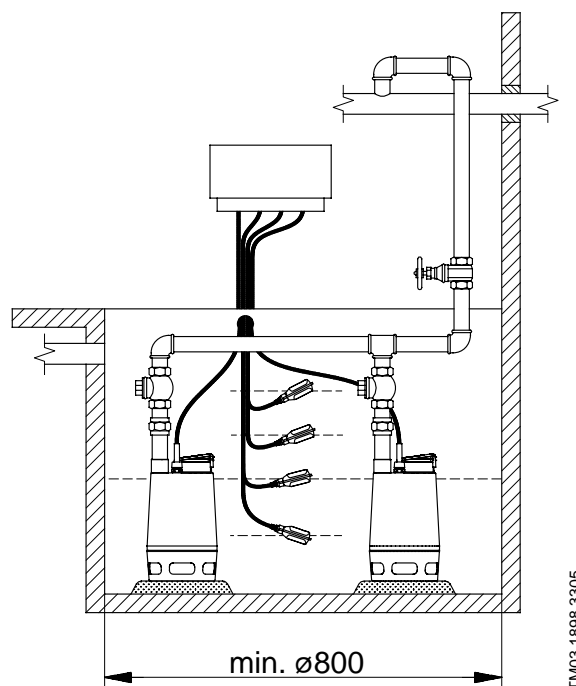


Fig. 28 Unilift AP35 installation, two pumps

Adjustment of cable length for float switch

The difference in level between start and stop can be adjusted by changing the free cable length between the float switch and the pump handle.

- Increasing the free cable length results in fewer starts/stops and a large difference in level.
- Reducing the free cable length results in more starts/stops and a small difference in level.

In order for the float switch to start and stop the pump, the free cable length must be min. 100 mm and max. 350 mm.

Pump type	Cable length min. 100 mm		Cable length max. 350 mm	
	Start [mm]	Stop [mm]	Start [mm]	Stop [mm]
AP35	500	300	550	100

Unilift AP35B



TM01 4187 4998

Fig. 29 Unilift AP35B

Unilift AP35B is a single-stage submersible pump designed for pumping effluent.

The pump is suitable for:

- groundwater lowering
- pumping in drainage pits
- pumping in surface water pits with inflow from roof gutters, shafts, tunnels, etc.
- emptying of ponds, tanks, etc.
- pumping of fibre-containing effluent from laundries and industries
- pumping of domestic effluent from septic tanks and sludge treating systems
- pumping of domestic effluent without discharge from water closets.

Liquid temperature range: 0°C to +40°C.

Automatic operation

The pump is available for automatic as well as manual operation and can be installed in a permanent installation or used as a portable pump. The pump is available:

- with level switch fitted for automatic on/off operation between two liquid levels (single-phase pumps)
- without level switch for manual on/off operation.

Pumps fitted with level switches can also be used for manual on/off operation. In this case, the level switch must be secured in an upward-pointing position.

Pump housing

Pump housing with an outstanding design for submersible wastewater pumps, resulting in a high head.

The pump housing is made of a steel tube with a smooth surface and a hydraulically correct shape ensuring free passage of particles.

Base, pump inlet and pump housing are fastened to the motor by means of four springs enabling quick and easy dismantling.

Discharge port

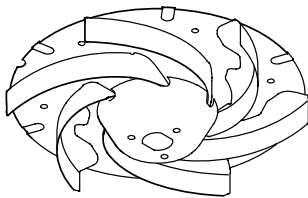
All Unilift AP35B pumps have a threaded horizontal discharge port of R 2".

Shaft and bearings

The stainless steel shaft rotates in maintenance-free prelubricated ball bearings.

Impeller

The stainless steel impeller is a vortex impeller with L-shaped blades and a clearance of 35 mm in the pump housing. The blades are curved backwards to reduce any harmful effect from solid particles and to minimise power consumption. The impeller has a protective cap to prevent the deposit of long-fibred material.



TM00 5478 0895

Fig. 30 Impeller

Shaft seal

The shaft seal is a combination of a mechanical, bellows shaft seal and a lip seal with 80 ml oil between. Seal faces are made of silicon carbide.

Motor cable

The motor is a single- or three-phase asynchronous dry-running motor.

Enclosure class: IP 68
Insulation class: F (155°C)
Cable type: H07RN-F.

Single-phase motors have built-in thermal protection.

Materials

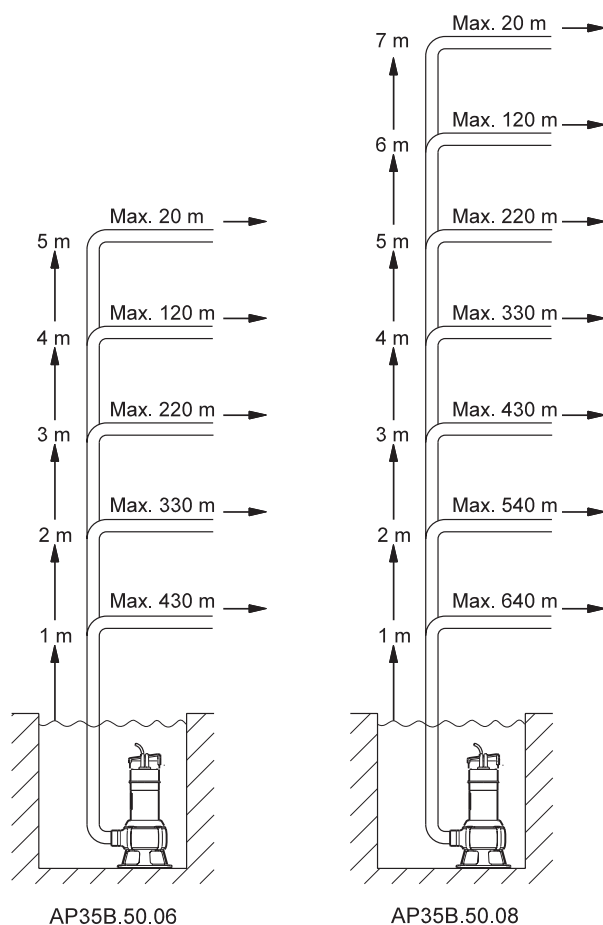
Component	Material	DIN W.-Nr.	AISI
Pump housing	Stainless steel	1.4301	304
Impeller	Stainless steel	1.4301	304
Washer	Stainless steel	1.4301	304
Protective cap	Novolen 2360 Kx		
Motor unit complete	Parts in contact with liquid: Stainless steel	1.4401	316
Shaft with rotor	Stainless steel/silumin	1.4305	
Motor cable	Neoprene		
O-rings	NBR rubber		
Spring	Stainless steel	1.4310	
Pump inlet	Stainless steel	1.4301	304
Base	Polycarbonate		
Oil	Shell Ondina 15, non-toxic		

Selection

The below overview is suitable for the selection of the correct size of Unilift AP35B pumps used in stationary applications.

To ensure that the discharge pipe is self-cleaning, the calculation of the pipe lengths is based on:

- the use of steel pipes
- a minimum flow velocity through the vertical discharge pipe (2") of 1 m/s
- a minimum flow velocity through the horizontal discharge pipe (2½") of 0.7 m/s.



TM03 1881 3305

Fig. 31 Overview of maximum lengths of combined vertical and horizontal discharge pipes

The above overview is only intended as a guide. Grundfos is not liable for any faulty installations based on the overview.

The vertical height of the discharge pipe should be measured from the pump stop level.

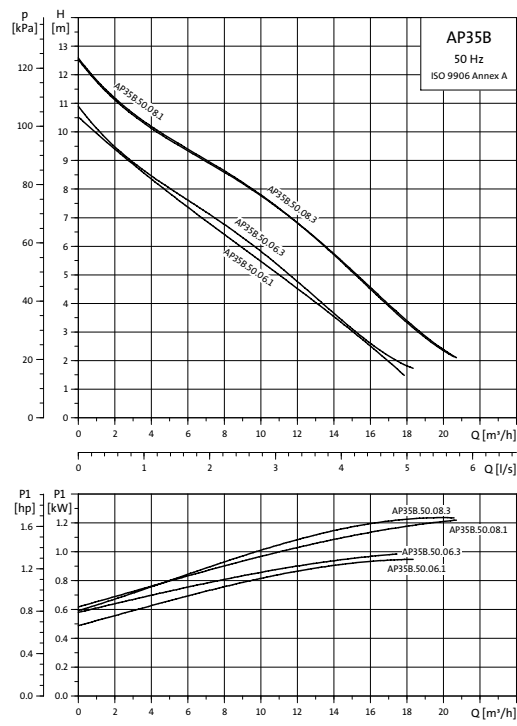


Fig. 32 Performance curves

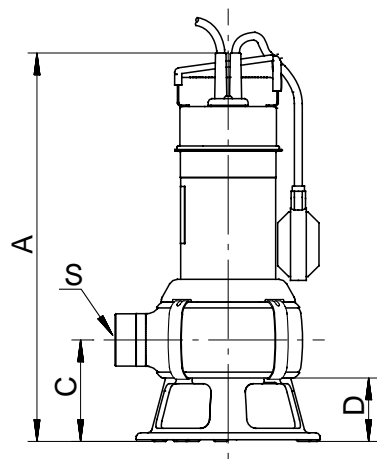


Fig. 33 Dimensions

TM01 9219 1500

Pump type	Voltage [V]	P ₁ [kW]	P ₂ [kW]	I _n [A]	Cos φ	C [μF]	$\frac{I_{start}}{I_n}$	Dimensions [mm]				Weight [kg]	Cable length and plug
								A	C	D	S		
AP35B.50.06.A1.V	1 x 230	0.99	0.6	4.4	0.98	3.1	13.8	443	116	73	R 2	8.5	5 m with Schuko plug
AP35B.50.06.1.V	1 x 230	0.99	0.6	4.4	0.98	3.1	13.8	443	116	73	R 2	8.5	10 m with Schuko plug
AP35B.50.06.3.V	3 x 400	0.95	0.6	1.55	0.89	5.2	8.0	443	116	73	R 2	7.4	5 m without plug
AP35B.50.08.A1.V	1 x 230	1.22	0.8	5.44	0.98	3.4	18.4	468	116	73	R 2	10.0	5 m with Schuko plug
AP35B.50.08.1.V	1 x 230	1.22	0.8	5.44	0.98	3.4	18.4	468	116	73	R 2	10.0	10 m with Schuko plug
AP35B.50.08.3.V	3 x 400	1.23	0.8	1.98	0.89	5.4	10.6	468	116	73	R 2	8.4	5 m without plug

Start/stop level

Pump type	Start [mm]	Stop [mm]
AP35B	633	270

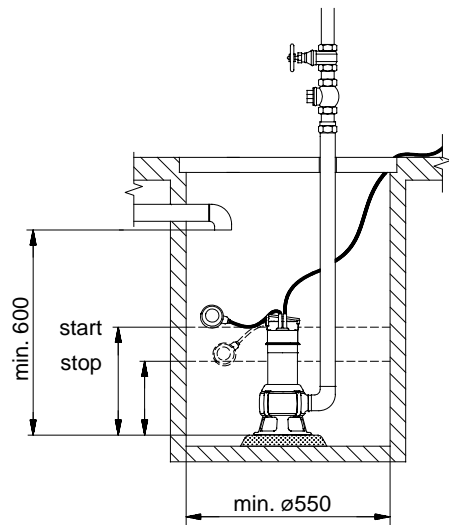
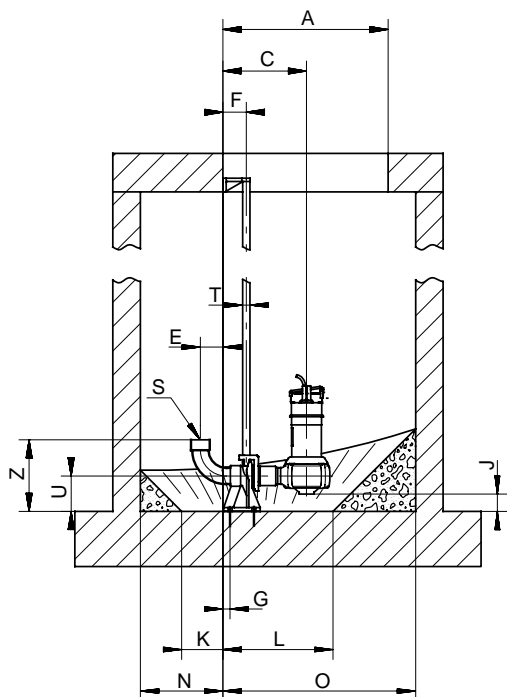


Fig. 34 Minimum installation dimensions

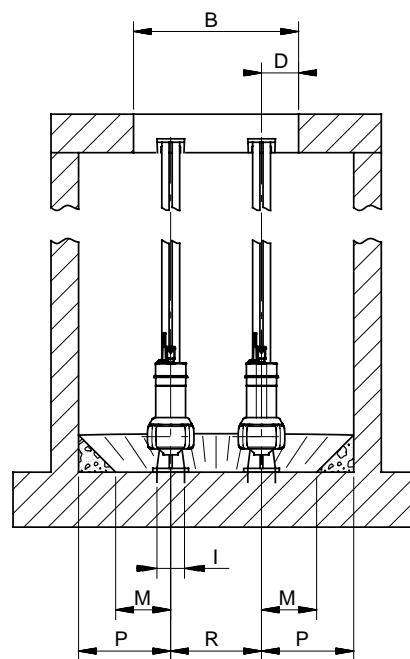
TM03 1914 3305

Unilift AP35B installations



TM01 3593 0299

Fig. 35 Unilift AP35B installation, one pump



TM01 3592 0299

Fig. 36 Unilift AP35B installation, two pumps

One-pump installation on auto-coupling

Pump type	Dimensions [mm]																			
	A	B	C	D	E	F	G	I	J	K	L	M	N	O	P	R	S	T	U	Z
AP35B.50.06	ø600	ø600	304	135	82	85	65	100	76	150	400	200	300	700	500	–	R 2	¾"	130	261
AP35B.50.08	ø600	ø600	304	135	82	85	65	100	76	150	400	200	300	700	500	–	R 2	¾"	130	261

Two-pump installation on auto-coupling

Pump type	Dimensions [mm]																			
	A	B	C	D	E	F	G	I	J	K	L	M	N	O	P	R	S	T	U	Z
AP35B.50.06	600	600	304	135	82	85	26	100	76	150	400	200	300	700	335	330	R 2	¾"	130	261
AP35B.50.08	600	600	304	135	82	85	26	100	76	150	400	200	300	700	35	330	R 2	¾"	130	261

Unilift AP50



TM00 5740 1495

Fig. 37 Unilift AP50

Unilift AP50 is a single-stage submersible pump designed for pumping effluent and sewage. The pump is suitable for:

- groundwater lowering
- pumping in drainage pits
- pumping in surface water pits with inflow from roof gutters, shafts, tunnels, etc.
- emptying of ponds, tanks, etc.
- pumping of fibre-containing wastewater from laundries and industries
- pumping of domestic wastewater from septic tanks and sludge treating systems
- pumping of domestic wastewater with/without discharge from water closets.

Liquid temperature range: 0°C to +55°C.

Approvals

VDE, LGA, GOST, C-tick, UL, CSA and JET.

Automatic operation

The pump is available for automatic as well as manual operation and can be installed in a permanent installation or used as a portable pump. The pump is available:

- with level switch fitted for automatic on/off operation between two liquid levels (single-phase pumps)
- with separate level switch and control box for automatic on/off operation between two liquid levels (three-phase pumps)
- without level switch for manual on/off operation.

Pumps fitted with level switches can also be used for manual on/off operation. In this case, the level switch must be secured in an upward-pointing position.

Pump sleeve and housing

The stainless steel pump sleeve is made in one piece and equipped with an insulated carrying handle.

The suction strainer is clipped on to the pump housing and can easily be removed for maintenance. The strainer prevents the passage of large solids and ensures a slow flow into the pump.

The stainless steel pump housing is fitted with an internal riser pipe ensuring high efficiency. The riser pipe has a number of holes enabling efficient cooling of the motor during operation. The cable entry is of the socket and plug connection type, allowing for quick and easy dismantling.

Discharge port

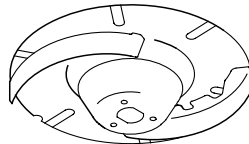
All Unilift AP50 pumps have a threaded vertical discharge port of Rp 2".

Shaft and bearings

The stainless steel shaft rotates in maintenance-free prelubricated ball bearings.

Impeller

The stainless steel impeller is a vortex impeller with L-shaped blades and a clearance of 50 mm in the pump housing. The blades are curved backwards to reduce any harmful effect from solid particles and to minimise power consumption. The impeller has a protective cap to prevent the deposit of long-fibred material.



TM00 5477 0895

Fig. 38 Impeller

Shaft seal

The shaft seal is a combination of a mechanical, bellows shaft seal and a lip seal with 60 ml oil between. Seal faces are made of silicon carbide.

Motor

The motor is a single- or three-phase asynchronous dry-running motor.

Enclosure class: IP 68
Insulation class: F (155°C)
Cable type: H07RN-F.

Single-phase motors have built-in thermal protection.

Materials

Component	Material	DIN W.-Nr.	AISI
Pump housing	Stainless steel	1.4301	304
Riser pipe	Stainless steel	1.4301	304
Impeller	Stainless steel	1.4301	304
Pump sleeve	Stainless steel	1.4401	316
Shaft	Stainless steel	1.4305	
Bearings	Heavy-duty prelubricated ball bearings		
O-rings	NBR rubber		
Screws	Stainless steel	1.4301	304
Cables	Neoprene		
Oil	Shell Ondina 15, non-toxic		

Selection

The below overview is suitable for the selection of the correct size of Unilift AP50 pumps used in stationary applications.

To ensure that the discharge pipe is self-cleaning, the calculation of the pipe lengths is based on:

- the use of steel pipes
- a minimum flow velocity through the vertical discharge pipe (2") of 1 m/s
- a minimum flow velocity through the horizontal discharge pipe (2½") of 0.7 m/s.

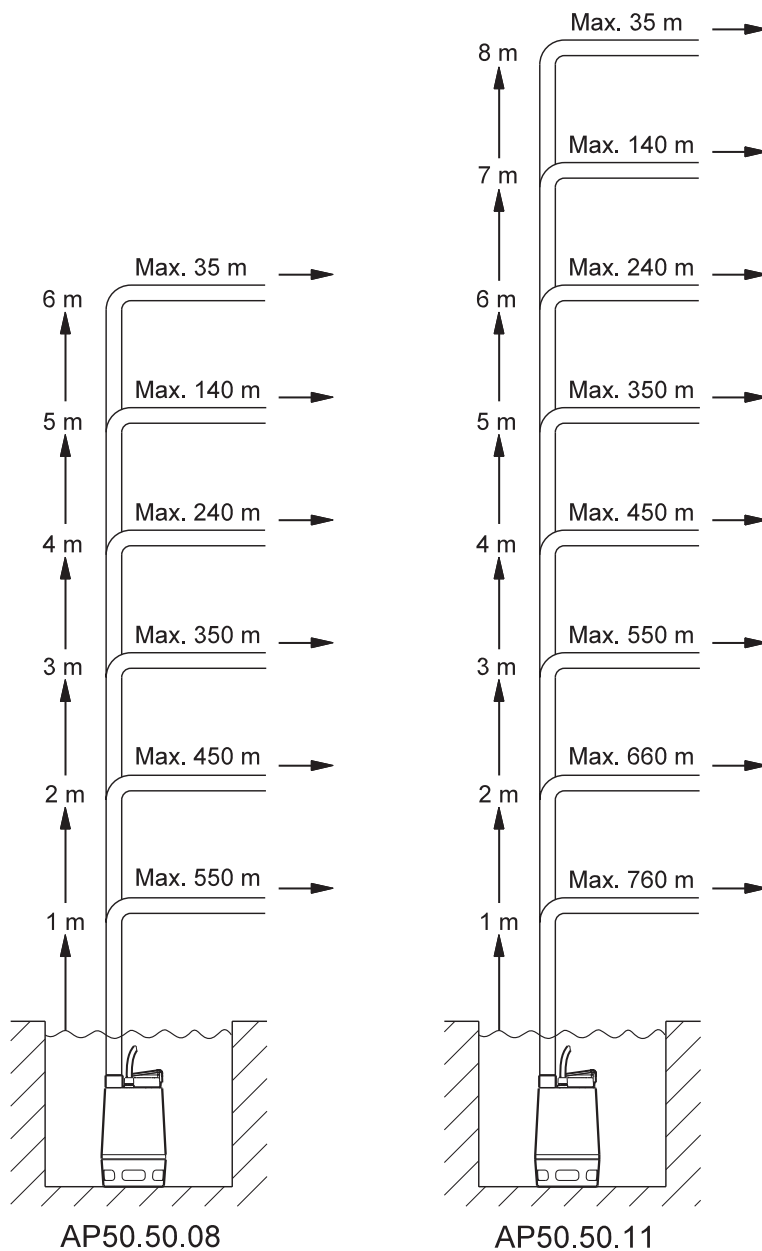


Fig. 39 Overview of maximum lengths of combined vertical and horizontal discharge pipes

The above overview is only intended as a guide. Grundfos is not liable for any faulty installations based on the overview.

Note: If the non-return valve is used, the pressure drop in the valve is 0.2 m head, which is to be subtracted from the vertical pipe lengths.

The vertical height of the discharge pipe should be measured from the pump stop level.

TM03 1880 3305

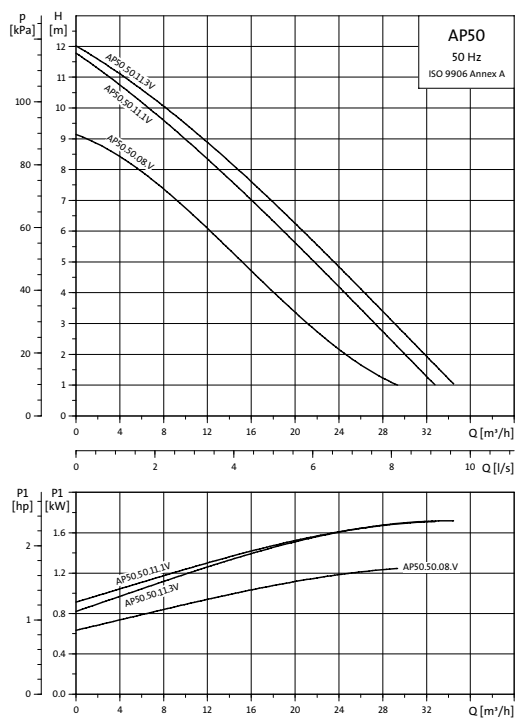


Fig. 40 Performance curves

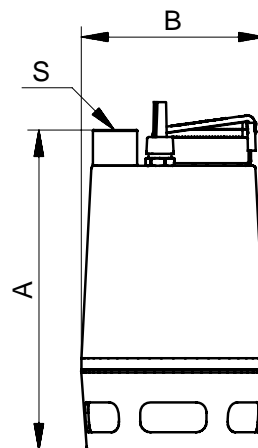


Fig. 41 Dimensions

TM00 5524 0995

Pump type	Voltage [V]	P ₁ [kW]	P ₂ [kW]	I _n [A]	Cos φ	$\frac{I_{start}}{I_n}$	Dimensions [mm]			Weight [kg]
							A	B	S	
AP50.50.08.1.V	1 x 230	1.3	0.8	5.9	0.99	1.9	436	241	Rp 2	15.1
AP50.50.08.A.1.V	1 x 230	1.3	0.8	5.9	0.99	1.9	436	241	Rp 2	15.1
AP50.50.08.3.V	3 x 230	1.2	0.8	3.3	0.85	2.8	436	241	Rp 2	14.2
AP50.50.08.A.3.V	3 x 230	1.2	0.8	3.3	0.85	2.8	436	241	Rp 2	16.5
AP50.50.08.3.V	3 x 400	1.2	0.8	2.0	0.80	3.0	436	241	Rp 2	14.2
AP50.50.08.A.3.V	3 x 400	1.2	0.8	2.0	0.80	3.0	436	241	Rp 2	16.5
AP50.50.11.1.V	1 x 230	1.8	1.1	8.0	0.92	4.0	436	241	Rp 2	15.1
AP50.50.11.A.1.V	1 x 230	1.8	1.1	8.0	0.92	4.0	436	241	Rp 2	15.1
AP50.50.11.3.V	3 x 230	1.8	1.1	6.0	0.85	2.8	436	241	Rp 2	15.6
AP50.50.11.A.3.V	3 x 230	1.8	1.1	6.0	0.85	2.8	436	241	Rp 2	17.9
AP50.50.11.3.V	3 x 400	1.8	1.1	3.0	0.88	4.9	436	241	Rp 2	15.6
AP50.50.11.A.3.V	3 x 400	1.8	1.1	3.0	0.88	4.9	436	241	Rp 2	17.9

Unilift AP50 installations

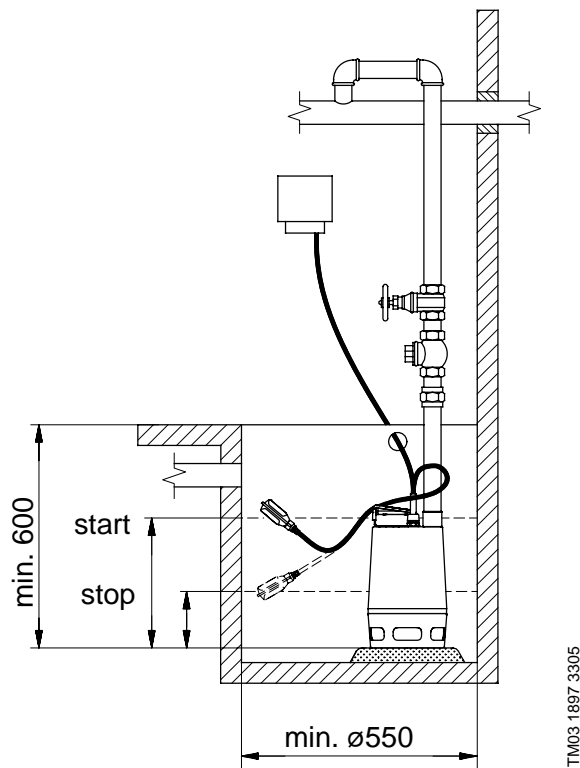


Fig. 42 Unilift AP50 installation, one pump

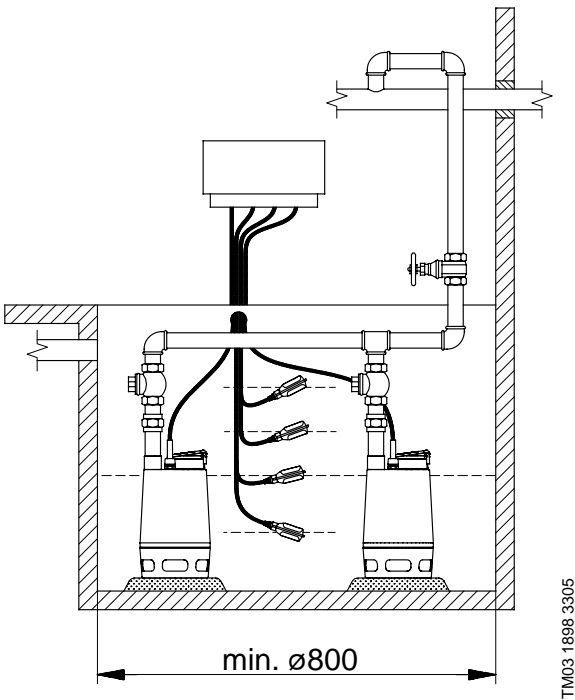


Fig. 43 Unilift AP50 installation, two pumps

Adjustment of cable length for float switch

The difference in level between start and stop can be adjusted by changing the free cable length between the float switch and the pump handle.

- Increasing the free cable length results in fewer starts/stops and a large difference in level.
- Reducing the free cable length results in more starts/stops and a small difference in level.

In order for the float switch to start and stop the pump, the free cable length must be min. 100 mm and max. 350 mm.

Pump type	Cable length min. 100 mm		Cable length max. 350 mm	
	Start [mm]	Stop [mm]	Start [mm]	Stop [mm]
AP50	500	300	550	100

Unilift AP50B



TM01 4188 4998

Fig. 44 Unilift AP50B

Unilift AP50B is a single-stage submersible pump designed for pumping effluent.

The pump is suitable for:

- groundwater lowering
- pumping in drainage pits
- pumping in surface water pits with inflow from roof gutters, shafts, tunnels, etc.
- emptying of ponds, tanks, etc.
- pumping of fibre-containing effluent from laundries and industries
- pumping of domestic effluent from septic tanks and sludge treating systems
- pumping of domestic effluent without discharge from water closets.

Liquid temperature range: 0°C to +40°C.

Automatic operation

The pump is available for automatic as well as manual operation and can be installed in a permanent installation or used as a portable pump. The pump is available:

- with level switch fitted for automatic on/off operation between two liquid levels (single-phase pumps)
- without level switch for manual on/off operation.

Pumps fitted with level switches can also be used for manual on/off operation. In this case, the level switch must be secured in an upward-pointing position.

Pump housing

Pump housing with an outstanding design for submersible wastewater pumps resulting in a high head.

The pump housing is made of a steel tube with a smooth surface and a hydraulically correct shape ensuring free passage of particles.

Base, pump inlet and pump housing are fastened to the motor by means of four springs enabling quick and easy dismantling.

Discharge port

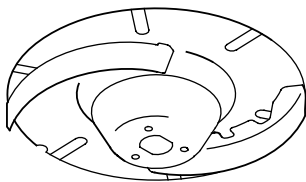
All Unilift AP50B pumps have a threaded horizontal discharge port of R 2".

Shaft and bearings

The stainless steel shaft rotates in maintenance-free prelubricated ball bearings.

Impeller

The stainless steel impeller is a vortex impeller with L-shaped blades and a clearance of 50 mm in the pump housing. The blades are curved backwards to reduce any harmful effect from solid particles and to minimise power consumption. The impeller has a protective cap to prevent the deposit of long-fibred material.



TM00 5477 0895

Fig. 45 Impeller

Shaft seal

The shaft seal is a combination of a mechanical, bellows shaft seal and a lip seal with 80 ml oil between. Seal faces are made of silicon carbide.

Motor

The motor is a single- or three-phase asynchronous dry-running motor.

Enclosure class: IP 68
Insulation class: F (155°C)
Cable type: H07RN-F.

Single-phase motors have built-in thermal protection.

Materials

Component	Materials	DIN W.-Nr.	AISI
Pump housing	Stainless steel	1.4301	304
Impeller	Stainless steel	1.4301	304
Washer	Stainless steel	1.4301	304
Protective cap	Novolen 2360 Kx		
Motor unit complete	Parts in contact with liquid: Stainless steel	1.4401	316
Shaft with rotor	Stainless steel/silumin	1.4305	
Motor cable	Neoprene		
O-rings	NBR rubber		
Spring	Stainless steel	1.4310	
Pump inlet	Stainless steel	1.4301	304
Base	Polycarbonate		
Oil	Shell Ondina 15, non-toxic		

Selection

The below overview is suitable for the selection of the correct size of Unilift AP50B pumps used in stationary applications.

To ensure that the discharge pipe is self-cleaning, the calculation of the pipe lengths is based on:

- the use of steel pipes
- a minimum flow velocity through the vertical discharge pipe (2") of 1 m/s
- a minimum flow velocity through the horizontal discharge pipe (2½") of 0.7 m/s.

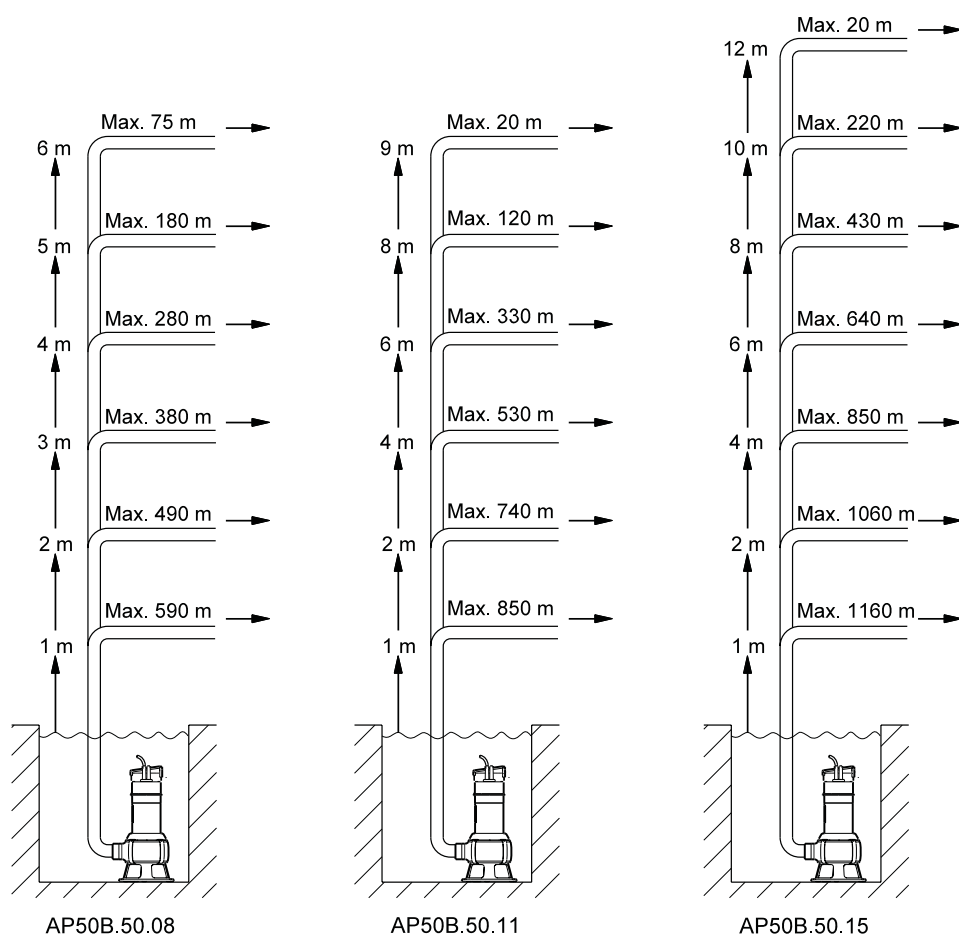


Fig. 46 Overview of maximum lengths of combined vertical and horizontal discharge pipes

The above overview is only intended as a guide. Grundfos is not liable for any faulty installations based on the overview.

The vertical height of the discharge pipe should be measured from the pump stop level.

TM03 1882 3305

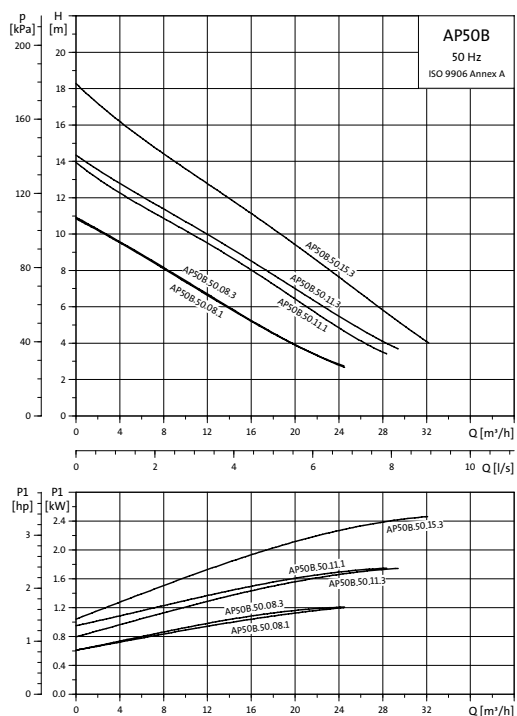


Fig. 47 Performance curves

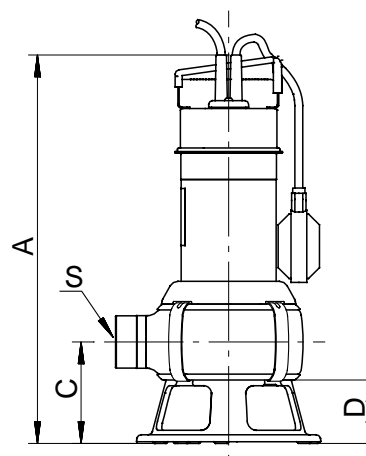


Fig. 48 Dimensions

Pump type	Voltage [V]	P ₁ [kW]	P ₂ [kW]	I _n [A]	Cos φ	C [μF]	I _{start} /I _n	Dimensions [mm]				Weight [kg]	Cable length and plug
								A	C	D	S		
AP50B.50.08.A1.V	1 x 230	1.2	0.8	5.37	0.97	16	18.4	468	116	73	R 2	10.1	5 m with Schuko plug
AP50B.50.08.1.V	1 x 230	1.2	0.8	5.37	0.97	16	18.4	468	116	73	R 2	10.1	10 m with Schuko plug
AP50B.50.08.3.V	3 x 400	1.21	0.8	1.95	0.89		10.6	468	116	73	R 2	8.4	5 m without plug
AP50B.50.11.A1.V	1 x 230	1.75	1.1	8.00	0.95	16	23.8	468	116	73	R 2	10.2	5 m with Schuko plug
AP50B.50.11.1.V	1 x 230	1.75	1.1	8.00	0.95	16	23.8	468	116	73	R 2	10.2	10 m with Schuko plug
AP50B.50.11.3.V	3 x 400	1.75	1.1	2.81	0.90		16.0	468	116	73	R 2	9.7	5 m without plug
AP50B.50.15.3.V	3 x 400	2.15	1.5	3.00	0.88		22.4	468	116	73	R 2	10.0	5 m without plug

Start/stop level

Pump type	Start [mm]	Stop [mm]
AP50B	633	270

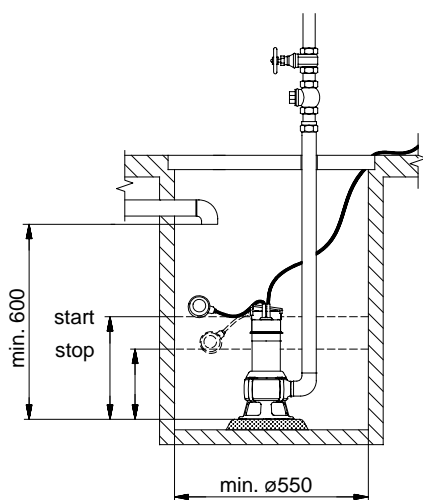
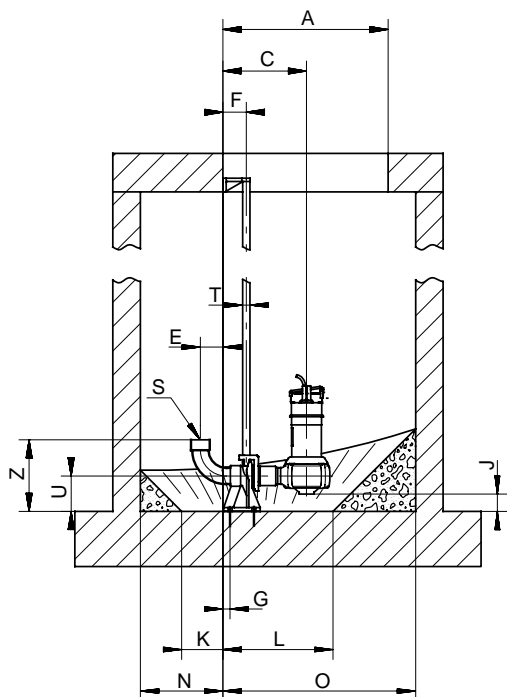


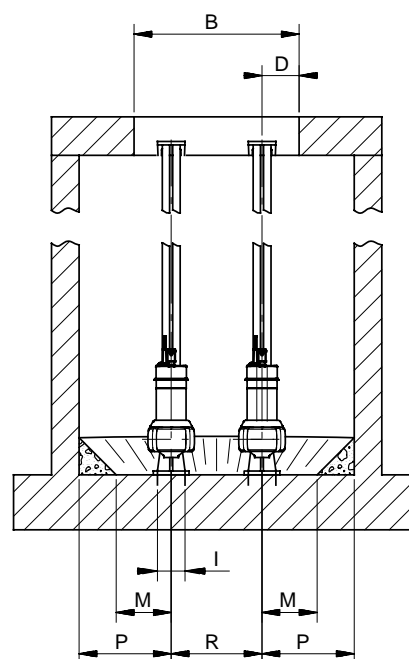
Fig. 49 Minimum installation dimensions

Unilift AP50B installations



TM01 3593 0299

Fig. 50 Unilift AP50B installation, one pump



TM01 3592 0299

Fig. 51 Unilift AP50B installation, two pumps

One-pump installation on auto-coupling

Pump type	Dimensions [mm]																			
	A	B	C	D	E	F	G	I	J	K	L	M	N	O	P	R	S	T	U	Z
AP50B.50.08	ø600	ø600	304	135	82	85	65	100	76	150	400	200	300	700	500	–	R 2	¾"	130	261
AP50B.50.11	ø600	ø600	304	135	82	85	65	100	76	150	400	200	300	700	500	–	R 2	¾"	130	261
AP50B.50.15	ø600	ø600	304	135	82	85	65	100	76	150	400	200	300	700	500	–	R 2	¾"	130	261

Two-pump installation on auto-coupling

Pump type	Dimensions [mm]																			
	A	B	C	D	E	F	G	I	J	K	L	M	N	O	P	R	S	T	U	Z
AP50B.50.08	600	600	304	135	82	85	26	100	76	150	400	200	300	700	335	330	R 2	¾"	130	261
AP50B.50.11	600	600	304	135	82	85	26	100	76	150	400	200	300	700	335	330	R 2	¾"	130	261
AP50B.50.15	600	600	304	135	82	85	26	100	76	150	400	200	300	700	335	330	R 2	¾"	130	261

Control box

Variants

The Unilift AP pump range comprises versions with or without control box and float switch, designed for single-phase or three-phase power supply.

All types are designed for voltage tolerances of $\pm 10\%$.

Pumps with control box and float switch

Some Unilift AP pumps are available with float switch for automatic start/stop of the pump. The float switch cable should be fastened to the pump handle retainer.

The difference in level between start and stop can be adjusted by changing the free cable length between the float switch and the pump handle.

The difference in level between start and stop may be adjusted by adjusting the free length of cable between the float switch and the handle.

Large difference in level: Long cable.

Small difference in level: Short cable.

The float switch is connected direct to the control box by a 10-metre cable.

The mains cable between the pump and the control box is 10 metres. The mains cable of the control box is a 0.8-metre free cable end.

The control box includes a motor starter. The pumps require no further motor protection.

An alarm signal can be given in case of a too high level by means of a separate float switch connected to an alarm. High-level alarm switch and alarm are available as accessories.

For further details, see "Product range", from page 44.

Pumps with control box without float switch for manual on/off operation

The mains cable between the pump and the control box is 10 metres. The mains cable of the control box is a 0.8 metres long free cable end.

The control box includes a motor starter and an operating capacitor but no relays for float switch.

Pumps without control box

Pumps without control box must be connected to a separate motor starter, available as an accessory.

Single-phase pumps must also be connected to a capacitor.

Level controller

A level controller and switches are available as accessories for the control, monitoring and protection of three-phase 50 Hz Unilift AP pumps. The LC level controller is designed for one-pump operation and the LCD for two-pump operation.

The level controller incorporates motor starter, contactors and light-emitting diodes (LC/LCD) for indication of operating conditions.

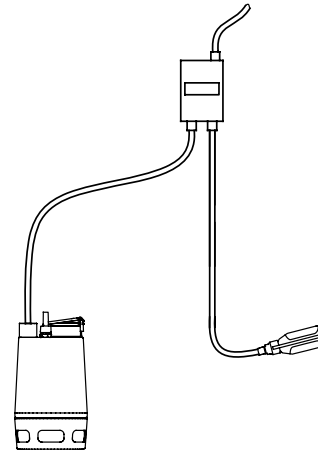


Fig. 52 Unilift AP35/50 pump with control box and float switch

TM03 1899 3305

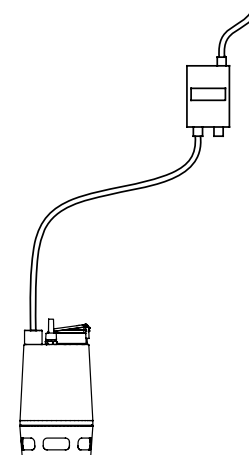


Fig. 53 Unilift AP35/50 pump with control box without float switch for manual on/off operation

TM03 1900 3305

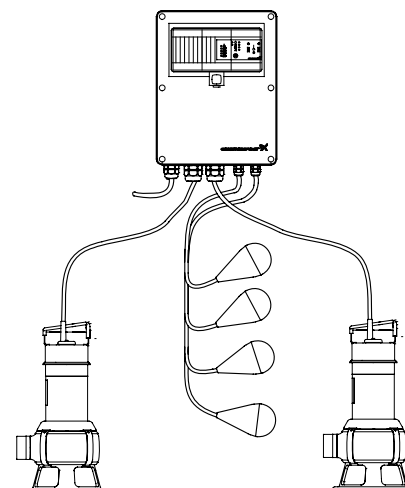


Fig. 54 Unilift AP35B/AP50B pumps with LCD level controller

TM03 1901

LC 107, LCD 107

The LC 107 and LCD 107 pump controllers are designed for level control, monitoring and protection of Grundfos Unilift AP pumping systems up to 23 A/11 kW (P₁) per pump starting direct-on-line.

- LC 107 is a one-pump controller
- LCD 107 is a two-pump controller.

LC 107 and LCD 107 are supplied as complete controllers incorporating motor protection relay, bell-shaped level pickups, pneumatic tubes and control unit.

Control is based on pneumatic signals which the LC 107 and LCD 107 receive via pneumatic tubes from two or three level pickups positioned in a pump pit.

The LC 107 and LCD 107 enable:

- control of one or two pumps based on signals from bell-shaped level pickups
- automatic pump changeover (even distribution of operating hours on both pumps)
- selection of automatic test run every 24 hours during long periods of inactivity to prevent the shaft from seizing up
- protection against water hammer as quick restart/simultaneous start is blocked and delayed
- protection against water hammer as quick restart/simultaneous start is blocked and delayed
- battery back-up in case of mains supply failure (accessory!)
- starting delay within the range from 0 to 255 seconds (random) after returning from battery operation to mains operation (resulting in an even mains load when several pumping stations are started up at the same time)
- selection of automatic alarm resetting
- selection of automatic restarting
- setting of stop delays matching the actual operating conditions
- indication of liquid level
- alarm indication of:
 - too high liquid level, which triggers a high-level alarm
 - overload (via motor protection relay)
 - overtemperature (via PTC resistance/thermal switch in motor)
 - wrong phase sequence
 - mains supply failure
 - failing level pickup.

As standard, the LC 107 and LCD 107 have two alarm signal outputs:

- common alarm
- high-level alarm.

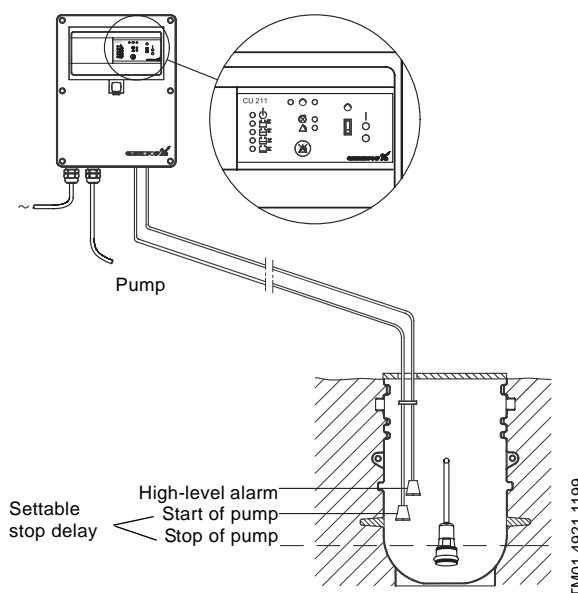


Fig. 55 LC 107

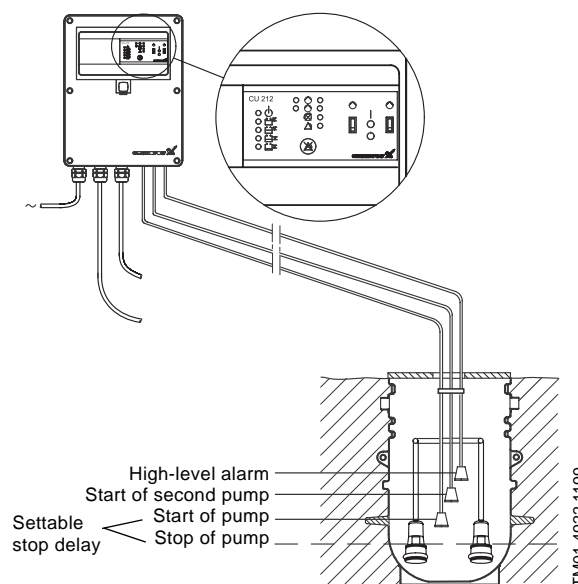


Fig. 56 LCD 107

Technical data

Voltage tolerances

–15%/+10% of nominal voltage.

Mains frequency

50/60 Hz.

Ambient temperature

- During operation: –30°C to +50°C (must not be exposed to direct sunlight)
- In storage: –30°C to +60°C.

Enclosure class

IP 55.

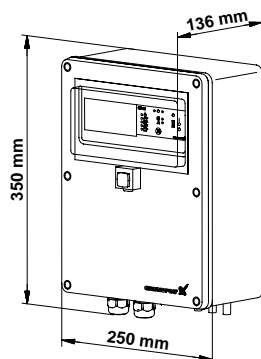
Pneumatic tubes

- Maximum 20 m per tube (standard: pneumatic tube of 10 metres).
- Diameter: 10 mm.
- Material: PA 11.

Outputs for alarm devices

Max. 400 VAC / max. 2 A / min. 10 mA / AC 1.

Dimensions



TM01 4946 1199

Fig. 57 Dimensions, LC 107/LCD 107

LC 108, LCD 108

The LC 108 and LCD 108 pump controllers are designed for level control, monitoring and protection of Grundfos Unilift AP pumps in wastewater, water supply and drainage systems.

Up to 23 A/11 kW (P_1) starting direct-on-line (DOL).
Up to 72 A/30 kW (P_1) starting star-delta (Y/D).

- LC 108 is a one-pump controller
- LCD 108 is a two-pump controller.

The LC 108 and LCD 108 are supplied as complete controllers incorporating motor protection relay and control unit.

The LC 108 and LCD 108 enable:

- control of one or two pumps based on signals from float switches, electrodes or flow switches
- selection of automatic test run (every 24 hours) during long periods of inactivity to prevent the shaft from seizing up
- protection against water hammer as quick restart is blocked and delayed (5 seconds)
- selection of automatic alarm resetting
- selection of automatic restarting (after overtemperature)
- setting of stop delays matching the actual operating conditions
- indication of liquid level
- alarm indication of:
 - wrong phase sequence
 - inadmissibly high liquid level
 - overload (via motor protection relay)
 - overtemperature (via PTC resistance or thermal switch in motor)
 - defective float switch, electrode or flow switch
 - dry running
 - mains supply failure (by installing a battery back-up, available as an accessory).
- automatic pump changeover (even distribution of operating hours on both pumps) (LCD 108 only).

As standard, the LC 108 and LCD 108 controllers incorporate a buzzer for alarm indication.

Furthermore, the controller has one alarm output for common alarm.

Applications

The LC 108 and LCD 108 can be connected and set to operation/control in seven different ways:

- systems with two float switches
- systems with three float switches
- systems with four float switches
- systems with two electrodes
- systems with three electrodes
- systems for filling applications
- systems for drainage applications.

Technical data

Voltage tolerances

–15%/+10% of nominal voltage.

Mains frequency

50/60 Hz.

Ambient temperature

- During operation: –30°C to +50°C (must not be exposed to direct sunlight).
- In stock: –30°C to +60°C.

Enclosure class

IP 55.

Outputs for alarm devices

Max. 400 VAC / max. 2 A / min. 10 mA / AC 1.

Supply system earthing

For TN systems and TT systems.

Rated insulation voltage, U_i

4 kV.

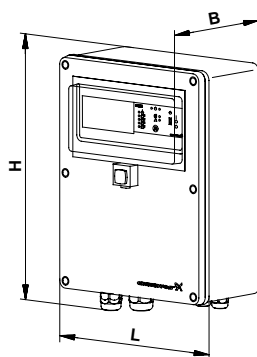
Rated impulse withstand voltage, U_{imp}

4 kV.

EMC (electromagnetic compatibility)

According to EN 50 081-1 and EN 50 082-2.

Dimensions



TM01 9007 0900

Fig. 58 Dimensions

Type	Dimensions [mm]		
	H	L	B
LC 108, direct-on-line	350	250	136
LCD 108, direct-on-line	350	250	136
LC 108, star-delta	590	380	200

Level switches

Unilift AP pumps in combination with LC 108 or LCD 108 are available with level switches for automatic level control. Level switches supplied by Grundfos are of the non-mercury type.

LC 108 can be fitted with up to three level switches:

- Min.: Stops the pump.
- Max.: Starts the pump.
- Alarm: Alarm (optional): high water level or pump fault.

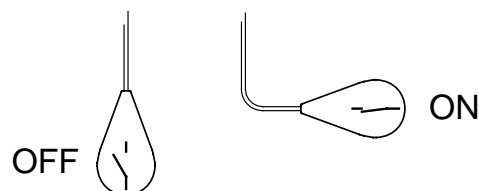
LCD 108 can be fitted with up to four level switches:

- Min.: Stops both pumps.
- Max. 1: Starts one pump.
- Max. 2: Starts the other pump.
- Alarm: Alarm (optional): high water level or pump fault.

The level switches are to be installed in the pit floating on the pumped liquid.

The position of the level switches decides when the LC 108 or LCD 108 starts and stops Unilift AP pumps:

- When the level switch points upwards, the level switch contact will be closed and the pump will start.
- When the level switch points downwards, the level switch contact will be opened and the pump will stop.



TM00 6678 4695

Fig. 59 Level switch positions

LC 110, LCD 110

The LC 110 and LCD 110 pump controllers are designed for level control, monitoring and protection of Grundfos Unilift AP pumps in wastewater, water supply and drainage systems up to 23 A/11 kW (P_1) starting direct-on-line (DOL).

The LC 110 and LCD 110 are supplied as complete controllers incorporating motor protection relay and control unit.

The LC 110 and LCD 110 enable:

- control of one or two pumps based on signals from electrodes
- selection of automatic test run (every 24 hours) during long periods of inactivity to prevent the shaft from seizing up
- starting delay within the range from 0 to 255 seconds (random) after returning from battery operation to mains operation (resulting in an even mains load when several pumping stations are started up at the same time)
- protection against water hammer as quick restart is blocked and delayed (5 seconds)
- selection of automatic alarm resetting
- selection of automatic restarting (after overtemperature)
- setting of stop delays matching the actual operating conditions
- indication of liquid level
- alarm indication of:
 - wrong phase sequence
 - high liquid level
 - overload (via motor protection relay)
 - overtemperature (via thermal switch in motor)
 - dry running
 - mains supply failure (when battery back-up is fitted as an accessory).

As standard, the LC 110 and LCD 110 controllers incorporate a buzzer for indication of alarm.

Furthermore, the controller has one alarm output for common alarm.

Applications

The LC 110 and LCD 110 can be connected and set to operation/control in six different ways:

- systems with three electrodes (LC 110):
Electrode for reference, start/stop and high-level alarm
- systems with four electrodes (LC 110):
Electrode for reference, stop, start and high-level alarm
- systems with five electrodes (LC 110):
Electrode for reference, dry-running alarm, stop, start and high-level alarm

- systems with four electrodes (LCD 110):
Electrode for reference, start of pump 1/common stop, start of pump 2 and high-level alarm
- systems with five electrodes, parallel operation (LCD 110):
Electrode for reference, common stop, start of pump 1, start of pump 2 and high-level alarm
- systems with five electrodes, 100% standby (LCD 110):
Electrode for reference, common stop, start of pump 1, high-level alarm and start of pump 2
- systems with five electrodes, full control (LCD 110):
Electrode for reference, stop of pump 1, stop of pump 2, start of pump 1 and start of pump 2.

Technical data

Voltage tolerances

–15%/+10% of nominal voltage.

Mains frequency

50/60 Hz.

Ambient temperature

- During operation: –30°C to +50°C (must not be exposed to direct sunlight).
- In stock: –30°C to +60°C.

Enclosure class

IP 55.

Outputs for alarm devices

Max. 400 VAC / max. 2 A / min. 10 mA / AC 1.

Supply system earthing

For TN systems and TT systems.

Rated insulation voltage, U_i

4 kV.

Rated impulse withstand voltage, U_{imp}

4 kV.

EMC (electromagnetic compatibility)

According to EN 50 081-1 and EN 50 082-2.

Dimensions

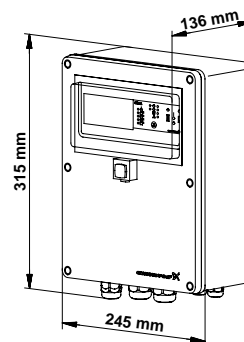


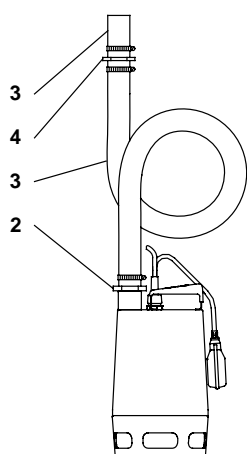
Fig. 60 Dimensions, LC 110/LCD 110

TM01 8152 5099

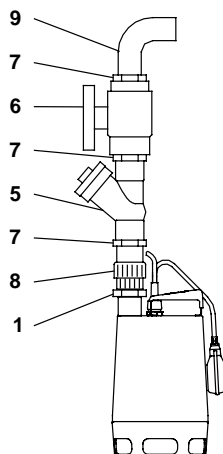
Accessories for Unilift CC, KP, AP pumps

Pos.	Accessories			Pump type							Product number	
				CC	KP	AP 12.40	AP 12.50	AP 35	AP 35B	AP 50		AP 50B
1	Bushing for pipe connection	(PVC)	Rp 1½/2			●		●				96023831
			Rp 2/2½						●			96023832
2	Hose nipple	(PVC)	Rp 1½/1½			●		●				96003997
			Rp 1½/2			●		●				96023834
			Rp 2/2				●		●	●		96023835
			Rp 2/2½			●			●	●		96023836
												96023837
3	10 m rubber hose incl. clamps	(PVC)	1½"			●		●				96023838
			2"			●	●	●	●	●	●	96023839
			2½"				●		●	●		96023840
4	Connecting piece for rubber hoses(PVC)		Rp 1½			●		●				96023841
			Rp 2			●	●	●	●	●	●	96023842
			Rp 2½				●		●	●		96023843
5	Non-return valve, ball type	(PVC)	Rp 1½			●		●				96023844
			Rp 2			●	●	●	●	●	●	96002003
			Rp 2½ ★				●		●	●		96023846
6	Isolating valve	(PVC)	Rp 1½			●		●				96023847
			Rp 2			●	●	●	●	●	●	96023848
			Rp 2½				●		●	●		96023849
7	Hexagon nipple	(PVC)	Rp 1½			●		●				96023850
			Rp 2			●	●	●	●	●	●	96023851
			Rp 2½				●		●	●		96023852
8	Union	(PVC)	Rp 1½			●		●				96023853
			Rp 2			●	●	●	●	●	●	96023854
			Rp 2½				●		●	●		96023855
9	90° pipe bend	(PVC)	Rp 1½			●		●				96023856
			Rp 2			●	●	●	●	●	●	96023857
			Rp 2½				●		●	●		96023858
10	Non-return valve for location in the pump discharge (stainless steel)		Rp 1¼	●	●							00015211
			Rp 1½			●		●				96003855
	Auto-coupling		Rp 2/Rp 2						●		●	96429519
	Hose couplings	(polyamide)	G 1¼ x ø25			●						00ID3588
	Screwed couplings		G 1¼ x ø32			●					00ID3589	
			G 1¼ x ø40			●					00ID3590	
★ Cast iron												

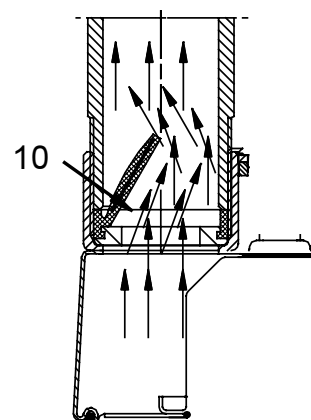
★ Cast iron



TM00 5924 1895








TM00 5925 1895




TM01 8708 0700

Fig. 61 Accessories for Unilift CC, KP, AP pumps

Level controllers and accessories

	Description	Operating current per pump [A]	Mains switch required [A]	Grundfos Product no.*	Grundfos product no. including hour counter*	Grundfos product no. including start counter*	Grundfos product no. including combined hour and start counter*
	LC 107 level controller for one pump 1 x 230 V, direct-on-line starting	1 - 2.9	25	96002464			
		1.6 - 5.0	25	96002465			
		3.7 - 12.0	25	96002466			
	LC 107 level controller for one pump 3 x 400 V, direct-on-line starting	1 - 2.9	25	96002467			
		1.6 - 5.0	25	96002468			
		3.7 - 12.0	25	96002469			
	LCD 107 level controller for two pumps 1 x 230 V, direct-on-line starting	12.0 - 23.0	40	96002470			
		1 - 2.9	25	96002471			
		1.6 - 5.0	25	96002472			
	LCD 107 level controller for two pumps 3 x 400 V, direct-on-line starting	3.7 - 12.0	25	96002473			
		1 - 2.9	25	96002474			
		1.6 - 5.0	25	96002475			
	LC 108 level controller for one pump 1 x 230 V, direct-on-line starting	3.7 - 12.0	25	96002476			
		12.0 - 23.0	40	96002477			
		1 - 2.9	25	96433956	96433957	96433958	96433959
	LC 108 level controller for one pump 3 x 230 V, direct-on-line starting	1.6 - 5.0	25	96433961	96433960	96433962	96433963
		3.7 - 12.0	25	96433964	96433965	96433966	96433967
		12.0 - 23.0	40	96433971	96433972	96433973	96433974
	LC 108 level controller for one pump 3 x 230 V, direct-on-line starting	1 - 2.9	25	96433975	96433976	96433977	96433978
		1.6 - 5.0	25	96433979	96433980	96433981	96433982
		3.7 - 12.0	25	96433983	96433984	96433985	96433986
	LC 108 level controller for one pump 3 x 400 V, direct-on-line starting	12.0 - 23.0	40	96433987	96433988	96433989	96433990
		1 - 2.9	25	96433991	96433992	96433993	96433994
		1.6 - 5.0	25	96433995	96433996	96433997	96433998
	LC 108 level controller for one pump 3 x 400 V, star-delta starting	3.7 - 12.0	25	96433999	96434000	96434001	96434002
		12.0 - 23.0	40	96434003	96434004	96434005	96434006
		6.4 - 20.0	25	96437928			
	LC 108 level controller for one pump 3 x 400 V, star-delta starting	20.8 - 30.0	40	96437950			
		20.8 - 59.0	80	96437970			
		24.2 - 72.0		96437990			
	LCD 108 level controller for two pumps 3 x 230 V, direct-on-line starting	1 - 2.9	25	96434023	96434024	96434025	96434026
		1.6 - 5.0	25	96434027	96434028	96434029	96434030
		3.7 - 12.0	25	96434031	96434032	96434033	96434034
	LCD 108 level controller for two pumps x 400 V, direct-on-line starting	12.0 - 23.0	40	96434035	96434036	96434037	96434038
		1 - 2.9	25	96434039	96434040	96434041	96434042
		1.6 - 5.0	25	96434043	96434044	96434045	96434046
	LCD 108 level controller for two pumps 3 x 400 V, star-delta starting	3.7 - 12.0	40	96434047	96434048	96434049	96434050
		12.0 - 23.0	60	96434051	96434052	96434053	96434054
		6.4 - 20.0	25	96438032			
	LCD 108 level controller for two pumps 3 x 400 V, star-delta starting	20.8 - 30.0	40	96438052			
		20.8 - 59.0	80	96438072			
		24.2 - 72.0		96438092			
	LC 110 level controller for one pump 1 x 230 V, direct-on-line starting	1 - 2.9	25	96484081			
		1.6 - 5.0	25	96484082			
		3.7 - 12.0	25	96484083			
	LC 110 level controller for one pump 3 x 400 V, direct-on-line starting	12.0 - 23.0	40	96484084			
		1 - 2.9	25	96484085			
		1.6 - 5.0	25	96484086			
	LC 110 level controller for one pump 3 x 400 V, direct-on-line starting	3.7 - 12.0	25	96484087			
		12.0 - 23.0	40	96484088			

Description		Operating current per pump [A]	Mains switch required [A]	Grundfos Product no.★	Grundfos product no. including hour counter★	Grundfos product no. including start counter★	Grundfos product no. including combined hour and start counter★
 TM03 2090 3705	LCD 110 level controller for two pumps 1 x 230 V, direct-on-line starting	1 - 2.9	25	96484089			
		1.6 - 5.0	25	96484090			
		3.7 - 12.0	25	96484091			
		12.0 - 23.0	40	96484092			
	LCD 110 level controller for two pumps 3 x 400 V, direct-on-line starting	1 - 2.9	25	96484093			
		1.6 - 5.0	25	96484094			
		3.7 - 12.0	25	96484095			
		12.0 - 23.0	40	96484096			

★Including instruction and operating instructions in English. Other languages are available on request.

Accessories for controllers

Description	Grundfos product no.
Battery back-up	96002520
Flashing beacon for external alarm indication	62500020
Alarm horn for external alarm indication (outdoor installation)	62500021
Alarm horn for external alarm indication (indoor installation)	62500022
Hour counter [230 V]	96002514
Hour counter [400 V]	96002515
Start counter [230 V]	96002516
Start counter [400 V]	96002517
Combined hour and start counter [230 V]	96002518
Combined hour and start counter [400 V]	96002519
25 [A] external mains switch for supply cable	96002511
40 [A] external mains switch for supply cable	96002512
80 [A] external mains switch for supply cable	96002513
Bracket for electrodes	91713196
Three electrodes with 10-m cable	96076489
Four electrodes with 10-m cable	91713437

Unilift CC

1 x 220 - 240 V

Pump type	Product number	Plug type			Level switch		Cable type		Net weight [kg]
		Schuko	Australia	Without plug	Without float switch	With float switch	H05RN-F 3G0.75	H07RN-F 3G1	
Unilift CC 5	96280965	•			•		•		4.35
	96280966	•				•	•		
	96280971		•		•		•		
	96280972		•			•	•		
	96280977			•	•		•		
	96280978			•		•	•		
Unilift CC 7	96280967	•			•			•	4.6
	96280968	•				•		•	
	96280973		•		•			•	
	96280974		•			•		•	
	96280979			•	•			•	
	96280980			•		•		•	
Unilift CC 9	96280969	•			•			•	6.5
	96280970	•				•		•	
	96280975		•		•			•	
	96280976		•			•		•	
	96280981			•	•			•	
	96280982			•		•		•	

Unilift KP 150

1 x 220 - 230 V

Pump type	Float switch	Electronic sensor	3 m cable	10 m cable	With plug	Plug type	Product no.
KP 150					●	Schuko	011H1300
KP 150	●		●		●	Schuko	011H1600
KP 150		●	●		●	Schuko	96632895
KP 150	●			●	●	Schuko	011H1800
KP 150		●		●	●	Schuko	96632896
KP 150				●	●	Denmark	011H2300
KP 150	●		●		●	Denmark	011H2600
KP 150		●	●		●	Denmark	011H2400
KP 150	●			●	●	Denmark	011H2800
KP 150		●		●	●	Denmark	96636211
KP 150				●	●	Switzerland	011H3300
KP 150	●		●		●	Switzerland	011H3600
KP 150		●	●		●	Switzerland	011H3400
KP 150	●			●	●	Switzerland	011H3800
KP 150		●		●	●	Switzerland	96636210
KP 150				●	●	Italy	011H5300
KP 150	●		●		●	Italy	011H5600
KP 150		●	●		●	Italy	011H5400
KP 150				●	●	Italy	011H5800
KP 150				●			011H6300
KP 150	●		●				011H6600
KP 150		●	●				011H6400
KP 150	●						011H6800
KP 150		●		●			96632897

1 x 230 - 240 V

Pump type	Float switch	Electronic sensor	5 m cable	With plug	Plug type	Product no.
KP 150			●	●	Australia	011K4100
KP 150	●		●	●	Australia	011K4700
KP 150		●	●	●	Australia	96632898

Unilift KP 250

1 x 220 - 230 V

Pump type	Float switch	Electronic sensor	3 m cable	10 m cable	With plug	Plug type	Product no.
KP 250				•	•	Schuko	012H1300
KP 250	•		•		•	Schuko	012H1600
KP 250		•	•		•	Schuko	96632895
KP 250	•			•	•	Schuko	012H1800
KP 250		•		•	•	Schuko	96632896
KP 250				•	•	Denmark	012H2300
KP 250	•		•		•	Denmark	012H2600
KP 250		•	•		•	Denmark	012H2400
KP 250	•			•	•	Denmark	012H2800
KP 250		•		•	•	Denmark	96636211
KP 250				•	•	Switzerland	012H3300
KP 250	•		•		•	Switzerland	012H3600
KP 250		•	•		•	Switzerland	012H3400
KP 250	•			•	•	Switzerland	012H3800
KP 250		•		•	•	Switzerland	96636210
KP 250				•	•	Italy	012H5300
KP 250	•		•		•	Italy	012H5600
KP 250		•	•		•	Italy	012H5400
KP 250	•			•	•	Italy	012H5800
KP 250				•			012H6300
KP 250	•		•				012H6600
KP 250		•	•				012H6400
KP 250	•			•			012H6800
KP 250		•					012H6900

1 x 230 - 240 V

Pump type	Float switch	Electronic sensor	5 m cable	With plug	Plug type	Product no.
KP 250			•	•	Australia	012K4100
KP 250	•		•	•	Australia	012K4700
KP 250		•	•	•	Australia	96632898

3 x 380 - 415 V

Pump type	5 m cable	10 m cable	Product no.
KP 250	•		012M6100
KP 250		•	012M6300
KP 250	•		012M9100
KP 250		•	012M9300

Unilift KP 350

1 x 220 - 240 V

Pump type	Float switch	Electronic sensor	3 m cable	5 m cable	10 m cable	With plug	Plug type	Product no.
KP 350					•	•	Schuko	013N1300
KP 350	•		•			•	Schuko	013N1600
KP 350		•	•			•	Schuko	96632895
KP 350	•				•	•	Schuko	013N1800
KP 350		•			•	•	Schuko	96632896
KP 350					•	•	Denmark	013N2300
KP 350	•		•			•	Denmark	013N2600
KP 350		•	•			•	Denmark	013N2400
KP 350	•				•	•	Denmark	013N2800
KP 350		•			•	•	Denmark	96636211
KP 350					•	•	Switzerland	013N3300
KP 350		•	•			•	Switzerland	013N3400
KP 350	•		•			•	Switzerland	013N3600
KP 350	•				•	•	Switzerland	013N3800
KP 350		•			•	•	Switzerland	96636210
KP 350					•			013N6300
KP 350	•		•					013N6600
KP 350		•	•					013N6400
KP 350	•				•			013N6800
KP 350					•			013N6900
KP 350				•		•	Australia	013N4100
KP 350	•			•		•	Australia	013N4700
KP 350		•		•		•	Australia	96632898

3 x 380 - 415 V

Pump type	5 m cable	10 m cable	Product no.
KP 350	•		013M6100
KP 350		•	013M6300
KP 350	•		013M9100
KP 350		•	013M9300

Unilift AP12

Pump type	Voltage [V]	Control box with 0.8 m supply cable	Float switch	10 m cable	3 m cable	With plug	Product no.
AP12.40.04.1	1 x 230			•		•	96011016
AP12.40.04.1	1 x 230			•			96011014
AP12.40.04.A.1	1 x 230		•		•	•	96011017
AP12.40.04.A.1	1 x 230		•		•		96011015
AP12.40.04.A.1	1 x 230		•	•		•	96011018
AP12.40.04.3	3 x 400			•			96011024
AP12.40.04.3	3 x 400			•		•	96023925
AP12.40.04.3	3 x 230			•			96011030
AP12.40.04.3	3 x 200			•			96011021
AP12.40.04.A.3	3 x 400	•	•	•			96011025
AP12.40.04.A.3	3 x 400	•	•	•		•	96023871
AP12.40.04.A.3	3 x 230	•	•	•			96011031
AP12.40.04.A.3	3 x 200	•	•	•			96011039
AP12.40.06.1	1 x 230			•		•	96001720
AP12.40.06.1	1 x 230			•			96001732
AP12.40.06.A.1	1 x 230		•		•	•	96001735
AP12.40.06.A.1	1 x 230		•	•		•	96010979
AP12.40.06.A.1	1 x 230		•		•		96001747
AP12.40.06.3	3 x 400			•			96001652
AP12.40.06.3	3 x 230			•			96010628
AP12.40.06.3	3 x 200			•			96010881
AP12.40.06.A.3	3 x 400	•	•	•			96010923
AP12.40.06.A.3	3 x 400	•	•	•		•	96023872
AP12.40.06.A.3	3 x 230	•	•	•			96010957
AP12.40.06.A.3	3 x 200	•	•	•			96010922
AP12.40.08.1	1 x 230			•			96001873
AP12.40.08.1	1 x 230			•		•	96001869
AP12.40.08.A.1	1 x 230		•		•	•	96001798
AP12.40.08.A.1	1 x 230		•	•		•	96010980
AP12.04.08.A.1	1 x 230		•		•		96001867
AP12.40.08.3	3 x 400			•			96001791
AP12.40.08.3	3 x 230			•			96010630
AP12.40.08.3	3 x 200			•			96010882
AP12.40.08.A.3	3 x 400	•	•	•			96010925
AP12.40.08.A.3	3 x 400	•	•	•		•	96023873
AP12.40.08.A.3	3 x 230	•	•	•			96010958
AP12.40.08.A.3	3 x 200	•	•	•			96010924
AP12.50.11.1	1 x 230			•		•	96001958
AP12.50.11.1	1 x 230			•			96001962
AP12.50.11.A.1	1 x 230		•		•	•	96001965
AP12.50.11.A.1	1 x 230		•		•		96001973
AP12.50.11.A.1	1 x 230		•	•		•	96010981
AP12.50.11.3	3 x 400			•			96001975
AP12.50.11.3	3 x 230			•			96010634
AP12.50.11.3	3 x 200			•			96010883
AP12.50.11.A.3	3 x 400	•	•	•			96010927
AP12.50.11.A.3	3 x 400	•	•	•		•	96023874
AP12.50.11.A.3	3 x 230	•	•	•			96010959
AP12.50.11.A.3	3 x 200	•	•	•			96010926

Unilift AP35

Pump type	Voltage [V]	Control box with 0.8 m supply cable	Float switch	10 m cable	3 m cable	With plug	Product no.
AP35.40.06.1.V	1 x 230			●		●	96001796
AP35.40.06.1.V	1 x 230			●			96001808
AP35.40.06.A.1.V	1 x 230		●		●	●	96001777
AP35.40.06.A.1.V	1 x 230		●		●		96001789
AP35.40.06.A.1.V	1 x 230		●	●		●	96010982
AP35.40.06.3.V	3 x 400			●			96000169
AP35.40.06.3.V	3 x 230			●			96010629
AP35.40.06.3.V	3 x 200						96010884
AP35.40.06.A.3.V	3 x 400	●	●	●			96010929
AP35.40.06.A.3.V	3 x 400	●	●	●		●	96023875
AP35.40.06.A.3.V	3 x 230	●	●	●			96010960
AP35.40.06.A.3.V	3 x 200	●	●	●			96010928
AP35.40.08.1.V	1 x 230			●		●	96001672
AP35.40.08.1.V	1 x 230			●			96001894
AP35.40.08.A.1.V	1 x 230		●		●	●	96001897
AP35.40.08.A.1.V	1 x 230		●		●		96001905
AP35.40.08.A.1.V	1 x 230		●	●		●	96010983
AP35.40.08.3.V	3 x 400			●			96001718
AP35.40.08.3.V	3 x 230			●			96010631
AP35.40.08.3.V	3 x 200			●			96010885
AP35.40.08.A.3.V	3 x 400	●	●	●			96010931
AP35.40.08.A.3.V	3 x 400	●	●	●		●	96023876
AP35.40.08.A.3.V	3 x 230	●	●	●			96010961
AP35.40.08.A.3.V	3 x 200	●	●	●			96010930

Unilift AP35B

Pump type	Voltage [V]	Float switch	10 m cable	5 m cable	With plug	Product no.
AP35B.50.06.A1.V	1 x 230	●		●	●	96004562
AP35B.50.06.1.V	1 x 230		●		●	96004563
AP35B.50.06.3.V	3 x 400			●		96004565
AP35B.50.08.A1.V	1 x 230	●		●	●	96004574
AP35B.50.08.1.V	1 x 230		●		●	96004575
AP35B.50.08.3.V	3 x 400			●		96004577

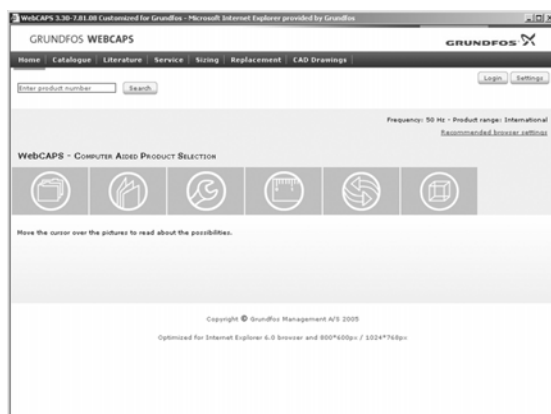
Unilift AP50

Pump type	Voltage [V]	Control box with 0.8 m supply cable	Float switch	10 m cable	3 m cable	With plug	Product no.
AP50.50.08.1.V	1 x 230			●		●	96010595
AP50.50.08.1.V	1 x 230			●			96010599
AP50.50.08.A.1.V	1 x 230		●		●	●	96010584
AP50.50.08.A.1.V	1 x 230		●	●		●	96010984
AP50.50.08.A.1.V	1 x 230		●		●		96010592
AP50.50.08.3.V	3 x 400			●			96010563
AP50.50.08.3.V	3 x 230			●			96010632
AP50.50.08.3.V	3 x 200			●			96010886
AP50.50.08.A.3.V	3 x 400	●	●	●			96010933
AP50.50.08.A.3.V	3 x 400	●	●	●		●	96023877
AP50.50.08.A.3.V	3 x 230	●	●	●			96010962
AP50.50.08.A.3.V	3 x 200	●	●	●			96010932
AP50.50.11.1.V	1 x 230			●		●	96010577
AP50.50.11.1.V	1 x 230			●			96010581
AP50.50.11.A.1.V	1 x 230		●		●	●	96010566
AP50.50.11.A.1.V	1 x 230		●	●		●	96010985
AP50.50.11.A.1.V	1 x 230		●		●		96010574
AP50.50.11.3.V	3 x 400			●			96010562
AP50.50.11.3.V	3 x 230			●			96010633
AP50.50.11.3.V	3 x 200			●			96010887
AP50.50.11.A.3.V	3 x 400	●	●	●			96010935
AP50.50.11.A.3.V	3 x 400	●	●	●		●	96023878
AP50.50.11.A.3.V	3 x 230	●	●	●			96010963
AP50.50.11.A.3.V	3 x 200	●	●	●			96010934

Unilift AP50B

Pump type	Voltage [V]	Float switch	10 m cable	5 m cable	With plug	Product no.
AP50B.50.08.A1.V	1 x 230	●		●	●	96004586
AP50B.50.08.1.V	1 x 230		●		●	96004587
AP50B.50.08.3.V	3 x 400			●		96004589
AP50B.50.11.A1.V	1 x 230	●		●	●	96004598
AP50B.50.11.1.V	1 x 230		●		●	96004599
AP50B.50.11.3.V	3 x 400			●		96004601
AP50B.50.15.3.V	3 x 400			●		96004609

WebCAPS

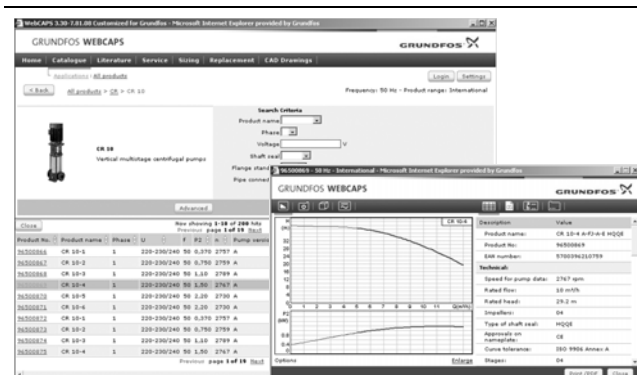


WebCAPS is a **Web**-based **Computer Aided Product Selection** program available on www.grundfos.com.

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:

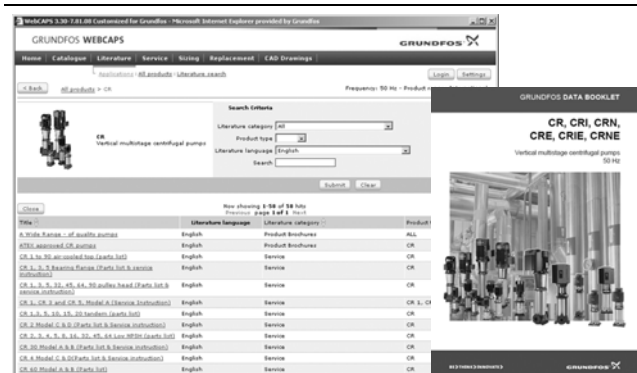
- Catalogue
- Literature
- Service
- Sizing
- Replacement
- CAD drawings.



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

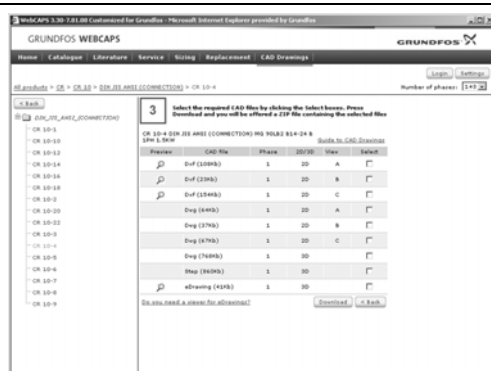
- select the most suitable and efficient pump for your installation
- carry out advanced calculations based on energy consumption, payback periods, load profiles, life cycle costs, etc.
- analyse your selected pump via the built-in life cycle cost tool
- determine the flow velocity in wastewater applications, 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. 62 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.