UNILIFT CC, KP, AP and KPC

Submersible drainage and effluent pumps 50/60 Hz
Lifting stations UNO-/DUOLIFT
LIFTAWAY



GRUNDFOS

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1. Product overview

Pump type		Description
KPC	 GR-1016116	KPC 300 and 600 is a submersible pump designed for pumping clean, non-aggressive water and slightly dirty (grey) wastewater from sanitary appliances such as washbasins, showers, bathtubs, kitchen sinks, floor drains, washing machines, and dishwashers. KPC 24/7 is a submersible pump designed as a fish pond circulator pump.
UNILIFT CC	 GR-1015894	UNILIFT CC is our incredibly robust advanced domestic drainage solution for pumping grey to brackish wastewater from washing machines, baths, sinks, wells, and swimming pools. Special versions can pump wastewater from water softeners with salt content. For a long period of submerged operation, the pump is equipped with a cooling jacket and has a dual-outlet to be mounted to an auto coupling. A self-venting hydraulic allows the pump to start safely after a dry period. The pump is also able to drain flooded basements, for example, down to just 3 mm.
UNILIFT KP	 GR-1032563	UNILIFT KP is made entirely of stainless steel and is available for manual and automatic operation. This is the original drainage pump from Grundfos and the only wet runner on the market, which makes it special because it has a liquid-filled rotor and water-lubricated bearings. Even if the shaft seal leaks, the pump will still operate without causing a short-circuit. The pump is used in stationary installation, but it is also optimal for mobile usage. The cooling jacket allows the emerged pump to operate continuously.
UNILIFT AP	 GR-1032570	UNILIFT AP series is our solution for higher heads on drainage applications with AP12 (12 mm of free passage) or higher flows for effluent applications which allows bypass of larger particles from 35-50 mm with AP35 and 50, mainly used for rainwater, domestic effluents from sludge treating systems, viaducts, and liquids containing fiber from light industries and laundries. It is used in stationary installation and is also optimal for mobile usage. The cooling jacket allows the emerged pump to operate continuously. It is available with a float switch for automatic start/stop or without a float switch to be operated by an external controller or manual.
UNILIFT APB	 GR-1032568	UNILIFT AP Basic Series is our solution with higher heads on wastewater applications with AP35B and a free passage of 35 mm for drainage, greywater-like treated water from grease separators, and/or higher flows for effluent applications which allows bypass of larger particles. The same application can also be covered by the AP50B with 50 mm free passage plus the usage to discharge blackwater from toilets. It is approved according to EN12050-1 for use in lifting stations containing fecal matter. AP Basic is used in stationary installation with auto-coupling systems or base stand and is also optimal for mobile usage. It is available with a float switch for automatic start/stop or without a float switch to be operated by an external controller or manual.
UNILIFT APG	 TM081489	The Grundfos UNILIFT APG pump is a single-stage submersible pump designed for pumping domestic wastewater. The pump is equipped with a grinder system that grinds destructible solids into small pieces to lead them through pipes with a relatively small diameter. UNILIFT APG pumps are ideal for use in sparsely populated areas, where gravity sewage systems are not available. The solution is ideal in, for example, one- or two-family houses, residential building services and areas with large terrain-level differences. The pump is available for two types of installation: • submerged installation on auto-coupling systems. • submerged installation, free-standing. The pump is made of wear-resistant materials, such as cast iron and stainless steel. These materials ensure reliable operation. The surface of the pump is smooth to prevent dirt and impurities from sticking. Four corrosion-resistant screws secure the motor to the pump housing and allow for easy service of the pump.

2. Product introduction

UNILIFT pumps are submersible wastewater pumps used to collect and pump general wastewater types such as:

- drainage
- rainwater collected from surfaces to be guided into ponds, pits, and tanks
- water containing particles and impurities.

They can also be used to discharge greywater or blackwater from sanitary appliances.

Lifting

Some wastewater needs to be lifted when there is height difference between the location where it is collected and the buildings' drainage system or sewer mains.

Water transportation

Wastewater can be collected in one location and transported to another, for example, when wastewater collected inside a building must be transported to sewer mains when a free flow drainage system is not in place.

Backflow protection

When sewer mains are overloaded or blocked, there is a risk of backflow into the basements of connected buildings. Lifting or pumping stations with drainage pumps can be installed to avoid this risk.

Applications

UNILIFT CC, KP, AP, and KPC are submersible drainage pumps suitable for temporary and permanent free-standing installation. Furthermore, the UNILIFT CC, AP35B, AP50B and APG pumps are suitable for installation on an auto-coupling at the bottom of a collecting tank with guide rails going to the top. The pumps are designed for intermittent operation but can operate continuously if they have a cooling jacket or are fully submerged.

pH values:

- KPC: 4-6
- UNILIFT CC: 4-9
- UNILIFT KP: 4-9
- UNILIFT AP, APB, APG: 4-10.

For permanent installation, level controllers are available.

Applications for mobile use

Drainage pumps and small effluent pumps are used for portable applications. These include emergencies, for example, flooding events inside and outside buildings, and to pump water or wastewater out of tanks, ponds, or swimming pools.

Applications for stationary (fixed) installations

Drainage pumps and small effluent pumps are used for fixed, stationary installations:

- on- and under-floor tanks (lifting stations) or simple concrete pump sumps inside the building
- pumping stations and small domestic treatment plants outside the building
- industrial and commercial use.

Installation

UNILIFT KP, AP12, AP35, AP50 and APG pumps are suitable for free-standing installation. UNILIFT AP35B, AP50B and APG can be installed on an auto-coupling guide rail system, which is available as an accessory.

3. Selection guide

This guide helps you select the most suitable UNILIFT product based on wastewater type and application.

Follow the instructions below to determine which product variant is best suited to your needs.

UNILIFT pumps can be used for different types of wastewater:

- drainage
- greywater
- rainwater
- effluent
- blackwater
- domestic sewage

Drainage and greywater

Drainage water includes raw, groundwater with small impurities. The same products chosen for this application are also suitable for collecting domestic greywater from appliances such as showers, bathtubs, floor drains, washbasins, kitchen sinks, washing machines, and dishwashers. It is recommended to use submersible pumps with a free passage of 10-12 mm.

Effluent and rainwater

Effluent is wastewater with higher volumes that require larger free passage than drainage. This includes greywater from commercial processes such as cleaning or washing with fibers or cooking grease from commercial cooking in canteens and treated by grease separators. These products are also suitable for collecting rainwater from surfaces such as parking lots. It is recommended to use pumps with a free passage of 35 or 50 mm.

Domestic sewage and blackwater

Domestic sewage is blackwater collected from households or office buildings. Blackwater is greywater that includes fecal matter and can also include feminine sanitary products. It is recommended to use pumps with a free passage of at least 50 mm, or pumps with an included grinder.

1. Choose the right pump for your wastewater needs.

Wastewater type	Pump	Free passage [mm]	Impeller type
Drainage and greywater	UNILIFT CC	10	Semi-open
	UNILIFT KP	10	Semi-open
	UNILIFT AP12	12	Semi-open
	KPC 300,600 and KPC 24/7	5 / 10	Semi-open
Effluent and rainwater	UNILIFT AP35 and UNILIFT AP35B	35	Vortex
	UNILIFT AP50 and UNILIFT AP50B	50	Vortex
Domestic sewage and blackwater	UNILIFT AP50B	50	Vortex
	UNILIFT APG	-	Vortex

2. Choose the right pump for your application.

Application	UNILIFT pump type								
	CC	KP	AP12	KPC	AP35	AP35B	AP50	AP50B	APG
Non-permanent, light-duty applications (used as a portable pump)	•	•	◦	•	◦	◦	◦	◦	
Non-permanent, heavy-duty applications for installers and light industry (used as a portable pump)			•		•	•	•	•	
Pumping of:									
Water and rainwater in horticulture	•	•	•	•					
Water from rivers and lakes	•	•	•	•	•	•	•	•	
Rainwater, drainage water, and water from flooding	•	•	•	•	•	•	•	•	
Water for filling/emptying containers, ponds, tanks, etc.	•	•	•	•	•	•	•	•	
Effluents from showers, washing machines, and sinks below sewer level	•	•	•	•	•	•	•	•	
Pool water	•	•	•	•	•	•	•	•	
Ditch drainage water	•	•	•	•	•	•	•	•	
Groundwater (lowering applications)	•	•	•	•	•	•	•	•	
Domestic effluents from septic and sludge-treating systems	◦	•	•	◦	•	•	•	•	
Liquids containing fibres from light industry, laundries, etc.					•	•	•	•	
Effluents from viaducts, underpasses, etc.					•	•	•	•	
Effluents from grease separators					•	•	•	•	
Domestic wastewater with toilet discharge from pipes and water closets below sewer level, outdoor pump installations								•	•

• - Recommended

◦ - Alternative

4. Drainage

KPC 300 A, KPC 600 A



GR-1016114

KPC 300 A and 600 A are designed mainly for automatically operated, permanent domestic applications.

Thanks to its compact, easy-to-handle design, it can also be used as a portable pump. The integrated level switch allows permanent installation and guarantees automatic pump operation.

The pump is able to handle particles up to 10 mm.

Applications

The pump is suitable for the following applications:

- emergencies such as lifting water from tanks or rivers, emptying swimming pools, excavations, and underpasses
- gardening
- pumping rainwater and grey wastewater without fibres
- automatically operated, fixed applications in domestic use, draining basements and garages subject to flooding.

Features and benefits of KPC 300 A and KPC 600 A

KPC 300 A and KPC 600 A have many beneficial features:

- KPC is a compact, cost-efficient portable pump
- KPC is a robust and lightweight pump with a mounted handle for easy transport
- built-in thermal motor protection to avoid overheating
- automatic level switch that turns the pump on and off as the water level rises or falls
- cooling jacket
- stainless steel motor.

Approvals and markings

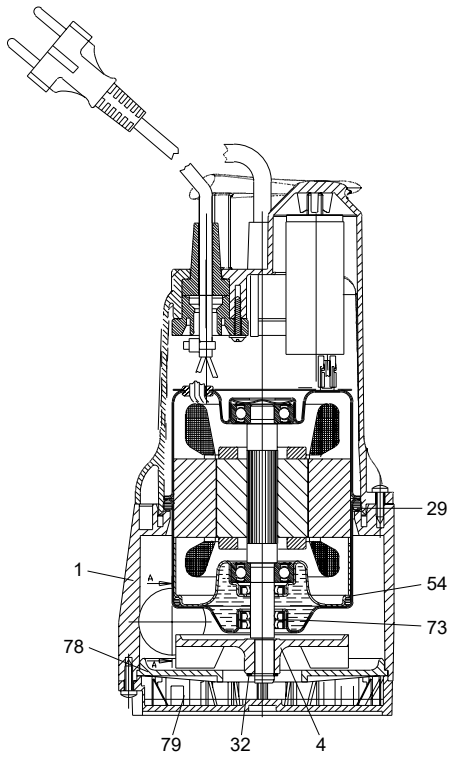
Approvals			
CE	TM075405		98507008_RCM_MARK
	TM075835		

Construction of UNILIFT KPC

Pump construction features

Water-resistant technopolymer pump sleeve, impeller, and suction strainer. Stainless steel motor housing, rotor shaft, and screws.

Materials



TM028468

Pos.	Description	Material
1	Pump sleeve	Noryl GFN 2
4	Impeller	Noryl GFN 2
29	O-ring	NBR
32	Stop ring	Stainless steel 12E
54	Motor:	
	- Motor housing	Stainless steel AISI 304 X5 CrNi 1810
	- Rotor	Stainless steel AISI 304 X5 CrNi 1810
78	Suction disc	Noryl GFN 2
79	Suction strainer	Noryl GFN 2

Pump sleeve

KPC has a water-resistant and lightweight technopolymer pump sleeve. The pump can operate partly submerged at intermittent operation and fully submerged when run continuously as the motor is cooled by the pumped media.

Motor

The motor is a continuous-duty, submersible induction motor. The stator is fitted in an airtight stainless steel motor housing with encased cabling, microswitch, and capacitor. The rotor is mounted on oversized, greased, and sealed-for-life ball bearings selected to guarantee silent running and long life. The pump has built-in thermal current overload protection and a capacitor that is permanently in circuit in the single-phase version.

KPC 300 A:	Supplied as standard with 10 m of H05 RN-F power cable.
KPC 600 A:	Supplied as standard with 10 m of H07 RN-F power cable.

Enclosure class: IP68

Insulation class: F

Standard voltage: 1 x 220-240 V, 50 Hz

Impeller

KPC has a semi-open technopolymer impeller.

Suction strainer

Liquid enters the pump through the holes of the suction strainer. The holes of the strainer prevent the passage of solids larger than 10 mm.

Pumped liquids

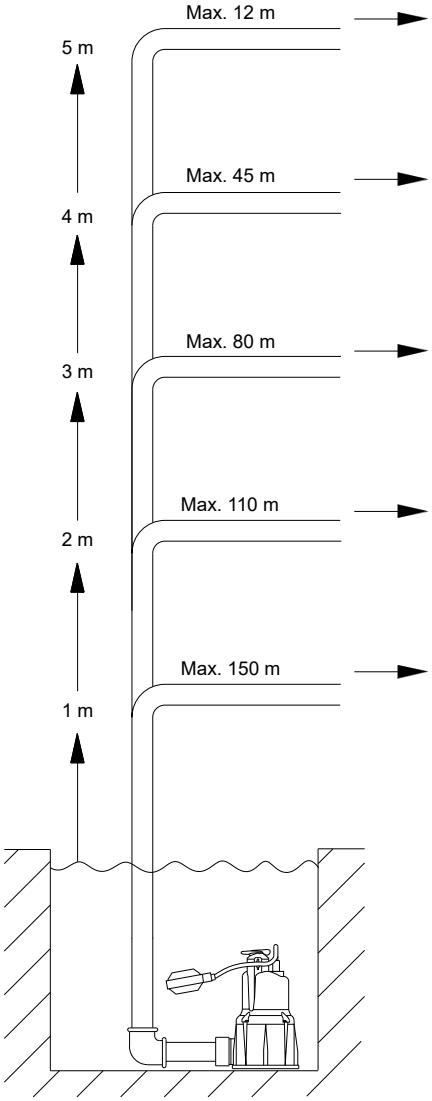
KPC pumps are designed for pumping drainage, rainwater and grey wastewater without fibres.

The pumps are not suitable for these liquids:

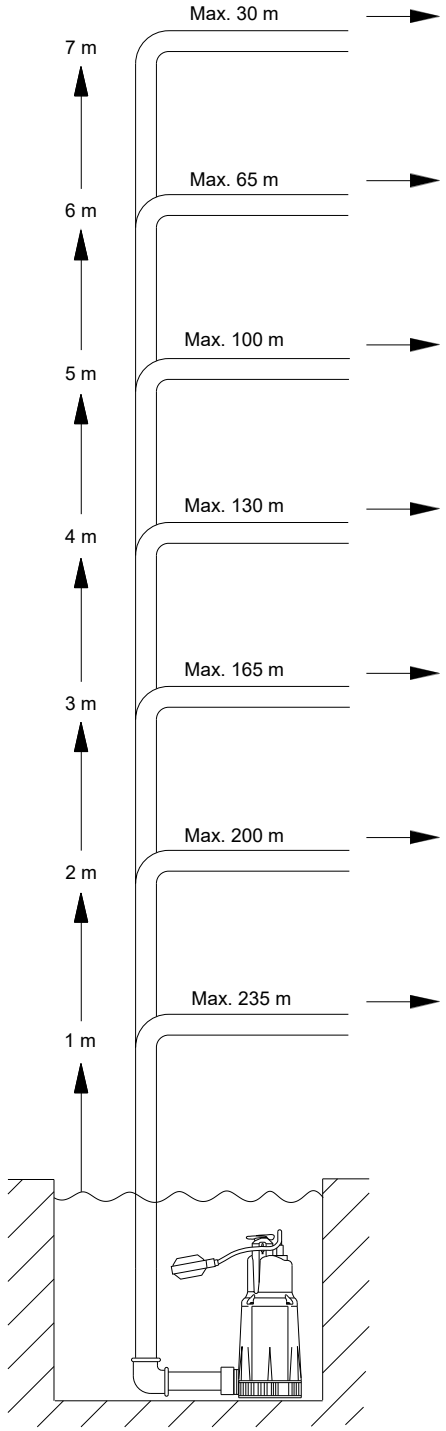
- liquids containing long fibres
- inflammable liquids (such as oil or petrol)
- aggressive liquids.

Sizing guide

The quick sizing chart below gives an approximate overview of heights and discharge pipe lengths with an inner pipe diameter of 32 mm and flow of 2 m^3/h to ensure a self-cleaning velocity of v=0, 7 m/s. The overview is only intended as a guide. Grundfos is not liable for installations that do not comply with the overview. Pressure loss of a non-return valve, 4x90° bends and a gate valve are calculated. The vertical height of the discharge pipe must be measured from the pump stop level. For more flow requirements, a calculation is required.



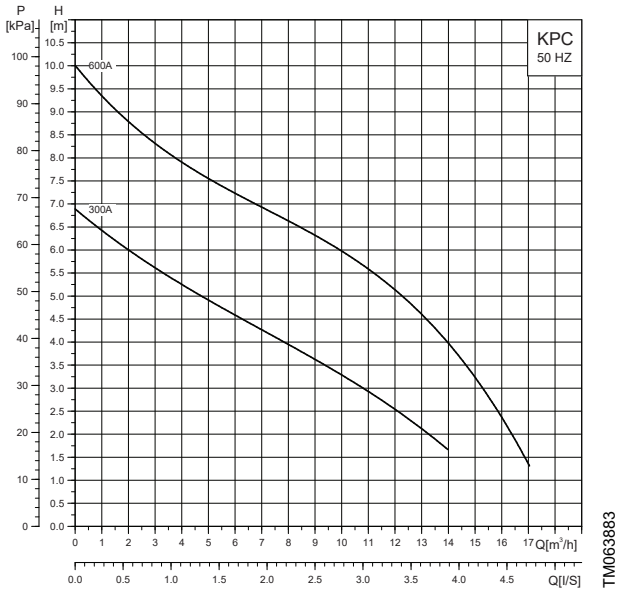
KPC 300 A



KPC 600 A

TM057071

Performance curves KPC 300 A, 600 A 50 Hz



Product range KPC 300 A 50 Hz

Pump type	Product number	Voltage [V]	Plug type	Float switch type	Cable length [m]	Cable type	Net weight [kg]
KPC 300 A	98851053	1 x 220-240	SCHUKO	Cable guided	10	H05RN-F 3G0.75	4.6
KPC 300 A	98863989 *	1 x 220-240	SCHUKO	Cable guided	10	H05RN-F 3G0.75	4.6
KPC 300 A	98917602	1 x 220-240	UK	Cable guided	10	H05RN-F 3G0.75	4.6

* Pump produced in Europe.

Product range KPC 600 A 50 Hz

Pump type	Product number	Voltage [V]	Plug type	Float switch type	Cable length [m]	Cable type	Net weight [kg]
KPC 600 A	98851054	1 x 220-240	SCHUKO	Cable guided	10	H07RN-F 3G1	7.0
KPC 600 A	98864015 *	1 x 220-240	SCHUKO	Cable guided	10	H07RN-F 3G1	7.0
KPC 600 A	98917603	1 x 220-240	UK	Cable guided	10	H07RN-F 3G1	7.0

* Pump produced in Europe.

Technical data

Electrical data

KPC 300 A 50 Hz

Pump type	Voltage [V]	P1 [kW]	P2 [kW]	$I_{1/1}$[A]	Speed [rpm]
KPC 300 A	1 x 220-240	0.35	0.22	1.50	2900

KPC 600 A 50 Hz

Pump type	Voltage [V]	P1 [kW]	P2 [kW]	$I_{1/1}$ [A]	Speed [rpm]
KPC 600 A	1 x 220-240	0.80	0.55	3.40	2900

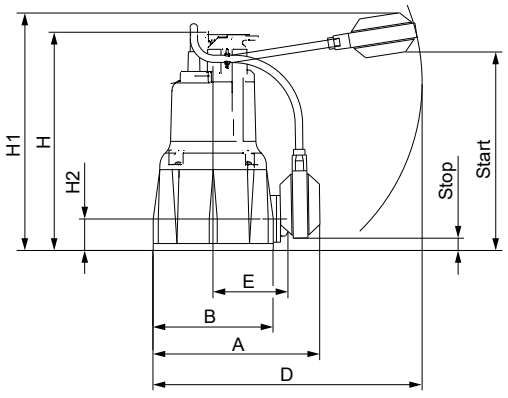
Operating conditions

Maximum head	10.2 m
Maximum flow rate	16 m^3/h
Liquid temperature range	0-35 °C
Liquid pH range	4-6 pH
Liquid requirements	Grey wastewater without fibres
Maximum ambient temperature	40 °C
Maximum particle size through the suction strainer	KPC 300 A 10 mm
	KPC 600 A 10 mm
Minimum water level	KPC 300 A 85 mm
	KPC 600 A 175 mm
Installation	Permanent or portable in a vertical position
Maximum submersion depth	10 m
Automatic float switch	Type name extension A
Special versions on request	Other voltages and/or frequencies

1 IEC 60335-2-41 requires 3 m cable length outside of water.

Dimensions

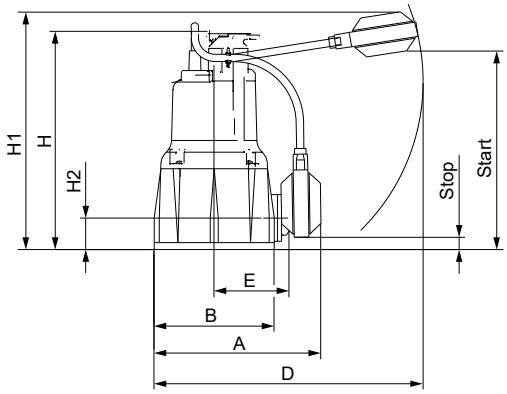
KPC 300 A



TM028466

Pump type	A [mm]	B [mm]	D [mm]	E [mm]	H [mm]	H1 [mm]	H2 [mm]	Connection [in]
KPC 300 A	185	140	225	82	275	390	47.5	Rp 1 1/4

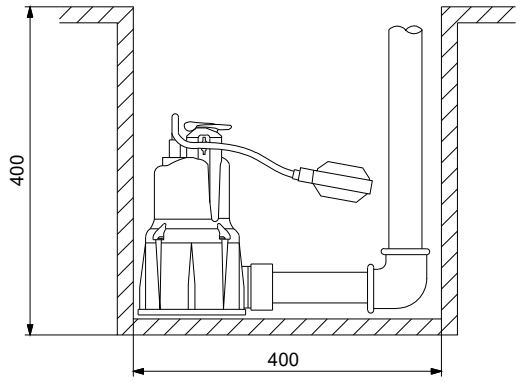
KPC 600 A



TM028466

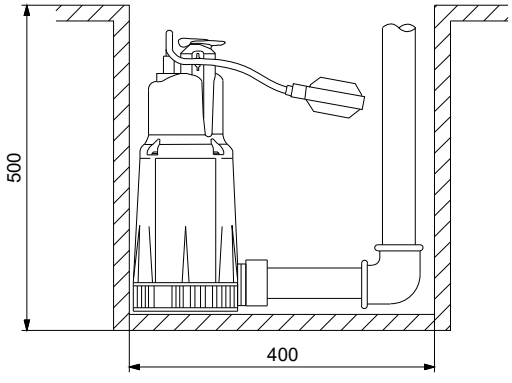
Pump type	A [mm]	B [mm]	D [mm]	E [mm]	H [mm]	H1 [mm]	H2 [mm]	Connection [in]
KPC 600 A	200	160	225	90	376	490	73	Rp 1 1/4

Installation



TM029100

Minimum dimension [mm] for the pit for KPC 300 A with automatic float switch



TM029101

Minimum dimension [mm] for the pit for KPC 600 A with automatic float switch

KPC 24/7



GR-1016111

KPC 24/7 is primarily designed for fully submerged long operation in fish ponds, but it can also be used for intermittent operation.

Thanks to its compact, easy-to-handle design, it can also be used as a portable pump.

KPC 24/7 does not come equipped with a float switch. The pump can handle particles up to 10 mm.

Applications

The pump is suitable for the following applications:

- emergencies such as lifting water from tanks or rivers, emptying swimming pools, fountains, excavations and underpasses
- pumping rainwater and grey wastewater without fibres
- automatically operated, fixed applications in domestic use, draining basements and garages subject to flooding
- permanent installation in a pump pit, or as portable utility pump
- circulating water in ponds.

Features and benefits of KPC 24/7

KPC 24/7 has many beneficial features:

- KPC is a compact, cost-efficient portable pump
- KPC is a robust and lightweight pump with a mounted handle for easy transport
- built-in thermal motor protection to avoid overheating
- automatic level switch that turns the pump on and off as the water level rises or falls
- cooling jacket
- stainless steel motor
- KPC runs 24/7 when fully submerged.

Approvals and markings

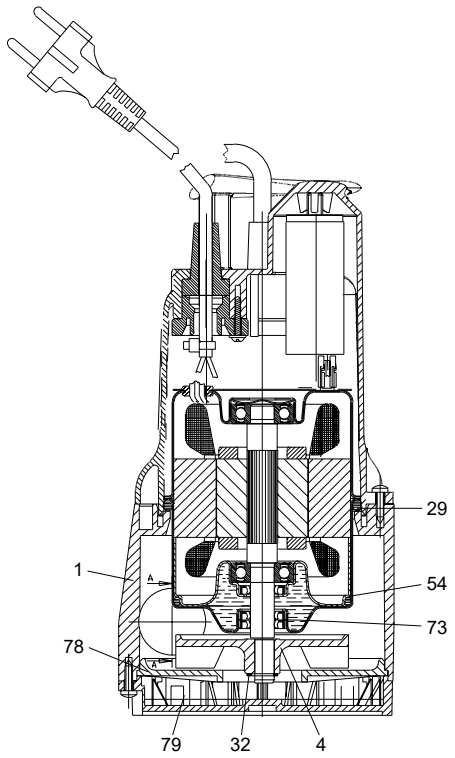
Approvals			
CE	TM075405		98507008_RCM_MARK
	TM075835		

Construction of UNILIFT KPC 24/7

Pump construction features

Water-resistant technopolymer pump sleeve, impeller, and suction strainer. Stainless steel motor housing, rotor shaft, and screws.

Materials



TM028468

Pos.	Description	Materials
1	Pump sleeve	Technopolymer
4	Impeller	Technopolymer
29	O-ring	NBR
32	Stop ring	Stainless steel
54	Motor:	
	- Motor housing	Stainless steel AISI 304 X5 CrNi 1810
	- Rotor	Stainless steel AISI 304 X5 CrNi 1810
78	Suction disc	Noryl GFN 2
79	Suction strainer	Noryl GFN 2

Pump sleeve

KPC has a water-resistant and lightweight technopolymer pump sleeve. The pump can operate partly submerged at intermittent operation and fully submerged when run continuously as the motor is cooled by the pumped media.

Motor

The motor is a continuous-duty, submersible induction motor. The stator is fitted in an airtight stainless steel motor housing with encased cabling, microswitch and capacitor. The rotor is mounted on oversized, greased, and sealed-for-life ball bearings selected to guarantee silent running and long life. The pump has built-in thermal current overload protection and a capacitor which is permanently in circuit in the single-phase version.

KPC 24/7	Supplied as standard with 10 m H05 RN-F power cable

Enclosure class: IP68

Insulation class: F

Manufactured according to EN 60335-2-41.

Standard voltage: 1 x 220-240 V, 50 Hz

Impeller

KPC has a semi-open technopolymer impeller.

Suction strainer

Liquid enters the pump through the holes of the suction strainer. The holes of the strainer prevent the passage of solids larger than 5 mm for KPC 24/7 210 and 10 mm for KPC 24/7 270.

Pumped liquids

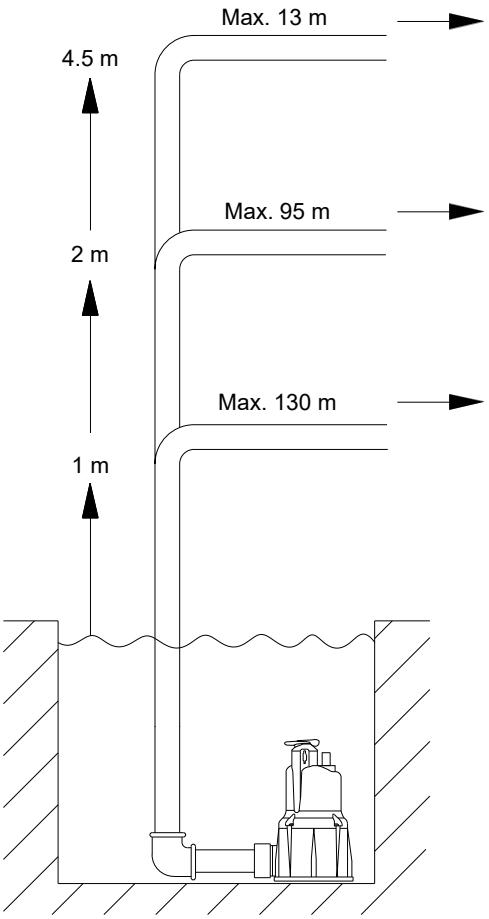
KPC pumps are designed for pumping drainage, rainwater and grey wastewater without fibres.

The pumps are not suitable for these liquids:

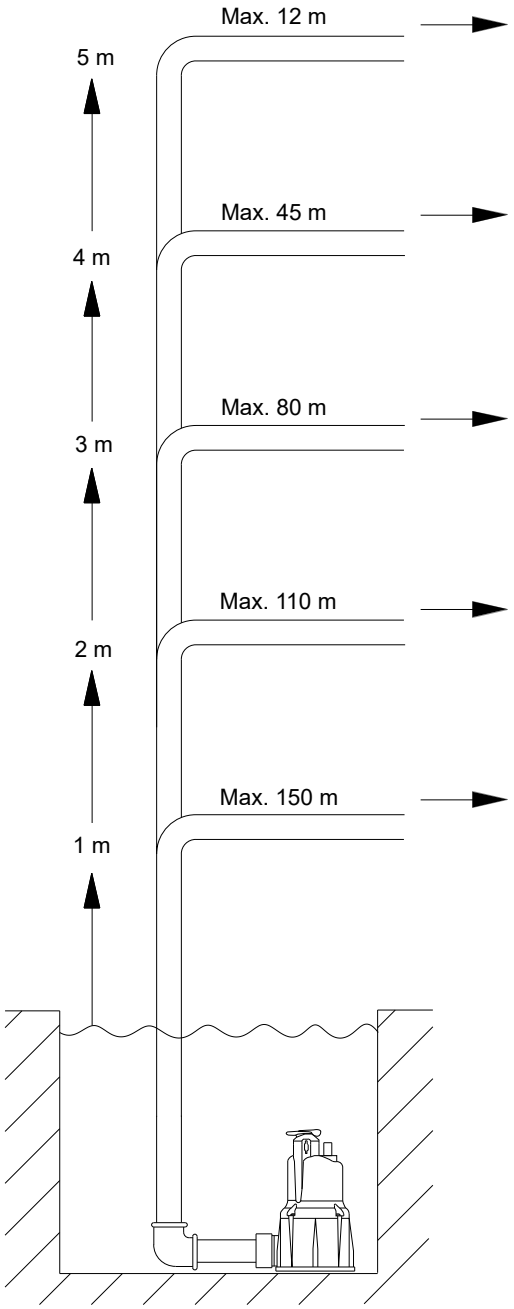
- liquids containing long fibres
- inflammable liquids (such as oil or petrol)
- aggressive liquids.

Sizing guide

The quick sizing chart below gives an approximate overview of heights and discharge pipe lengths with an inner pipe diameter of 32 mm and flow of 2 m^3/h, so that a self-cleaning velocity of v=0, 7 m/s is covered. The overview is only intended as a guide. Grundfos is not liable for installations that do not comply with the overview. Pressure loss of a non-return valve, 4x90° bends and a gate valve is calculated. The vertical height of the discharge pipe should be measured from the pump stop level. For more flow requirements a calculation is needed.



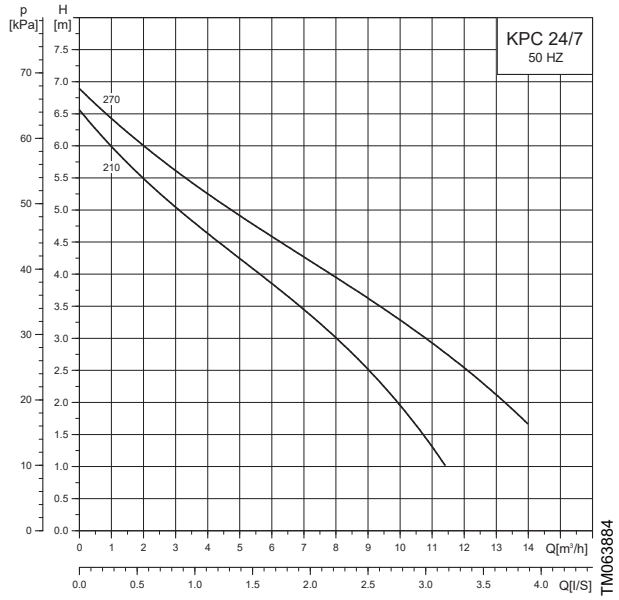
KPC 24/7 210



KPC 24/7 270

TM063885

Performance curves KPC 24/7 50 Hz



Product range KPC 24/7 50 Hz

Pump type	Product number	Voltage [V]	Plug type	Float switch type	Cable length [m]	Cable type	Net weight [kg]
KPC 24/7 210	98851057	1 x 220-240	SCHUKO	-	10	H05RN-F 3G0.75	4.5
KPC 24/7 270	98851058	1 x 220-240	SCHUKO	-	10	H05RN-F 3G0.75	4.5
KPC 24/7 210	98917605	1 x 220-240	UK	-	10	H05RN-F 3G0.75	4.5
KPC 24/7 270	98917606	1 x 220-240	UK	-	10	H05RN-F 3G0.75	4.5

Technical data

Electrical data

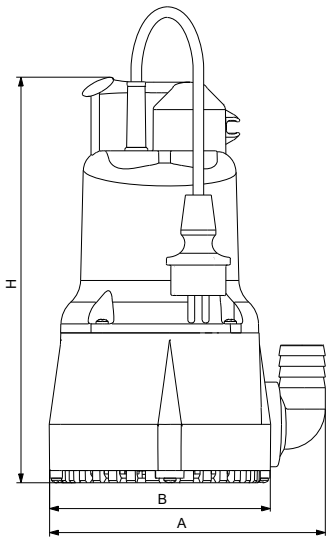
Pump type	Voltage [V]	P1 [kW]	P2 [kW]	$I_{1/1}$[A]	I_{start}[A]	Speed [rpm]
KPC 24/7 210	1 x 220-240	0.35	0.22	1.5	8	2900
KPC 24/7 270	1 x 220-240	0.35	0.22	1.5	8	2900

Operating conditions

Maximum head	6.5 m
Maximum flow rate	10 m^3/h
Liquid temperature range	0-35 °C
Liquid pH range	4-6 pH
Liquid requirements	Grey wastewater without fibres
Maximum ambient temperature	40 °C
Maximum particle size	KPC 24/7 210 5 mm
	KPC 24/7 270 10 mm
Minimum water level	KPC 24/7 210 8 mm
	KPC 24/7 270 30 mm
Installation	Permanent or portable in a vertical position
Maximum submersion depth	10 m
Special versions on request	Other voltages and/or frequencies

1 IEC 60335-2-41 requires 3 m cable length outside of water.

Dimensions



TM063861

Pump type	A [mm]	B [mm]	H [mm]	Connection [in]
KPC 24/7 210	185	140	266	Rp 1 1/4
KPC 24/7 270	185	140	275	Rp 1 1/4

UNILIFT CC



GR-1017866

The UNILIFT CC pumps are single-stage, highly robust submersible pumps capable of pumping down to a 3 mm water level and handling particles up to 10 mm. The pump body contains a cooling jacket for operating partly submerged. The pumps have both a top and a side outlet, allowing easy adaptation to existing pipes including auto coupling systems.

The pumps are suitable for permanent installation or can be used as portable pumps. Three variations of the pump are available

- with an included float switch for automatic start and stop
- without a float switch to connect to a separate level controller
- manual start and stop of the pump.

Applications

The pump is suitable for the following applications:

- lifting up greywater to sewer mains from basements of sanitary appliances like wash basins, sinks, showers and bath tubs
- collecting and discharging of rainwater or groundwater in drainage systems around building basements
- emptying of pools, ponds and flooded basements
- backwater prevention to protect the building basement and to discharge greywater from sanitary appliances
- installation in pumping stations and tanks to get a complete lifting station
- special pump version for media containing salt water and chlorinated water.

Features and benefits of UNILIFT CC

UNILIFT CC has many beneficial features:

- cooling jacket allows the pump to operate continuously while partially submerged
- comprehensive motor protection
- automatic venting for trouble-free startup after dry periods
- draining of areas, such as flooded basements, down to a level of just 3 mm
- strong composite casing and stainless-steel strainer
- 3 shaft seals with extra V-ring for UNILIFT CC 7 and 9 to protect the shaft seals against sand particles
- ceramic shaft to prolong the lifetime of the pump.

Type key

Example: UNILIFT CC.9.A1.HG

	Description
UNILIFT	Type range
CC	Type
5 7 9	Maximum head [m]
A1 - automatic operation AG - automatic operation, guided arm M1 - manual operation	Level control
- standard material HG - high grade material	Material

Approvals and markings

Approvals			
CE	TM075405	TÜVRheinland CERTIFIED	99853271

Scope of delivery

The delivery includes:

- a non-return flap valve approved according to EN 12050-4 with a 90° bend
- a stepped adapter with outside threads of R ¾", 1" and 1 ¼" to connect to different pipes or hoses when used in mobile applications.

Pumped liquids

The pumps are suitable for these liquids:

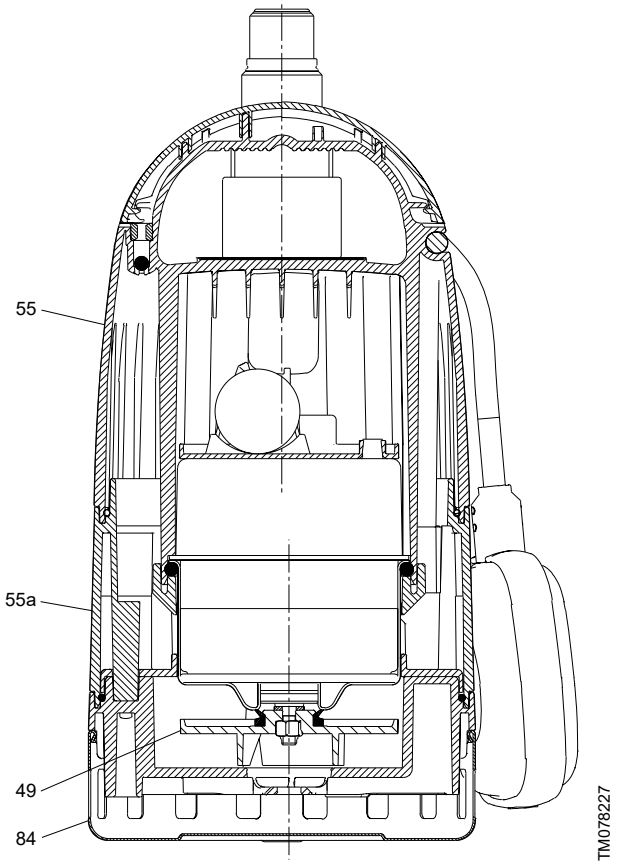
- slightly dirty water such as drainage or greywater from sanitary appliances
- non-aggressive wastewater.

However, special versions with a higher grade material (EN 1.4401/AISI316) on motor parts are suitable for salt media such as brackish water in ports, seawater, water softeners, and chlorinated water less than 20 °C.

The pumps are not suitable for these liquids:

- liquids containing long fibres
- inflammable liquids (such as oil and petrol)
- aggressive liquids.

Construction of UNILIFT CC



Materials

Pos.	Component	Material	DIN. W - No.
55	Motor sleeve	PP 15 GF	
55a	Pump sleeve	PP 15 GF	
49	Impeller	PP 20 GF	
84	Suction strainer	Stainless steel, class A2	
-	V-rings	NBR 50	
-	O-rings	NBR 70	
181	Cable	H05RN-F 3G0.75 (CC 5) H07RN-F3G1 (CC 7 - CC 9)	
-	Wetted parts *	Stainless steel, class 2	1.4401

* Only included in special pump variant.

Cooling jacket

The pump can operate partially submerged because the motor is cooled by the pumped media. This feature allows the pump to operate longer periods with low water levels.

Shaft seal

UNILIFT CC contains 3 shaft seals. Two face the medium and one is placed in the motor between a grease chamber filled with long-life, high temperature grease. To extend the lifetime of seals, the shaft is ceramic coated. For added safety of the shaft with abbrasive media, the shaft seals of UNILIFT CC 7 and UNILIFT CC 9 are protected with a V-ring.

Strainer

UNILIFT CC has an easily removable strainer composed of stainless steel. The strainer can be clipped off from the pump body to enable a lower suction down to 3 mm.

Dual outlet

The two outlet options offer maximum flexibility in replacement situations or new installations. These pump types can be placed in small wells using the top discharge connection, or they can be placed in deep pumping stations assembled on auto couplings.

Self-venting hydraulic

A pit or drainage sump can dry out during summer periods or air can enter into the hydraulic. The self-venting hydraulic enables air to escape when water levels rise which secures a reliable restart.

Motor

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

	Insulation class	Enclosure class
UNILIFT CC 5	B	IP68
UNILIFT CC 7	F	IP68
UNILIFT CC 9	B	IP68

The motor includes automatic overload protection which cuts out the motor in case of overload. When cooled to normal temperatures, the motor will restart automatically.

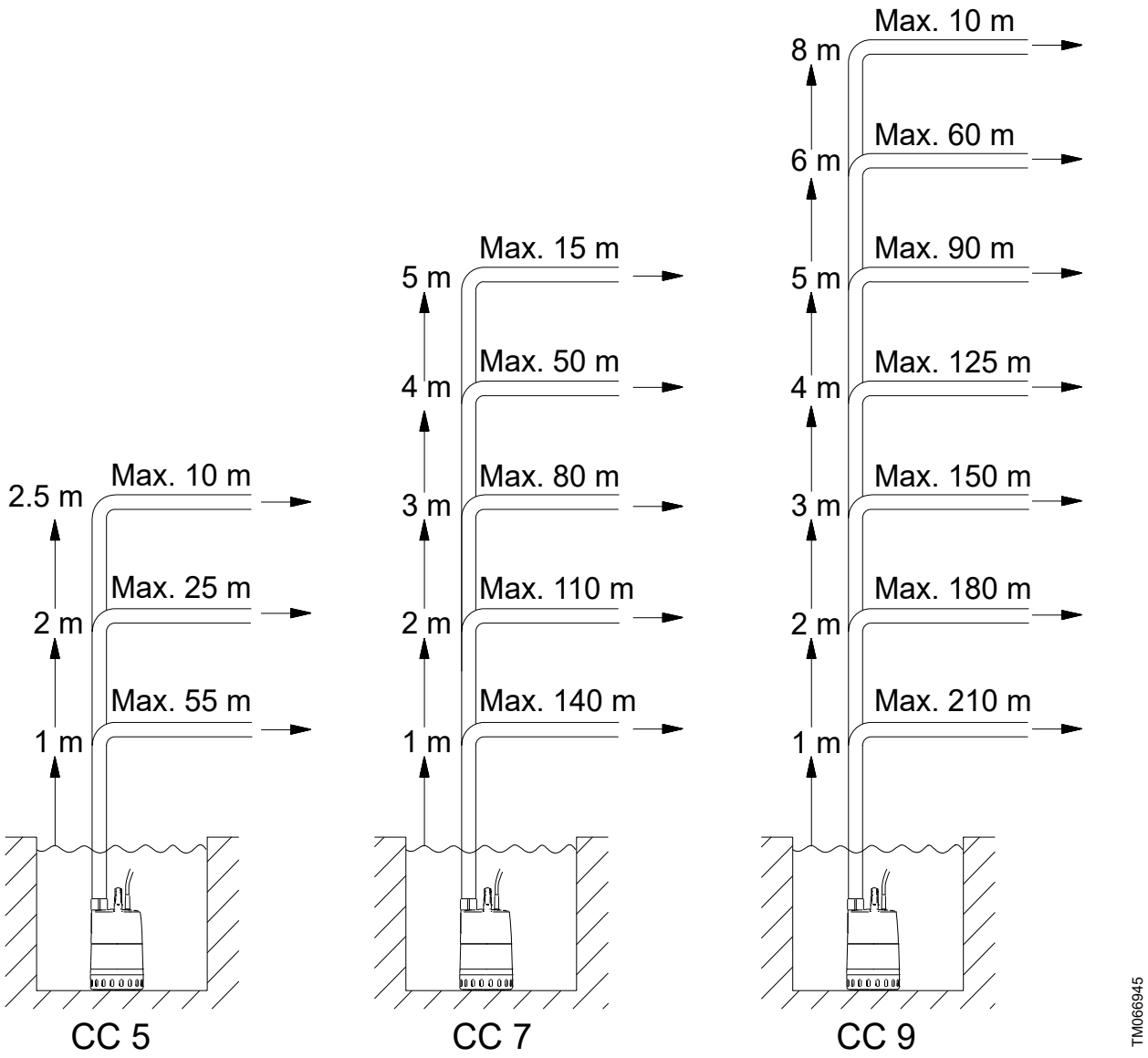
Pump and motor sleeve

The pump and motor sleeve are both made of composite material cast in one piece with a 1 1/4" external pipe thread (G) discharge connection. A slot on the handle holds the float switch cable. The mains cable and float switch cables are lead into the motor sleeve through hermetically sealed cable entries.

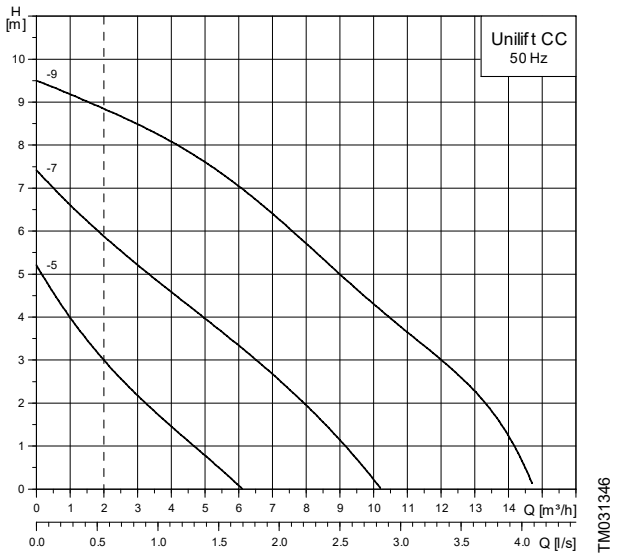
The suction strainer is fitted to the pump sleeve by giving it a light push, and it can be removed easily by means of a screwdriver or similar tool. The water enters the pump through the holes of the suction strainer preventing the passage of large solids. The large holes also ensure a slow flow into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

Sizing guide

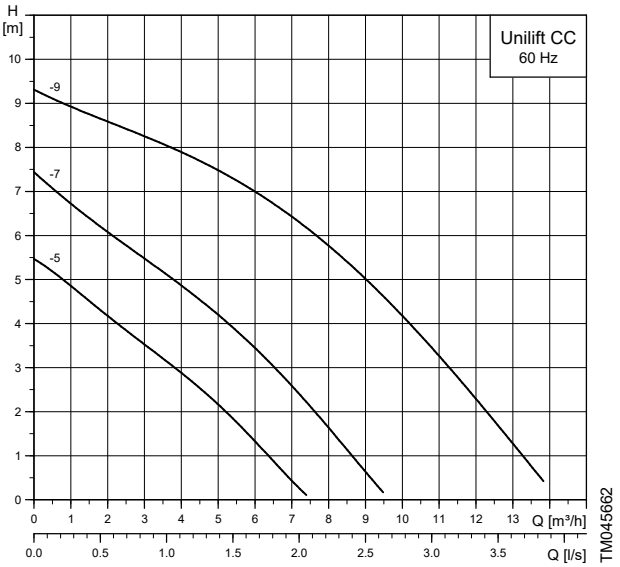
The quick sizing chart below gives an approximate overview of heights and discharge pipe lengths with an inner pipe diameter of 32 mm and flow of 2 m^3/h, so that a self-cleaning velocity of v=0, 7 m/s is covered. The overview is only intended as a guide. Grundfos is not liable for installations that do not comply with the overview. Pressure loss of a non-return valve, 4x90° bends and a gate valve is calculated. The vertical height of the discharge pipe must be measured from the pump stop level. For more flow requirements a calculation is needed.



Performance curves UNILIFT CC 50 Hz



Performance curves UNILIFT CC 60 Hz



Product range UNILIFT CC 50 Hz

Pump type	Product number	Voltage[V]	Plug type	Float switch	Cable length [m]	Cable type	Net weight [kg]
UNILIFT CC 5	96280965	1 x 220-240	SCHUKO	-	5	H05RN-F 3G0.75	4.3
	96280966	1 x 220-240	SCHUKO	Cable guided	5	H05RN-F 3G0.75	4.5
	98624419	1 x 220-240	SCHUKO	Arm guided	5	H05RN-F 3G0.75	4.7
	96280977	1 x 220-240	No plug	-	5	H05RN-F 3G0.75	4.3
	96280978	1 x 220-240	No plug	Cable guided	5	H05RN-F 3G0.75	4.5
	96280972	1 x 220-240	Australia	Cable guided	5	H05RN-F 3G0.75	4.5
UNILIFT CC 7	96280967	1 x 220-240	SCHUKO	-	10	H07RN-F 3G1	5.0
	96280968	1 x 220-240	SCHUKO	Cable guided	10	H07RN-F 3G1	5.3
	98624464 *	1 x 220-240	SCHUKO	Cable guided	10	H05RN-F 3G0.75	5.4
	98624463	1 x 220-240	SCHUKO	Arm guided	10	H05RN-F 3G0.75	5.4
	96280979	1 x 220-240	No plug	-	10	H07RN-F 3G1	5.0
	96280980	1 x 220-240	No plug	Cable guided	10	H07RN-F 3G1	5.3
	96280974	1 x 220-240	Australia	Cable guided	10	H07RN-F 3G1	5.3
UNILIFT CC 9	96280969	1 x 220-240	SCHUKO	-	10	H07RN-F 3G1	6.6
	96280970	1 x 220-240	SCHUKO	Cable guided	10	H07RN-F 3G1	6.8
	98624466 *	1 x 220-240	SCHUKO	Cable guided	10	H07RN-F 3G1	6.9
	98624465	1 x 220-240	SCHUKO	Arm guided	10	H07RN-F 3G1	6.9
	96280981	1 x 220-240	No plug	-	10	H07RN-F 3G1	6.6
	96280982	1 x 220-240	No plug	Cable guided	10	H07RN-F 3G1	6.8
	96280976	1 x 220-240	Australia	Cable guided	10	H07RN-F 3G1	6.8

* Special version for aggressive media, composed of higher grade stainless steel (AISI 316).

Product range UNILIFT CC 60 Hz

Pump type	Product number	Voltage[V]	Plug type	Float switch	Cable length [m]	Cable type	Net weight [kg]
UNILIFT CC 5	97530823	1 x 230	No plug	-	5	H05RN-F 3G0.75	4.5
	97530824	1 x 230	No plug	Cable guided	5	H05RN-F 3G0.75	4.5
UNILIFT CC 7	97530825	1 x 230	No plug	-	10	H07RN-F 3G1	4.7
	97530826	1 x 230	No plug	Cable guided	10	H07RN-F 3G1	4.7
UNILIFT CC 9	97530827	1 x 230	No plug	-	10	H07RN-F 3G1	6.5
	97530828	1 x 230	No plug	Cable guided	10	H07RN-F 3G1	6.5

Technical data

Electrical data

50 Hz

Pump type	Voltage[V]	P1 [kW]	P2 [kW]	I_n[A]	I_{start}[A]	Speed [rpm]
UNILIFT CC 5	1 x 220-240	0.24	0.108	1.1	1.8	2850
UNILIFT CC 7	1 x 220-240	0.38	0.171	1.7	3.1	2850
UNILIFT CC 9	1 x 220-240	0.78	0.465	3.7	8.2	2850

60 Hz

Pump type	Voltage[V]	P1 [kW]	P2 [kW]	I_n[A]	I_{start}[A]	Speed [rpm]
UNILIFT CC 5	1 x 230	0.25	0.101	2.1	2.7	3115
UNILIFT CC 7	1 x 230	0.35	0.179	2.8	5.7	3115
UNILIFT CC 9	1 x 230	0.66	0.42	5.6	18.5	3115

Operating conditions

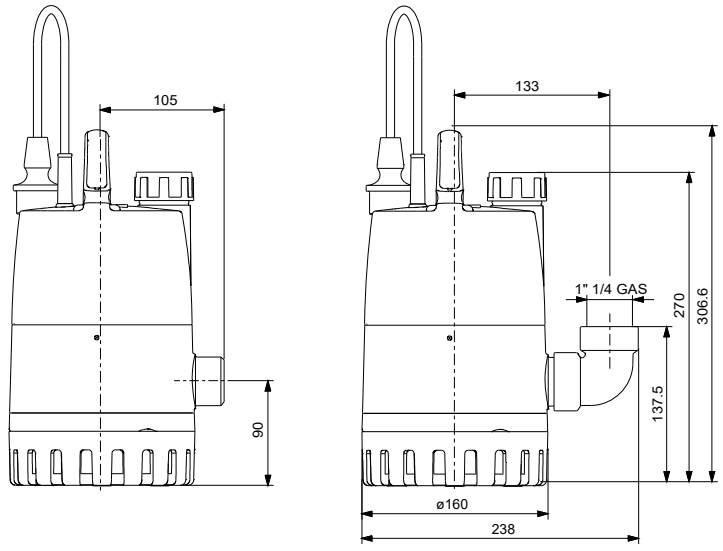
Liquid temperature

Maximum head	5 m
Maximum flow rate	6 m^3/h
Liquid temperature range	0-40 °C [1]
Liquid pH range	4-9
Liquid requirements	Clean, non-aggressive water and grey wastewater
Maximum ambient temperature	40 °C
Maximum particle size	10 mm
Maximum submersion depth	UNILIFT CC5: 2 m UNILIFT CC7 and CC9: 7 m
Automatic float switch	Type name extension A
Special versions on request	Other voltages and/or frequencies

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

2 IEC 60335-2-41 requires 3 m cable length outside of water

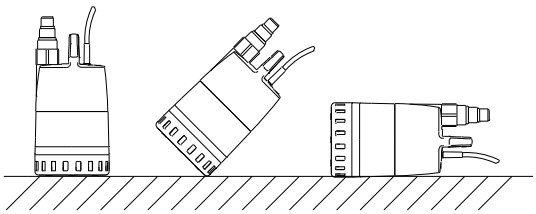
Dimensions



TM060739

Installation

The pump can be used in vertical position and 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.



TM001111

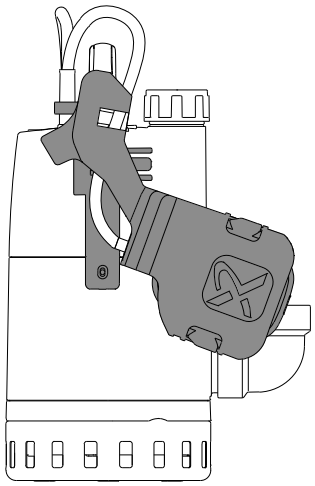
Pump installation positions

Installation depth

Maximum 10 metres below the water surface.

Installation in a narrow pit

If the UNILIFT CC pump is to be installed in a narrow pit, it is available with a level arm bracket. The minimum narrow pit dimensions are 300 x 350 mm.



TM060696

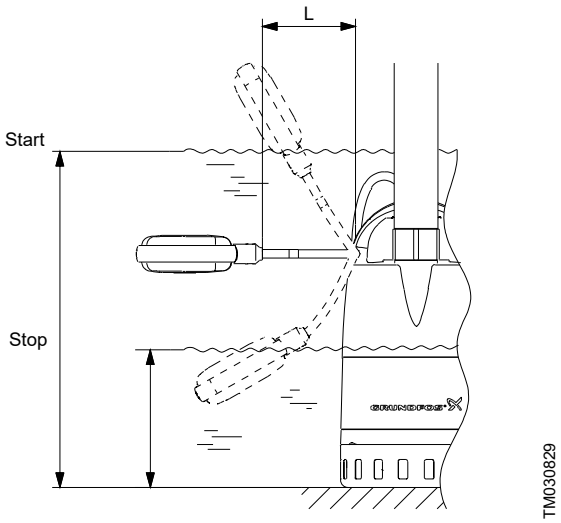
Pump type	Start and stop levels for level arm	
	Start [mm]	Stop [mm]
UNILIFT CC	211	89
UNILIFT CC 7	211	89
UNILIFT CC 9	247	125

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 and stops and a large difference in level.
- Reducing the free cable length results in more frequent starts and 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 at minimum 100 mm and maximum 200 mm.



TM030829

Start and stop level, UNILIFT CC

Pump type	Cable length [L] min. 100 mm		Cable length [L] min. 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

Accessories

The following are recommended accessories for UNILIFT CC.

Product number	Description
98709179	Guide arm for floater, UNILIFT CC
99369644	LC231 (1 pump) without float switch
99369650	LC231 (dual pump controller) without float switch
91427145	Float switch M2 with 5 m cable

MULTIBOX



GR-1017865

MULTIBOX is an accessory set that is recommended for cellars and buildings prone to flooding. The box prevents particles from disrupting the pump suction side. This accessory set contains:

- UNILIFT CC7 A1 pump
- strainer/transportation box with lid
- Storz C coupling
- 15 m hose
- anti-kink sleeve
- non-return valve.

Pump type	Description
97519841	MULTIBOX UNILIFT

UNILIFT KP



TM079227

UNILIFT KP submersible, stainless-steel drainage pump in a compact design with hermetically sealed stator housing (canned motor). It has a service-friendly and sustainable product design. The pump body contains a cooling jacket for partially submerged operation. The pump is able to handle particles up to 10 mm.

The pump is suitable for permanent installation or can be used as a portable pump.

The following options are available:

- with a cable-guided float switch for automatic start/stop
- with a vertical level switch for automatic start in small confined spaces
- without a float switch for manual operation
- connection to a separate level controller.

Applications

The pump is suitable for the following applications:

- pumping in drainage collecting wells, pits inside and outside the building
- mobile emergency use to drain flooded areas such as basements
- backwater prevention to protect building basements and to discharge greywater from sanitary appliances
- emptying of swimming pools, ponds and tanks
- industrial and commercial use, for example, evaporative cooling systems
- various applications within agriculture, horticulture and dairies, breweries and the process industry.

Features and benefits of UNILIFT KP

UNILIFT KP has many beneficial features:

- robust and sustainable stainless-steel design for all hydraulic parts
- service friendly to extend pump lifetime – quick access to replace wear parts, for example, float switch, shaft sealing, impeller and rotor
- cooling jacket that allows the pump to operate continuously while partially submerged
- comprehensive motor protection
- the only wet runner on the market with prolonged pump longevity even on worn shaft seals
- longitudinal, water-tight cables and glass-sealed cable socket on the pump that prevents water from entering the motor at damaged cables and enables easy replacement.

Type key

Example:

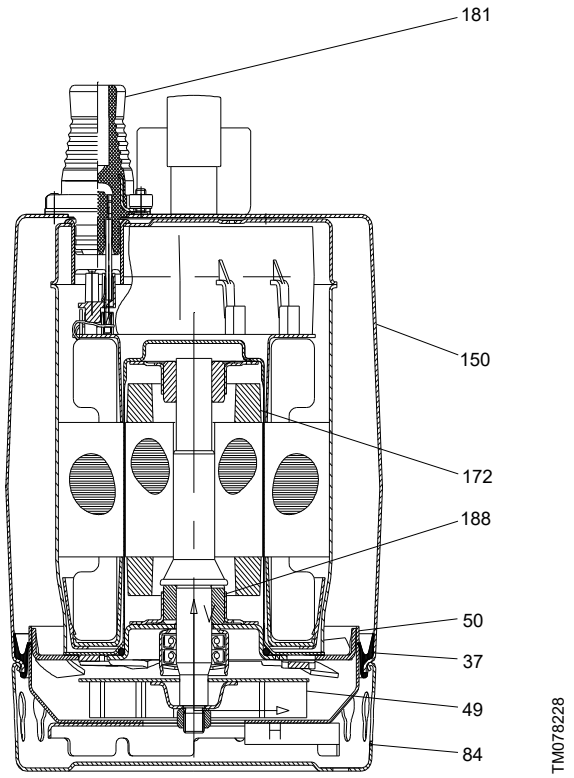
UNILIFT KP.150.A.1

	Description
UNILIFT KP	Type range
150 250 350	Rated motor output (P2 [W])
AV - With vertical level switch (automatic operation) A - With float switch (automatic operation) M - Without level switch (manual operation)	Level control
1 - single-phase 3 - three-phase	Motor

Approvals and markings

Approvals			
CE	TM075405	EAC	TM074611
	98507008_RCM_MARK		TM075835
TÜVRheinland CERTIFIED	99853271	DVE	TM074619

Construction of UNILIFT KP



Materials

Pos.	Component	Material	DIN W. - Nr.	AISI
	Pump sleeve	Stainless steel	1.4301	304
50	Pump housing	Stainless steel	1.4301	304
84	Suction strainer	Stainless steel	1.4301	304
49	Impeller	Stainless steel	1.4301	304
172	Shaft	Stainless steel	1.4057	431
	Stator housing	Stainless steel	1.4301	304
-	Guide vanes	Stainless steel	1.4301	304
188	Bearings	Carbon		
-	O-rings	NBR		
37	Seal rings	NBR		
181	Cables	H07RN(8)-F 3G1 H07RN(8)-F 4G1		

Cooling jacket

The pump has an outer casing that ensures continuous cooling of the motor by the pumped liquid. The rotor shaft operates in two maintenance-free carbon bearings cooled by the pumped liquid.

Pump sleeve

The stainless-steel pump sleeve is made in one piece with Rp 1 1/4 discharge port and insulating handle. UNILIFT KP pumps have a watertight vulcanised plug.

Stator housing

Completely hermetically sealed stator housing eliminates potential entry points for water. A semi-open impeller is designed to avoid solids and fibres jamming the pump.

Motor

The motor is a single-phase 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: IP68
- Insulation class: F

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

Shaft seal

The pump has a double shaft seal consisting of two lip seals that are greased in between.

Impeller

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.

Strainer

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

Pumped liquids

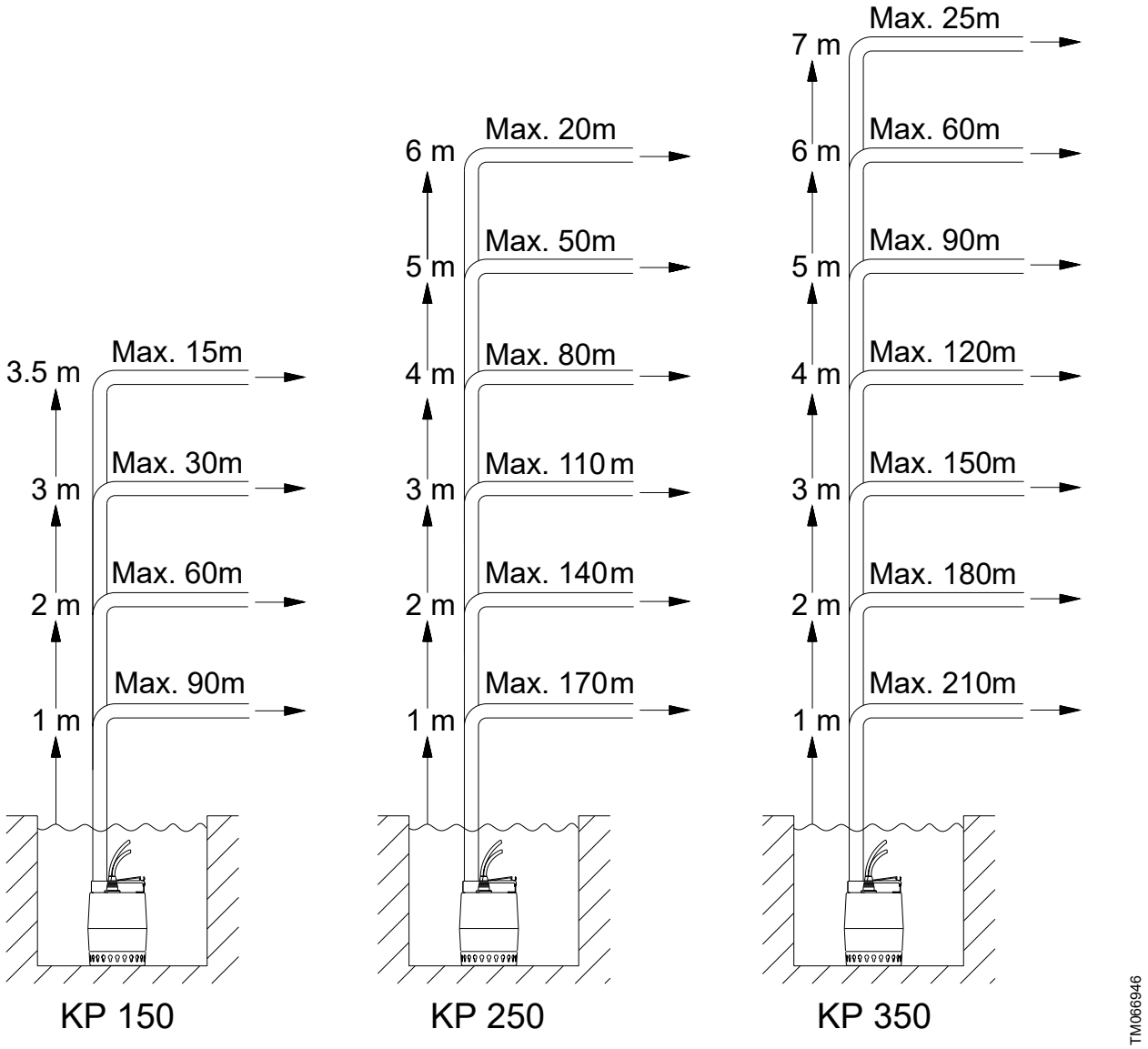
The pump is suitable for the following liquids:

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

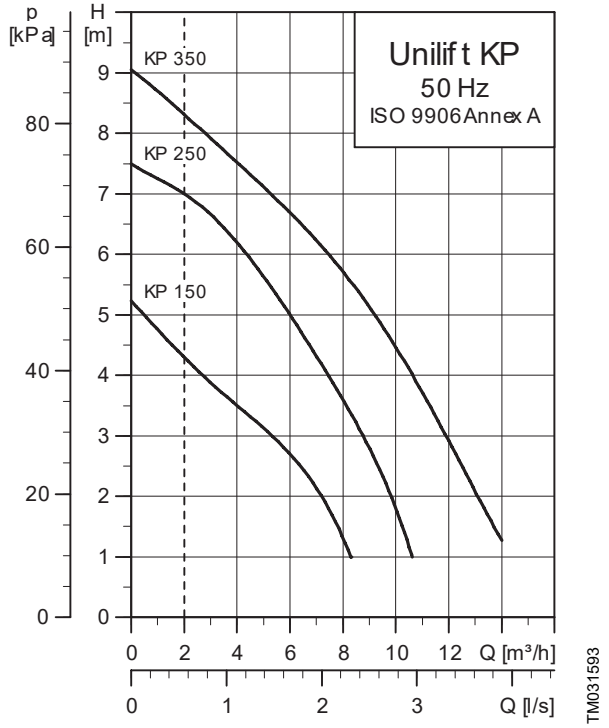
The open-impeller design ensures free passage of solids up to ∅10.

Sizing guide

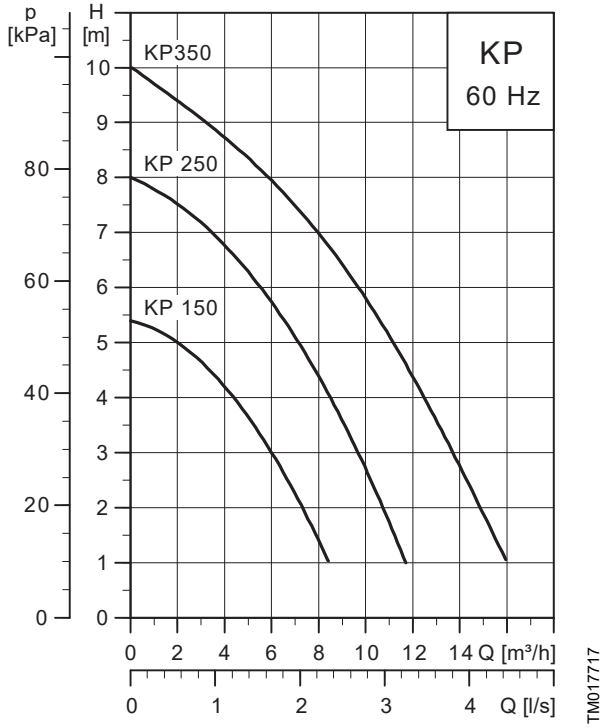
The quick sizing chart below gives an approximate overview of heights and discharge pipe lengths with an inner pipe diameter of 32 mm and flow of 2 m^3/h, so that a self-cleaning velocity of v=0, 7 m/s is covered. The overview is only intended as a guide. Grundfos is not liable for installations that do not comply with the overview. Pressure loss of a non-return valve, 4x90° bends and a gate valve is calculated. The vertical height of the discharge pipe must be measured from the pump stop level. For more flow requirements a calculation is needed.



Performance curves UNILIFT KP 50 Hz



Performance curves UNILIFT KP 60 Hz



Product range UNILIFT KP 50 Hz

UNILIFT KP 150

Pump type	Product number	Voltage[V]	Plug type	Float switch	Cable length	Cable type	Net weight [kg]
KP 150	011H1300	1 x 220-230	SCHUKO	-	10 m	H07RN8-F 3G1	6.1
	011H1600	1 x 220-230	SCHUKO	Cable guided	5 m	H07RN8-F 3G1	5.7
	011H1800	1 x 220-230	SCHUKO	Cable guided	10 m	H07RN8-F 3G1	6.3
	011H1400	1 x 220-230	SCHUKO	Vertical	5 m	H07RN8-F 3G1	5.8
	011H1900	1 x 220-230	SCHUKO	Vertical	10 m	H07RN8-F 3G1	6.4
	011H6000	1 x 220-230	No plug	-	5 m	H07RN8-F 3G1	5.4
	011H6300	1 x 220-230	No plug	-	10 m	H07RN8-F 3G1	6.0
	011H6600	1 x 220-230	No plug	Cable guided	5 m	H07RN8-F 3G1	5.6
	011H6800	1 x 220-230	No plug	Cable guided	10 m	H07RN8-F 3G1	6.2
	011H6400	1 x 220-230	No plug	Vertical	5 m	H07RN8-F 3G1	5.7
	011H6900	1 x 220-230	No plug	Vertical	10 m	H07RN8-F 3G1	6.3
	92533101	1 x 220-230	Australia	-	5 m	H07RN-F 3G1	5.5
	92533687	1 x 220-230	Australia	Cable guided	5 m	H07RN-F 3G1	5.7
	92533103	1 x 220-230	Australia	Vertical	5 m	H07RN-F 3G1	5.8

UNILIFT KP 250

Pump type	Product number	Voltage[V]	Plug type	Float switch	Cable length	Cable type	Net weight [kg]
KP 250	012H1300	1 x 220-230	SCHUKO	-	10 m	H07RN8-F 3G1	6.3
	012H1600	1 x 220-230	SCHUKO	Cable guided	5 m	H07RN8-F 3G1	5.9
	012H1800	1 x 220-230	SCHUKO	Cable guided	10 m	H07RN8-F 3G1	6.5
	012H1400	1 x 220-230	SCHUKO	Vertical	5 m	H07RN8-F 3G1	6.0
	012H1900	1 x 220-230	SCHUKO	Vertical	10 m	H07RN8-F 3G1	6.6
	012H6000	1 x 220-230	No plug	-	5 m	H07RN8-F 3G1	5.6
	012M6100	3 x 380-415	No plug	-	5 m	H07RN8-F 4G1	6.3
	012M6300	3 x 380-415	No plug	-	5 m	H07RN8-F 4G1	7.0
	012H6300	1 x 220-230	No plug	-	10 m	H07RN8-F 3G1	6.2
	012H6600	1 x 220-230	No plug	Cable guided	5 m	H07RN8-F 3G1	5.8
	012H6800	1 x 220-230	No plug	Cable guided	10 m	H07RN8-F 3G1	6.4
	012H6400	1 x 220-230	No plug	Vertical	5 m	H07RN8-F 3G1	5.9
	012H6900	1 x 220-230	No plug	Vertical	10 m	H07RN8-F 3G1	6.5
	92533641	1 x 220-230	Australia	-	5 m	H07RN-F 3G1	5.7
	92533646	1 x 220-230	Australia	Cable guided	5 m	H07RN-F 3G1	5.9
	92533644	1 x 220-230	Australia	Vertical	5 m	H07RN-F 3G1	6.0

UNILIFT KP 350

Pump type	Product number	Voltage[V]	Plug type	Float switch	Cable length	Cable type	Net weight [kg]
KP 350	013N1300	1 x 220-240	SCHUKO	-	10 m	H07RN8-F 3G1	6.7
	013N1600	1 x 220-240	SCHUKO	Cable guided	5 m	H07RN8-F 3G1	6.3
	013N1800	1 x 220-240	SCHUKO	Cable guided	10 m	H07RN8-F 3G1	6.9
	013N1400	1 x 220-240	SCHUKO	Vertical	5 m	H07RN8-F 3G1	6.4
	013N1900	1 x 220-240	SCHUKO	Vertical	10 m	H07RN8-F 3G1	7.0
	013M6100	3 x 380-400	No plug	-	5 m	H07RN8-F 4G1	7.1
	013M6300	3 x 380-400	No plug	-	10 m	H07RN8-F 4G1	7.5
	013N6300	1 x 220-240	No plug	-	10 m	H07RN8-F 3G1	6.6
	013N6600	1 x 220-240	No plug	Cable guided	5 m	H07RN8-F 3G1	6.2
	013N6800	1 x 220-240	No plug	Cable guided	10 m	H07RN8-F 3G1	6.8
	013N7900	1 x 220-240	No plug	Vertical	10 m	H07RN8-F 3G1	6.9
	92533648	1 x 220-240	Australia	-	5 m	H07RN-F 3G1	6.1
	92533666	1 x 220-240	Australia	Cable guided	5 m	H07RN-F 3G1	6.3
	92533662	1 x 220-240	Australia	Vertical	5 m	H07RN-F 3G1	6.4

Product range UNILIFT KP 60 Hz

UNILIFT KP 250

Pump type	Product number	Voltage[V]	Plug type	Float switch	Cable length	Cable type	Net weight
KP 250	012G6300	1 x 220-230	No plug	-	10 m	H07RN8-F 3 G 1	5.6
	012G6600	1 x 220-230	No plug	Cable guided	5 m	H07RN8-F 3 G 1	5.6
	012G6800	1 x 220-230	No plug	Cable guided	10 m	H07RN8-F 3 G 1	5.6
	012G6400	1 x 220-230	No plug	Vertical	5 m	H07RN8-F 3 G 1	5.6
	012G6900	1 x 220-230	No plug	Vertical	10 m	H07RN8-F 3 G 1	5.6

UNILIFT KP 350

Pump type	Product number	Voltage[V]	Plug type	Float switch	Cable length	Cable type	Net weight
KP 350	013G6600	1 x 220-230	No plug	Cable guided	5 m	H07RN8-F 3 G 1	5.6
	013G6800	1 x 220-230	No plug	Cable guided	10 m	H07RN8-F 3 G 1	5.6

Technical data

Electrical data

UNILIFT KP 50 Hz

Pump type	Voltage[V]	P1 [kW]	P2 [kW]	I_n[A]	I_{start}[A]	Speed [rpm]
KP 150	1 x 220-230	0.30	0.15	1.3	3.3	2666
KP 250	1 x 220-230	0.48	0.25	2.3	6.6	2692
	3 x 380-415	0.48	0.25	0.8	2.9	2568
KP 350	1 x 220-240	0.72	0.35	3.2	8.9	2665
	3 x 380-400	0.70	0.35	1.3	5.2	2674

UNILIFT KP 60 Hz

Pump type	Voltage [V]	P1 [kW]	P2 [kW]	I_n[A]	I_{start}[A]	Speed [rpm]
KP 250	1 x 220-230	0.71	0.25	3.6	7.7	3298
KP 350	1 x 220-230	0.75	0.35	3.2	8.1	3155

Operating conditions

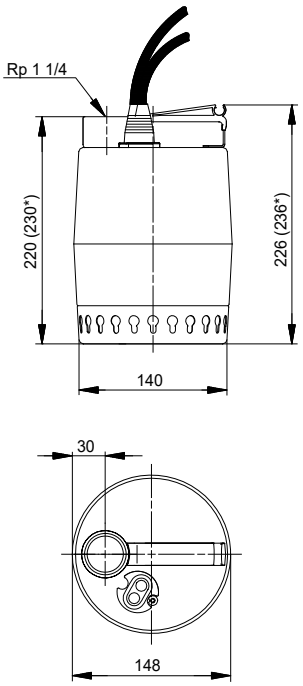
During continuous operation, the suction strainer must always be completely covered by liquid.

Maximum head	5.5-10 m
Maximum flow rate	11.2-14 m^3/h
Liquid temperature range	0-50 °C
Liquid requirements	Clean, non-aggressive water and grey wastewater
Maximum ambient temperature	50 °C
Maximum particle size	10 mm
Maximum submersion depth	2 m with 5 m cable length 7 m with 10 m cable length
Automatic float switch	Type name extension A
Special versions on request	Other voltages and/or frequencies

1 At intervals of at least 30 minutes, the pump is allowed, however, to run at maximum +70 °C for periods not exceeding 2 minutes. Liquid temperature depends on voltage.

2 IEC 60335-2-41 requires 3 m cable length outside of water.

Dimensions



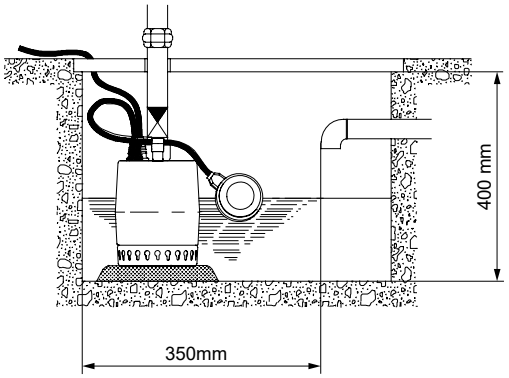
TM001642

Pump type	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Connection [in]
UNILIFT KP 150 UNILIFT KP 250	214	225	30	148	140	Rp 1 1/4"
UNILIFT KP 350	224	235	30	148	140	Rp 1 1/4"

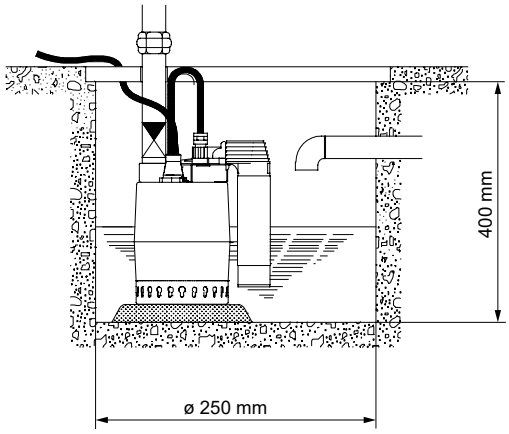
Installation

If UNILIFT KP is installed in a collecting well, the minimum well dimensions must be as shown in the figures below.

To avoid loss of air pressure, the pump must be placed as far from the inlet connection as possible.



Minimum well dimensions, UNILIFT KP-A

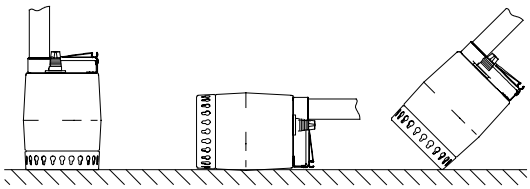


Minimum well dimensions, UNILIFT KP-AV

Pump positioning

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

UNILIFT KP-AV must be used in vertical position.

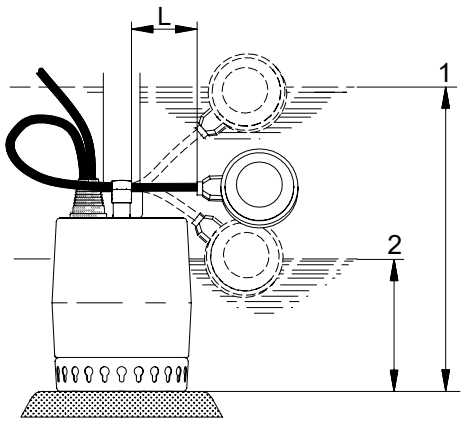


Level switches

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-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.

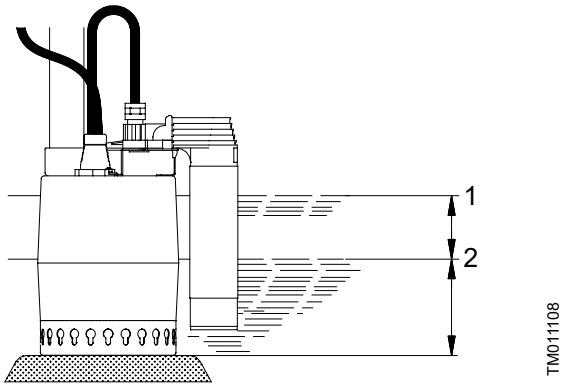


Start/stop levels at min. and max. cable lengths, UNILIFT

Pump type	Cable length		Cable length	
	Start [mm]	Stop [mm]	Start [mm]	Stop [mm]
UNILIFT KP 150 A UNILIFT KP 250 A	290	140	335	100
UNILIFT KP 350 A	300	150	345	110

UNILIFT KP AV with vertical level switch

For pumps with vertical level switch, the difference in level between start and stop is not adjustable.



Start/stop levels for UNILIFT KP AV

Pump type	Vertical level switch	
	Start [mm]	Stop [mm]
UNILIFT KP 150 AV UNILIFT KP 250 AV	180	100
UNILIFT KP 350 AV	190	110

Level switch water temperature: 0-50 °C

Accessories

Product number	Description
15211	Non-return valve
99369644	LC231 (1 pump) without float switch
99369650	LC231 (2 pump controller) without float switch
91427145	Float switch M2 with 5 m cable

UNILIFT AP12



TM079223

UNILIFT AP12 is a submersible pump designed for pumping drainage water or higher flows for effluent applications. The pump allows bypass of larger particles up to 12 mm. The pump has a riser pipe and cooling jacket for continuous cooling of the motor by the pumped liquid and long-life deep groove greased-for-life ball bearings. The pump is ready for use as it is fitted with a carrying handle and is supplied with a 10 m mains cable. The mains cable has a plug with a glass-sealing compound in the socket to prevent humidity from entering the stator windings.

The pump is suitable for permanent installations or it can be used as a portable pump. The pump is available with the following options:

- with a float 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 a float switch can also be used for manual on/off operation. In this case, the float switch must be secured in an upward-facing position.

Applications

The pump is suitable for the following applications:

- pumping in drainage collecting wells, pits inside buildings
- pumping stations and small domestic treatment plants outside of buildings
- industrial and commercial use, for example, evaporative cooling systems
- various applications within agriculture, horticulture, dairies, breweries and the process industry
- emergencies, for example, flooding events inside and outside of buildings, and to pump (waste)water out of tanks, ponds or swimming pools.

Features and benefits of UNILIFT AP

UNILIFT AP has many beneficial features:

- robust and sustainable stainless-steel design for all hydraulic parts
- service friendly to extend pump lifetime – quick access to replace wear parts, for example, cable, float switch, shaft sealing, impeller and rotor.
- cooling jacket that allows the pump to operate continuously while partially submerged
- included motor protection that reacts to blockage
- longitudinal, water-tight cables and glass-sealed cable socket on the pump that prevents water from entering the motor at damaged cables and enables easy replacement
- highly reliable mechanical shaft seal with an oil chamber that protects the seals and motor.
- Range for frequency drive operation

Type key

Example:

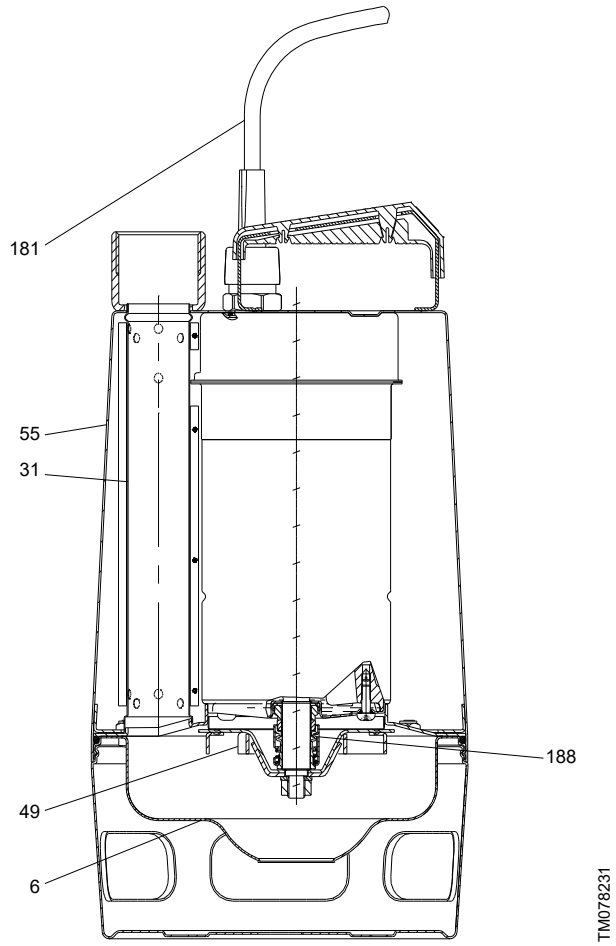
UNILIFT AP 35.B.50.08.A1V

	Description
UNILIFT AP	Type range
12 35 50	Maximum solids size
Blank - AP pump B - AP Basic	Pump type
40 50	Nominal diameter of the discharge port [mm]
	Power output (P2/100[W])
A - automatic operation (with float switch) Blank - manual operation (without float switch)	Level control
1 - single-phase 3 - three-phase	Motor
V - vortex impeller	Impeller

Approvals and markings

Approvals			
CE	TM075405	EAC	TM074611
	98507008_RCM_MARK		TM075835
TÜVRheinland CERTIFIED	99853271	DVE	TM074619

Construction of UNILIFT AP12



Materials

Pos.	Component	Material	DIN W. - Nr.	AISI
6	Pump housing	Stainless steel	1.4301	304
31	Riser pipe	Stainless steel	1.4301	304
49	Impeller	Stainless steel	1.4301	304
55	Pump sleeve	Stainless steel	1.4401	316
-	Pump shaft - wet end	Stainless steel	1.4301	304
188	Bearings	Heavy-duty pre-lubricated ball bearings		
-	O-rings	NBR rubber		
-	Screws	Stainless steel	1.4301	304
181	Oil	Shell Ondina 15, non-toxic		

Cooling jacket

The pump has a riser pipe and a cooling jacket for continuous cooling of the motor by the pumped liquid.

Discharge port

All UNILIFT AP12 pumps have a threaded vertical discharge port.

- UNILIFT AP12.40: Rp 1 1/2
- UNILIFT AP12.50: Rp 2.

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 onto 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 prevented from entering 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 has a socket and plug connection for quick and easy dismantling.

Motor

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

Enclosure class	IP68
Insulation class	F (155 °C)
Cable type	H07RN(8)-F

Single-phase motors have built-in thermal protection.

Manufactured according to EN 60335-2-41.

Shaft and bearings

The stainless-steel shaft rotates in maintenance-free pre-lubricated 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 effects from solid particles and to minimise power consumption.

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 silicone carbide.

Pumped liquids

The pumps are suitable for the following liquids:

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

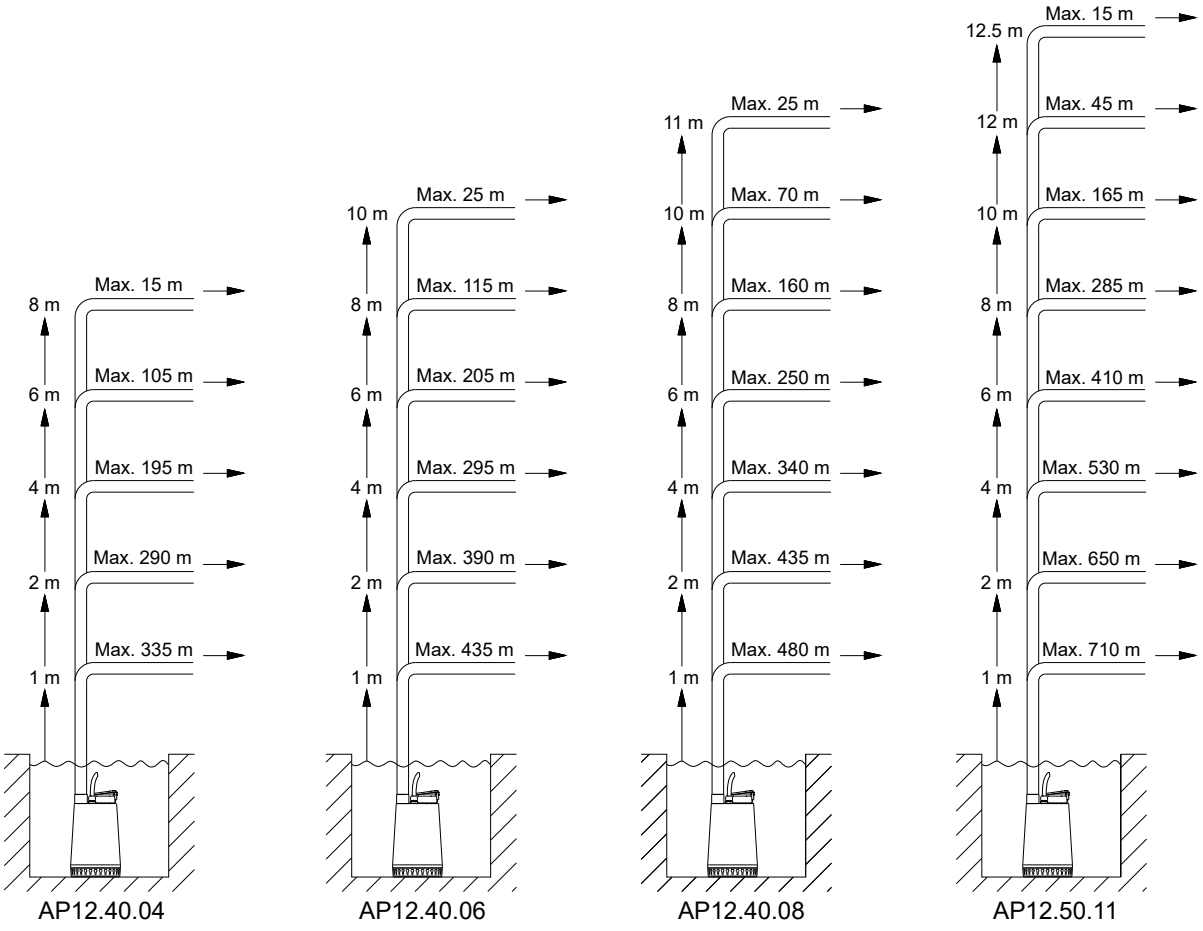
The open-impeller design ensures free passage of solids up to 12 mm.

Level switches and control boxes

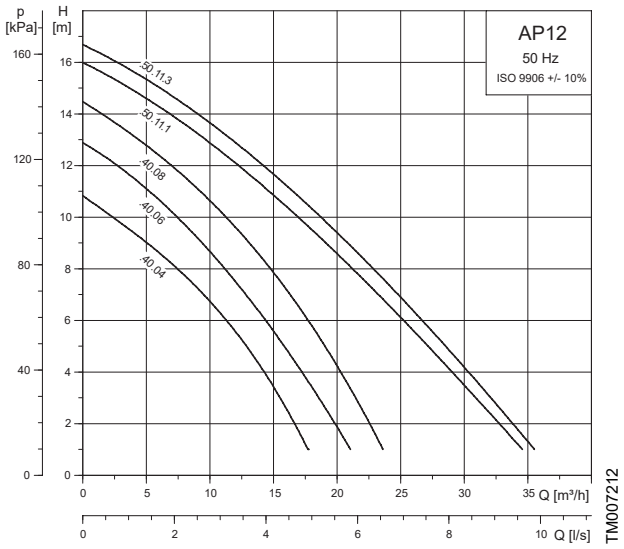
Level controllers and switches are delivered with the product and are directly connected to the single-phase motors. For three-phase motors, level switch solutions are available with control boxes in between the pump and the level switch. The cable length for the pump and level switch is 10 m. A power supply cable of 0.65 m is connected to the box. The level controller box incorporates a contactor and a motor protection unit. The motor protection unit is preset with the nominal current of the pump.

Sizing guide

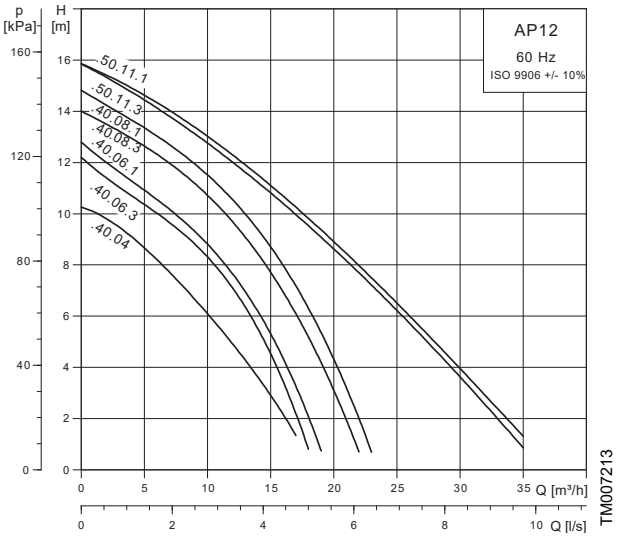
The quick sizing chart below gives an approximate overview of heights and discharge pipe lengths with an inner pipe diameter of 40 mm and a flow of 3.2 m^3/h for AP12.40, so that a self cleaning velocity of v=0, 7 m/s is covered. The overview is only intended as a guide. Grundfos is not liable for installations that do not comply with the overview. Pressure loss of a non-return valve, 4x90° bends and a gate valve is calculated. The vertical height of the discharge pipe must be measured from the pump stop level. For more flow requirements a calculation is needed.



Performance curves UNILIFT AP12 50 Hz



Performance curves UNILIFT AP12 60 Hz



Product range UNILIFT AP12 50 Hz

Pump type	Product number(s)	Voltage [V]	Plug type	Control box with 0.65 m supply cable	Float switch type	Cable length [m]	Cable type	Net weight [kg]
AP12.40.04.1	96011016	1 x 230	SCHUKO	-	-	10	H07RN8-F 3G1	12.1
AP12.40.04.A1	96011017	1 x 230	SCHUKO	-	Cable guided	5	H07RN8-F 3G1	11.7
AP12.40.04.A1	96011018	1 x 230	SCHUKO	-	Cable guided	10	H07RN8-F 3G1	12.3
AP12.40.06.1	96001720	1 x 230	SCHUKO	-	-	10	H07RN8-F 3G1	12.6
AP12.40.06.A1	96001735	1 x 230	SCHUKO	-	Cable guided	5	H07RN8-F 3G1	12.2
AP12.40.06.A1	96010979	1 x 230	SCHUKO	-	Cable guided	10	H07RN8-F 3G1	12.8
AP12.40.08.1	96001869	1 x 230	SCHUKO	-	-	10	H07RN8-F 3G1	13.7
AP12.40.08.A1	96001798	1 x 230	SCHUKO	-	Cable guided	5	H07RN8-F 3G1	13.3
AP12.40.08.A1	96010980	1 x 230	SCHUKO	-	Cable guided	10	H07RN8-F 3G1	13.9
AP12.50.11.1	96001958	1 x 230	SCHUKO	-	-	10	H07RN8-F 3G1	15.6
AP12.50.11.A1	96001965	1 x 230	SCHUKO	-	Cable guided	5	H07RN8-F 3G1	15.2
AP12.50.11.A1	96010981	1 x 230	SCHUKO	-	Cable guided	10	H07RN8-F 3G1	15.8
AP12.40.04.1	96011014	1 x 230	No plug	-	-	10	H07RN8-F 3G1	12.0
AP12.40.04.A1	96011015	1 x 230	No plug	-	Cable guided	5	H07RN8-F 3G1	11.6
AP12.40.04.A1	96404179	1 x 230	No plug	-	Cable guided	10	H07RN8-F 3G1	12.2
AP12.40.04.3	96011024	3 x 400	No plug	-	-	10	H07RN8-F 4G1	12.4
AP12.40.04.3	96011030	3 x 230	No plug	-	-	10	H07RN8-F 4G1	12.4
AP12.40.04.A3	96011025	3 x 400	No plug	✓	Cable guided	10	H07RN8-F 4G1	13.6
AP12.40.06.1	96001732	1 x 230	No plug	-	-	10	H07RN8-F 3G1	12.5
AP12.40.06.A1	96404180	1 x 230	No plug	-	Cable guided	10	H07RN8-F 3G1	12.7
AP12.40.06.3	96001652	3 x 400	No plug	-	-	10	H07RN8-F 4G1	12.9
AP12.40.06.3	96010628	3 x 230	No plug	-	-	10	H07RN8-F 4G1	12.9
AP12.40.06.A3	96010923	3 x 400	No plug	✓	Cable guided	10	H07RN8-F 4G1	14.1
AP12.40.08.1	96001873	1 x 230	No plug	-	-	10	H07RN8-F 3G1	13.6
AP12.40.08.3	96001791	3 x 400	No plug	-	-	10	H07RN8-F 4G1	14.0
AP12.40.08.3	96010630	3 x 230	No plug	-	-	10	H07RN8-F 4G1	14.0
AP12.40.08.A3	96010925	3 x 400	No plug	✓	Cable guided	10	H07RN8-F 4G1	14.2
AP12.40.08.A3	96010958	3 x 230	No plug	✓	Cable guided	10	H07RN8-F 4G1	14.2
AP12.50.11.1	96001962	1 x 230	No plug	-	-	10	H07RN8-F 3G1	15.5
AP12.50.11.A1	96404182	1 x 230	No plug	-	Cable guided	10	H07RN8-F 3G1	15.7
AP12.50.11.3	96010634	3 x 230	No plug	-	-	10	H07RN8-F 4G1	15.9
AP12.50.11.A3	96010927	3 x 400	No plug	✓	Cable guided	10	H07RN8-F 4G1	17.1

Pump type	Product number(s)	Voltage [V]	Plug type	Control box with 0.65 m supply cable	Float switch type	Cable length [m]	Cable type	Net weight [kg]
AP12.50.11.A3	96010959	3 x 230	No plug	✓	Cable guided	10	H07RN8-F 4G1	17.1
AP12.50.11.3	96001975	3 x 400	No plug	-	-	10	H07RN8-F 4G1	15.9
AP12.40.04.A3	96023871	3 x 400	CEE	✓	Cable guided	10	H07RN8-F 4G1	12.92
AP12.40.06.A3	96023872	3 x 400	CEE	✓	Cable guided	10	H07RN8-F 4G1	14.28
AP12.40.08.A3	96023873	3 x 400	CEE	✓	Cable guided	10	H07RN8-F 4G1	16.18
AP12.40.08.A1	96404181	1 x 230	No plug	-	Cable guided	10	H07RN8-F 3G1	13.8
AP12.50.11.A3	96023874	3 x 400	CEE	✓	Cable guided	10	H07RN8-F 4G1	17.5
AP12.40.04.1	96011032	1 x 230	Australia	-	-	10	H07RN-F 3G1	11.6
AP12.40.04.A1	96023914	1 x 230	Australia	-	Cable guided	10	H07RN-F 3G1	10.7
AP12.40.06.1	96001729	1 x 230	Australia	-	-	10	H07RN-F 3G1	12.0
AP12.40.06.A1	96023929	1 x 230	Australia	-	Cable guided	10	H07RN-F 3G1	12.8
AP12.40.08.1	96001872	1 x 230	Australia	-	-	10	H07RN-F 3G1	13.2
AP12.40.08.A1	96023930	1 x 230	Australia	-	Cable guided	10	H07RN-F 3G1	13.9
AP12.50.11.1	96001961	1 x 230	Australia	-	-	10	H07RN-F 3G1	15.7
AP12.50.11.A1	96023931	1 x 230	Australia	-	Cable guided	10	H07RN-F 3G1	15.6

Product range UNILIFT AP12 50 Hz for frequency drive operation

Pump type	Product number(s)	Voltage [V]	Plug type	Control box with 0.65 m supply cable	Float switch type	Cable length [m]	Cable type	Net weight [kg]
UNILIFT AP12.40.06.3	92747392	3 x 400	No plug	-	-	10	H07RN8-F 4G1	12.9
UNILIFT AP12.40.08.3	92747394	3 x 400	No plug	-	-	10	H07RN8-F 4G1	14.0
UNILIFT AP12.50.11.3	98492741	3 x 400	No plug	-	-	10	H07RN8-F 4G1	15.9

Product range UNILIFT AP12 60 Hz

Pump type	Product number	Voltage [V]	Plug type	Control box with 0.65 m supply cable	Float switch type	Cable length [m]	Cable type	Net weight [kg]
AP12.40.04.1	96023923	1 x 220 - 230	No plug	-	-	10	H07RN8-F 3G1	12.0
AP12.40.04.A1	96023921	1 x 220 - 230	No plug	-	Cable guided	5	H07RN8-F 3G1	11.4
AP12.40.04.A1	96023922	1 x 220 - 230	No plug	-	Cable guided	10	H07RN8-F 3G1	11.6
AP12.40.04.3	96011027	3 x 200 - 220	No plug	-	-	10	H07RN8-F 4G1	12.4
AP12.40.04.3	96011029	3 x 380 - 440	No plug	-	-	10	H07RN8-F 4G1	12.4
AP12.40.04.A3	96011042	3 x 380 - 440	No plug	✓	Cable guided	10	H07RN8-F 4G1	13.6
AP12.40.06.1	96010659	1 x 220 - 230	No plug	-	-	10	H07RN8-F 3G1	12.5
AP12.40.06.3	96010895	3 x 200 - 220	No plug	-	-	10	H07RN8-F 4G1	12.9
AP12.40.06.3	96001776	3 x 380 - 440	No plug	-	-	10	H07RN8-F 4G1	12.9
AP12.40.06.A3	96010938	3 x 380 - 440	No plug	✓	Cable guided	10	H07RN8-F 4G1	14.1
AP12.40.08.1	96010665	1 x 220 - 230	No plug	-	-	10	H07RN8-F 3G1	13.6
AP12.40.08.A1	98602896	1 x 220 - 230	No plug	-	Cable guided	5	H07RN8-F 3G1	13.8
AP12.40.08.3	96010896	3 x 200 - 220	No plug	-	-	10	H07RN8-F 4G1	14.0
AP12.40.08.3	96010641	3 x 380 - 440	No plug	-	-	10	H07RN8-F 4G1	14.0
AP12.40.08.A3	96010941	3 x 380 - 440	No plug	✓	Cable guided	10	H07RN8-F 4G1	15.2
AP12.40.08.A3	96010940	3 x 200 - 220	No plug	✓	Cable guided	10	H07RN8-F 4G1	15.2
AP12.50.11.1	96010682	1 x 220 - 230	No plug	-	-	10	H07RN8-F 3G1	15.5
AP12.50.11.A1	96010678	1 x 220 - 230	No plug	-	Cable guided	5	H07RN8-F 3G1	15.7
AP12.50.11.3	96010897	3 x 200 - 220	No plug	-	-	10	H07RN8-F 4G1	15.9
AP12.50.11.3	96010642	3 x 380 - 440	No plug	-	-	10	H07RN8-F 4G1	15.9
AP12.50.11.A3	96010944	3 x 380 - 440	No plug	✓	Cable guided	10	H07RN8-F 4G1	17.1
AP12.50.11.A3	96010943	3 x 200 - 220	No plug	✓	Cable guided	10	H07RN8-F 4G1	17.1

Technical data

Electrical data

UNILIFT AP12 50 Hz

Pump type	Voltage[V]	P1 [kW]	P2 [kW]	I_n[A]	I_{start}[A]	Speed [rpm]
AP12.40.04.1 AP12.40.04.A1	1 x 230	0.7	0.4	3.0	12.5	2770
AP12.40.04.3 AP12.40.04.A3	3 x 230	0.7	0.4	2.3	9.5	2800
AP12.40.04.3 AP12.40.04.A3	3 x 400	0.7	0.4	1.2	5.5	2800
AP12.40.06.1 AP12.40.06.A1	1 x 230	0.9	0.6	4.4	17.3	2785
AP12.40.06.3 AP12.40.06.A3	3 x 230	0.9	0.6	3.0	15.0	2815
AP12.40.06.3 AP12.40.06.A3	3 x 400	0.9	0.6	1.6	8.1	2815
AP12.40.08.1 AP12.40.08.A1	1 x 230	1.3	0.8	5.9	23.0	2780
AP12.40.08.3 AP12.40.08.A3	3 x 230	1.2	0.8	2.8	18.8	2810
AP12.40.08.3 AP12.40.08.A3	3 x 400	1.2	0.8	2.1	10.8	2810
AP12.50.11.1 AP12.50.11.A1	1 x 230	1.7	1.1	8.5	29.9	2760
AP12.50.11.3 AP12.50.11.A3	3 x 230	1.9	1.2	5.2	29.9	2785
AP12.50.11.3 AP12.50.11.A3	3 x 400	1.9	1.2	3.2	16.2	2785

UNILIFT AP12 60 Hz

Pump type	Voltage[V]	P1 [kW]	P2 [kW]	I_n[A]	I_{start}[A]	Speed [rpm]
AP12.40.04.1 AP12.40.04.A1	1 x 220-230	0.8	0.5	3.7	13.9	3350
AP12.40.04.3 AP12.40.04.A3	3 x 200-220	0.8	0.4	2.4	9.8	3350
AP12.40.04.3 AP12.40.04.A3	3 x 380-440	0.8	0.4	1.5	4.7	3350
AP12.40.06.1 AP12.40.06.A1	1 x 220-230	1.0	0.6	4.6	20.9	3350
AP12.40.06.3 AP12.40.06.A3	3 x 200-220	1.0	0.6	3.2	14.6	3300
AP12.40.06.3 AP12.40.06.A3	3 x 380-440	1.0	0.6	1.6	7.0	3370
AP12.40.08.1 AP12.40.08.A1	1 x 220-230	1.2	0.8	5.8	30.9	3400
AP12.40.08.3 AP12.40.08.A3	3 x 200-220	1.2	0.8	3.9	19.9	3350
AP12.40.08.3 AP12.40.08.A3	3 x 380-440	1.2	0.8	1.8	9.2	3400
AP12.50.11.1 AP12.50.11.A1	1 x 220-230	1.8	1.3	9.0	39.2	3350
AP12.50.11.3 AP12.50.11.A3	3 x 200-220	1.8	1.3	5.9	28.6	3350
AP12.50.11.3 AP12.50.11.A3	3 x 380-440	1.8	1.3	2.7	13.8	3350

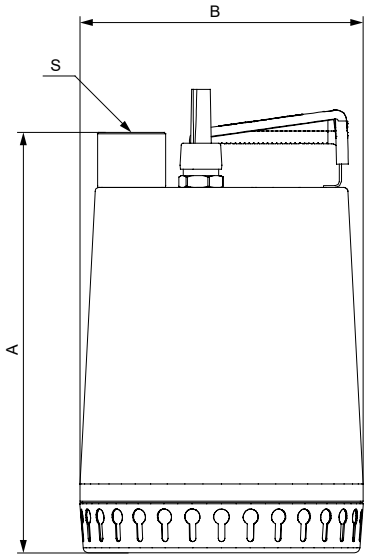
Operating conditions

Maximum head	18 m
Maximum flow rate	32 m^3/h
Liquid temperature range	0-55 °C
Liquid pH range	4-10
Liquid requirements	Clean, non-aggressive water and grey wastewater
Maximum ambient temperature	55 °C
Maximum particle size	12 mm
Maximum submersion depth	2 m with 5 m cable 7 m with 10 m cable
Automatic float switch	Type name extension A
Special versions on request	Other voltages and/or frequencies

1 For UNILIFT AP 12, AP 35 and AP 50 without float switch, where the media cannot touch the cable and the plug: up to + 70 °C every 30 min. for time periods below 3 min.

2 IEC 60335-2-41 requires 3 m cable length outside of water.

Dimensions



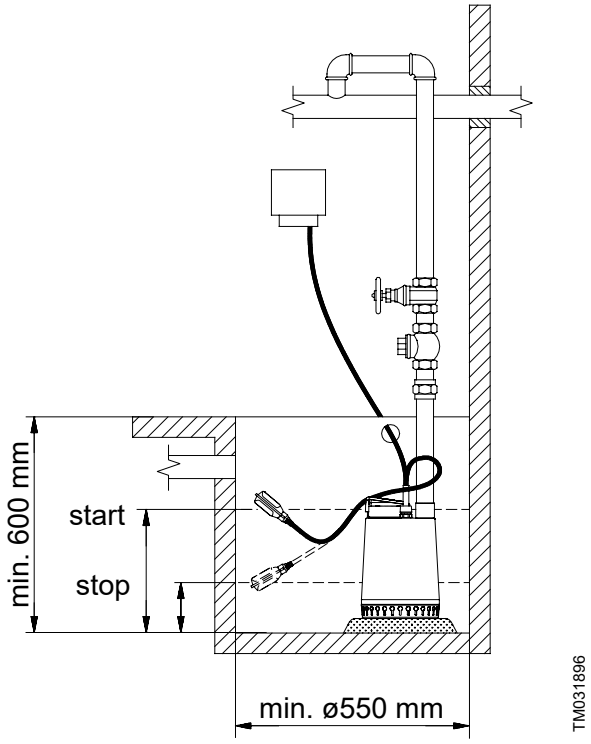
TM005523

UNILIFT AP12

Pump type	A [mm]	B [mm]	S [in]
AP12.40.04	321	216	Rp 1 1/2
AP12.40.06	321	216	Rp 1 1/2
AP12.40.08	346	216	Rp 1 1/2
AP12.50.11	357	241	Rp 2

Installation

Adjustment of cable length for float switch



One-pump installation with 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.

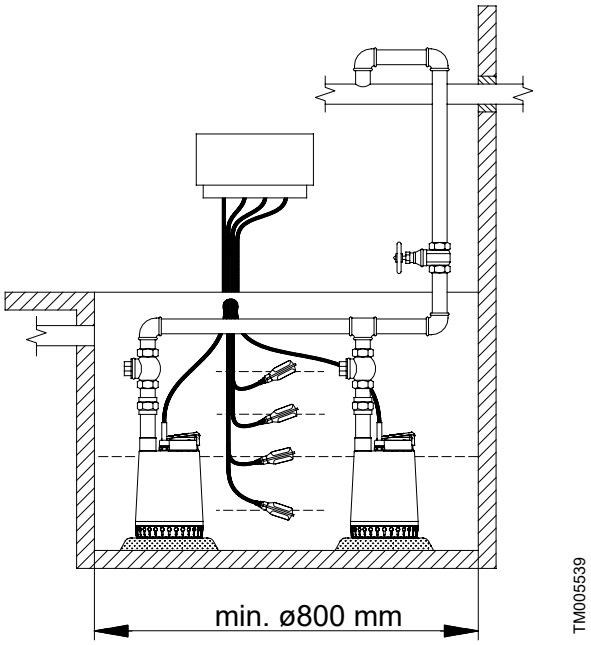
- Increasing the free cable length results in fewer starts/stops and a large difference in level.
- Reducing the free cable length results in more starts/stops and a small difference in level.

In order for the float switch to start and stop the pump, the free cable length must be at minimum 100 mm and maximum 250 mm.

Pump type	Cable length min. 100 mm		Cable length max. 250 mm	
	Start [mm]	Stop [mm]	Start [mm]	Stop [mm] *
UNILIFT AP12.40	360	230	370	100
UNILIFT AP12.50	410	250	380	110

* Minimum stop level during continuous operation or when using an external controller.

Two-pump installation



Two-pump installation with four float switches

UNILIFT AP pumps can be used for parallel installation together with a controller. The example shows an installation with four float switches. The pumps are controlled by the liquid level in the tank.

When the liquid lifts the second float switch from the bottom, the first pump will start. If the liquid rises faster than one pump can manage, the third float switch rises and starts the second pump.

When the bottom float switch is no longer lifted by the liquid, the settable stop delay will set in and both pumps will stop. When the top float switch is lifted by the liquid, the high-level alarm will activate.

Accessories

Product number	Description
99369644	LC231 (1 pump) without float switch
99369650	LC231 (2 pump controller) without float switch
91427145	Float switch M2 with 5m cable

5. Effluent and sewage

UNILIFT AP35



TM079224

UNILIFT AP35 is a single-stage, submersible pump designed for pumping drainage water and effluent. The pump is able to handle particles up to 35 mm.

The pump is suitable for permanent installation or can be used as a portable pump. The pump is available with the following options:

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

Pumps that are fitted with a float switch can also be used for manual on/off operation. In this case, the float switch must be secured in an upward-facing position.

Applications

The pump is suitable for the following applications:

- groundwater lowering
- pumping in drainage collecting wells
- pumping in surface water collecting wells with inflow from, for example, roof gutters, shafts and tunnels
- emptying of, for example, ponds and tanks
- pumping of fibre-containing wastewater from laundries and industries
- effluents from viaducts and underpasses
- pumping of effluents from septic and sludge-treating systems
- pumping of effluents from regular testing of fire fighting systems.

Features and benefits of UNILIFT AP

UNILIFT AP has many features:

- robust and sustainable stainless-steel design for all hydraulic parts
- service friendly to extend pump lifetime – quick access to replace wear parts like cable, float switch, shaft sealing, impeller and rotor
- cooling jacket allows the pump to operate continuously while partially submerged
- included motor protection that reacts to blockage
- longitudinal, water-tight cables and glass-sealed cable socket on the pump that blocks water entering the motor at damaged cables and allows easy replacement
- highly reliable mechanical shaft seal with an oil chamber that protects the seals and motor.

Type key

Example:

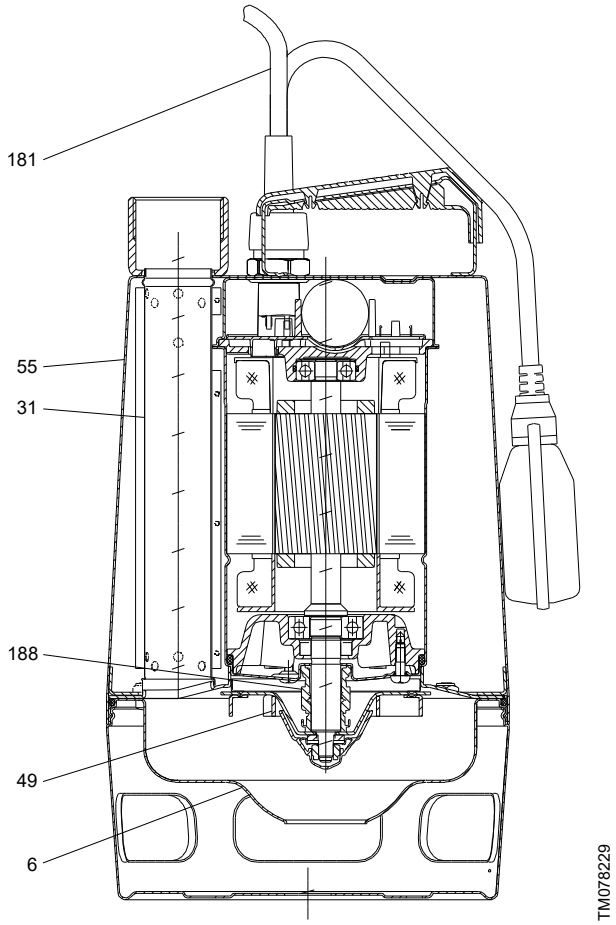
UNILIFT AP 35.B.50.08.A1V

	Description
UNILIFT AP	Type range
12 35 50	Maximum solids size
Blank - AP pump B - AP Basic	Pump type
40 50	Nominal diameter of the discharge port [mm]
	Power output (P2/100[W])
A - automatic operation (with float switch) Blank - manual operation (without float switch)	Level control
1 - single-phase 3 - three-phase	Motor
V - vortex impeller	Impeller

Approvals and markings

Approvals			
CE	TM075405	EAC	TM074611
RCM	98507008_RCM_MARK	KOSHA	TM075835
TÜVRheinland CERTIFIED	99853271	VDE	TM074619

Construction of UNILIFT AP35



Materials

Pos.	Component	Materials	DIN W. - Nr.	AISI
6	Pump housing	Stainless steel	1.4301	304
31	Riser pipe	Stainless steel	1.4301	304
49	Impeller	Stainless steel	1.4301	304
55	Pump sleeve	Stainless steel	1.4401	316
-	Pump shaft - wet end	Stainless steel	1.4301	304
188	Bearings	Heavy-duty pre-lubricated ball bearings		
-	O-rings	NBR rubber		
-	Screws	Stainless steel	1.4301	304
181	Cable	Neoprene		
-	Oil	Shell Odina 15, non-toxic		

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 onto 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 prevented from entering 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 has a socket and plug connection for quick and easy dismantling.

Discharge port

All UNILIFT AP35 pumps have a threaded Rp 1 1/2 vertical discharge port.

All UNILIFT AP35B pumps have a threaded R 2 horizontal discharge port.

Motor

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

Enclosure class	IP68
Insulation class	F (155 °C)
Cable type	H07RN(8)-F

Single-phase motors have built-in thermal protection.

Manufactured according to EN 60335-2-41.

Shaft and bearings

The stainless-steel shaft rotates in maintenance-free pre-lubricated 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.

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 silicone carbide.

Pumped liquids

The pumps are suitable for the below liquids:

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

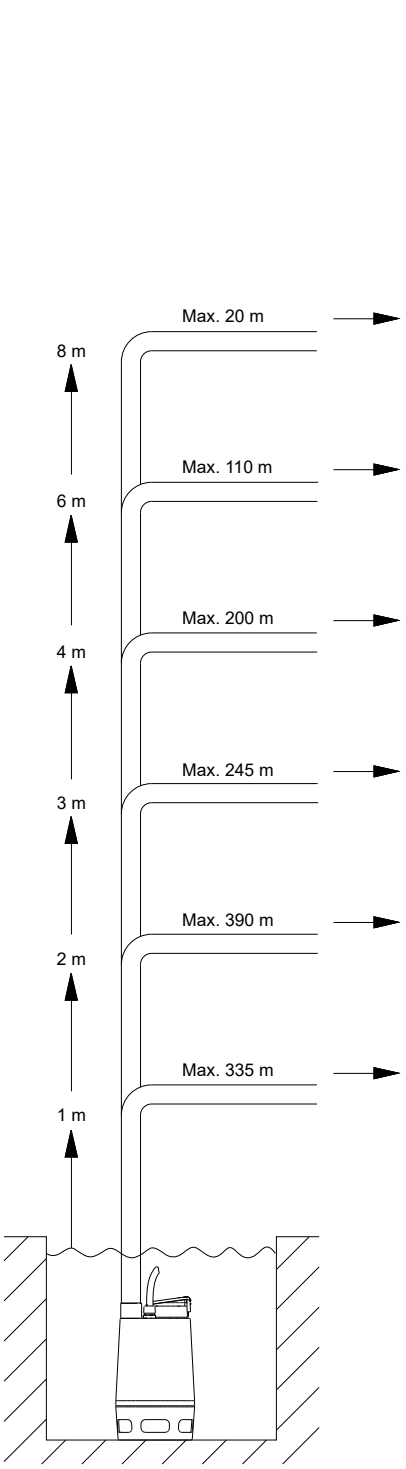
The open-impeller design ensures free passage of solids up to 35 mm.

Level switches and control boxes

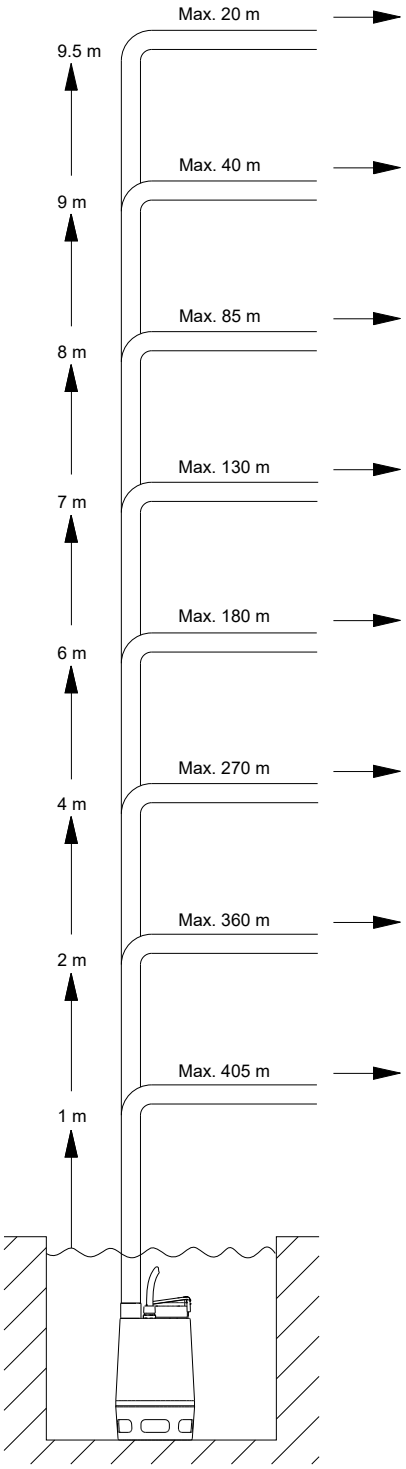
Level controllers and switches are delivered with the product and are directly connected to the single-phase motors. For three-phase motors, level switch solutions are available with control boxes in between the pump and the level switch. The cable length for the pump and level switch is 10 m. A power supply cable of 0.65 m is connected to the box. The level controller box incorporates a contactor and a motor protection unit. The motor protection unit is preset with the nominal current of the pump.

Sizing guide

The quick sizing chart below gives an approximate overview of heights and discharge pipe lengths with an inner pipe diameter of 40 mm and flow of 3.2 m^3/h, so that a self-cleaning velocity of v=0, 7 m/s is covered. The overview is only intended as a guide. Grundfos is not liable for installations that do not comply with the overview. Pressure loss of a non-return valve and a gate valve is calculated. The vertical height of the discharge pipe must be measured from the pump stop level. For more flow requirements a calculation is needed.



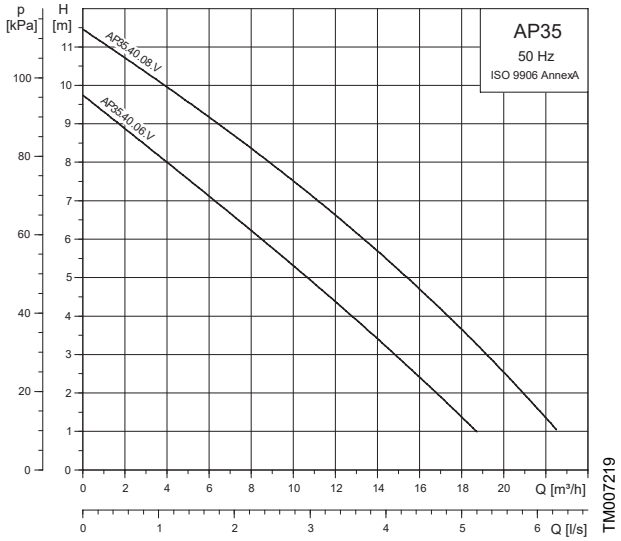
AP35.40.06



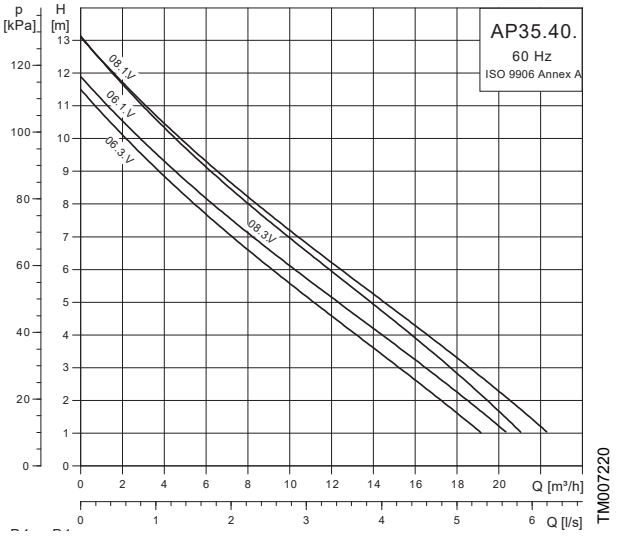
AP35.40.08

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Performance curves UNILIFT AP35 50 Hz



Performance curves UNILIFT AP35 60 Hz



Product range UNILIFT AP35 50 Hz

Pump type	Product number	Voltage[V]	Plug type	Control box with 0.65 m supply cable	Float switch type	Cable length[m]	Cable type	Net weight [kg/h]
AP35.40.06.1V	96001796	1 x 230	SCHUKO	-	-	10	H07RN8-F 3G1	13.1
AP35.40.06.A1V	96001777	1 x 230	SCHUKO	-	Cable guided	5	H07RN8-F 3G1	12.7
AP35.40.06.A1V	96010982	1 x 230	SCHUKO	-	Cable guided	10	H07RN8-F 3G1	13.3
AP35.40.08.1V	96001672	1 x 230	SCHUKO	-	-	10	H07RN8-F 3G1	13.7
AP35.40.08.A1V	96001897	1 x 230	SCHUKO	-	Cable guided	5	H07RN8-F 3G1	13.3
AP35.40.08.A1V	96010983	1 x 230	SCHUKO	-	Cable guided	10	H07RN8-F 3G1	13.9
AP35.40.06.1V	96001808	1 x 230	No plug	-	-	10	H07RN8-F 3G1	13.0
AP35.40.06.A1V	96404183	1 x 230	No plug	-	Cable guided	10	H07RN8-F 3G1	13.2
AP35.40.06.3V	96000169	3 x 400	No plug	-	-	10	H07RN8-F 4G1	13.4
AP35.40.06.3V	96010629	3 x 230	No plug	-	-	10	H07RN8-F 4G1	13.4
AP35.40.06.A3V	96010929	3 x 400	No plug	✓	Cable guided	10	H07RN8-F 4G1	14.6
AP35.40.06.A3V	96010960	3 x 230	No plug	✓	Cable guided	10	H07RN8-F 4G1	14.6
AP35.40.08.1V	96001894	1 x 230	No plug	-	-	10	H07RN8-F 3G1	13.5
AP35.40.08.A1V	96404184	1 x 230	No plug	-	Cable guided	10	H07RN8-F 3G1	13.7
AP35.40.08.3V	96001718	3 x 400	No plug	-	-	10	H07RN8-F 4G1	13.9
AP35.40.08.3V	96010631	3 x 230	No plug	-	-	10	H07RN8-F 4G1	13.9
AP35.40.08.A3V	96010931	3 x 400	No plug	✓	Cable guided	10	H07RN8-F 4G1	15.1
AP35.40.08.A3V	96010961	3 x 230	No plug	✓	Cable guided	10	H07RN8-F 4G1	15.1
AP35.40.06.A3V	96023875	3 x 400	CEE	✓	Cable guided	10	H07RN8-F 4G1	15.0
AP35.40.08.A3V	96023876	3 x 400	CEE	✓	Cable guided	10	H07RN8-F 4G1	15.4
AP35.40.06.1V	96001805	1 x 230	Australia	-	-	10	H07RN-F 3G1	13.1
AP35.40.06.A1V	96023932	1 x 230	Australia	-	Cable guided	10	H07RN-F 3G1	11.9
AP35.40.08.A1V	96023933	1 x 230	Australia	-	Cable guided	10	H07RN-F 3G1	13.7

Product range UNILIFT AP35 60 Hz

Pump type	Product number	Voltage[V]	Plug type	Control box with 0.65 m supply cable	Float switch type	Cable length [m]	Cable type	Net weight [kg]
AP35.40.06.1V	96010671	1 x 220-230	No plug	-	-	10	H07RN8-F 3G1	13.0
AP35.40.06.A1V	96010666	1 x 220-230	No plug	-	Cable guided	5	H07RN8-F 3G1	12.6
AP35.40.06.3V	96010643	3 x 380-440	No plug	-	-	10	H07RN8-F 4G1	13.4
AP35.40.06.3V	96010898	3 x 200-220	No plug	-	-	10	H07RN8-F 4G1	13.4
AP35.40.08.1V	96010677	1 x 220-230	No plug	-	-	10	H07RN8-F 3G1	13.5
AP35.40.08.3V	96010644	3 x 380-440	No plug	-	-	10	H07RN8-F 4G1	13.9
AP35.40.08.A1V	96010672	1 x 220-230	No plug	-	Cable guided	5	H07RN8-F 3G1	13.1

Technical data

Electrical data

UNILIFT AP35 50 Hz

Pump type	Voltage[V]	P_1 [kW]	P_2 [kW]	I_n[A]	I_{start}[A]	Speed [rpm]
AP35.40.06.1.V	1 x 230	0.9	0.6	4.0	17.3	2810
AP35.40.06.A1.V	1 x 230	0.9	0.6	4.0	17.3	2810
AP35.40.06.3.V	3 x 230	0.9	0.6	2.6	15.0	2830
AP35.40.06.A3.V	3 x 230	0.9	0.6	2.6	15.0	2830
AP35.40.06.3.V	3 x 400	0.9	0.6	1.6	8.1	2830
AP35.40.06.A3.V	3 x 400	0.9	0.6	1.6	8.1	2830
AP35.40.08.1.V	1 x 230	1.2	0.7	5.5	23.0	2795
AP35.40.08.A1.V	1 x 230	1.2	0.7	5.5	23.0	2795
AP35.40.08.3.V	3 x 230	1.1	0.7	3.1	18.8	2820
AP35.40.08.A3.V	3 x 230	1.1	0.7	3.1	18.8	2820
AP35.40.08.3.V	3 x 400	1.2	0.7	2.0	10.8	2820
AP35.40.08.A3.V	3 x 400	1.2	0.7	2.0	10.8	2820

UNILIFT AP35 60 Hz

Pump type	Voltage[V]	P_1 [kW]	P_2 [kW]	I_n[A]	I_{start}[A]	Speed [rpm]
AP35.40.06.1.V	1 x 220-230	1.2	0.7	5.2	22.0	3330
AP35.40.06.A1.V	1 x 220-230	1.2	0.7	5.2	22.0	3330
AP35.40.06.3.V	3 x 200-220	1.1	0.6	3.2	14.6	3300
AP35.40.06.3.V	3 x 380-440	1.1	0.7	1.4	7.0	3330
AP35.40.08.1.V	1 x 220-230	1.3	0.9	6.0	30.9	3300
AP35.40.08.A1.V	1 x 220-230	1.3	0.9	6.0	30.9	3300
AP35.40.08.3.V	3 x 380-440	1.4	0.9	2.2	9.2	3300

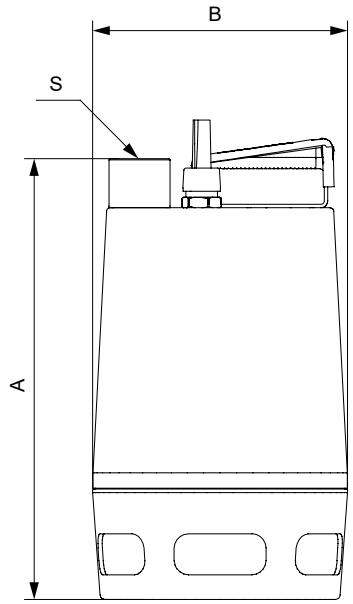
Operating conditions

Maximum head	13 m
Maximum flow rate	21.6 m^3/h
Liquid temperature range	0-55 °C
Liquid pH range	4-10
Liquid requirements	Clean, non-aggressive water and grey wastewater
Maximum ambient temperature	55 °C
Maximum particle size through the suction strainer	35 mm
Maximum installation depth	2 m with 5 m cable 7 m with 10 m cable
Automatic float switch	Type name extension A
Special versions on request	Other voltages and/or frequencies

1 For UNILIFT AP 12, AP 35 and AP 50 without float switch, where the media cannot touch the cable and the plug: up to + 70 °C every 30 min. for time periods below 3 min.

2 IEC 60335-2-41 requires 3 m cable length outside of water.

Dimensions



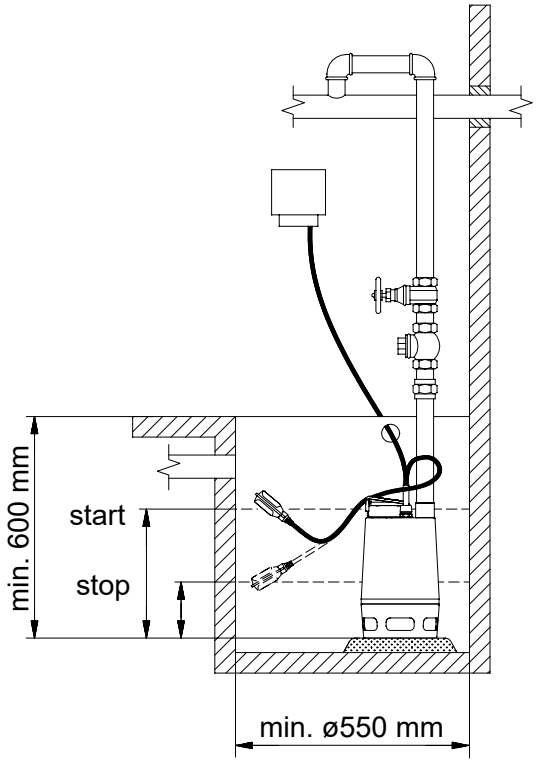
TM0055241

UNILIFT AP35

Pump type	A [mm]	B [mm]	S [in]
AP35.40.06	376	216	Rp 1 1/2
AP35.40.08	410	216	Rp 1 1/2

Installation

Adjustment of cable length for float switch



One-pump installation with 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.

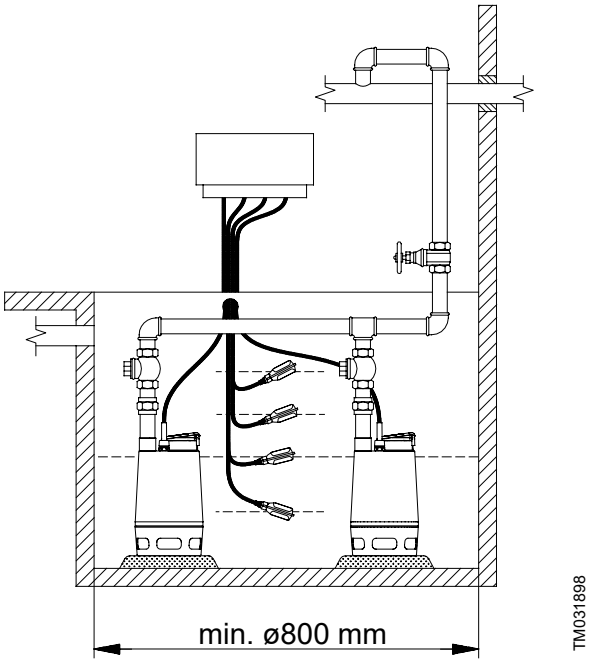
- Increasing the free cable length results in fewer starts/stops and a large difference in level.
- Reducing the free cable length results in more starts/stops and a small difference in level.

In order for the float switch to start and stop the pump, the free cable length must be minimum 100 mm and maximum 250 mm.

Pump type	Cable length min. 100 mm		Cable length max. 250 mm	
	Start [mm]	Stop [mm]	Start [mm]	Stop [mm] *
UNILIFT AP35	440	280	450	155

* Minimum stop level during continuous operation or when using an external controller.

Two-pump installation



Two-pump installation with four float switches

UNILIFT AP pumps can be used for parallel installation together with a controller. The example shows an installation with four float switches. The pumps are controlled by the liquid level in the tank.

When the liquid lifts the second float switch from the bottom, the first pump will start. If the liquid rises faster than one pump can manage, the third float switch rises and starts the second pump.

When the bottom float switch is no longer lifted by the liquid, the settable stop delay will set in andt both pumps be stop. When the top float switch is lifted up by the liquid, the high-level alarm will activate.

Accessories

Product number	Description
99369644	LC231 (1 pump) without float switch
99369650	LC231 (2 pump controller) without float switch
91427145	Float switch M2 with 5m cable

UNILIFT AP35B



TM079226

The UNILIFT AP35B pump is a single-stage, submersible pump designed for pumping effluent. The pump has a side outlet allowing easy adaptation to existing pipes including auto coupling systems. The pump is able to handle particles up to 35 mm.

The pump is suitable for permanent installation or can be used as a portable pump. The pump is available with the following options: :

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

Pumps that are fitted with a float switch can also be used for manual on/off operation. In this case, the float switch must be secured in an upward-facing position.

Applications

The pump is suitable for the following applications:

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

Features and benefits of UNILIFT AP35B

UNILIFT AP35B has many beneficial features:

- designed for more demanding effluent pumping
- high performance, high reliability and low maintenance
- UNILIFT AP35B is designed for effluent applications
- included motor protection on single phase pumps that reacts to blockage
- Service friendly – quick access to change wear parts like cable, shaft sealing, impeller and rotor.

Type key

Example:

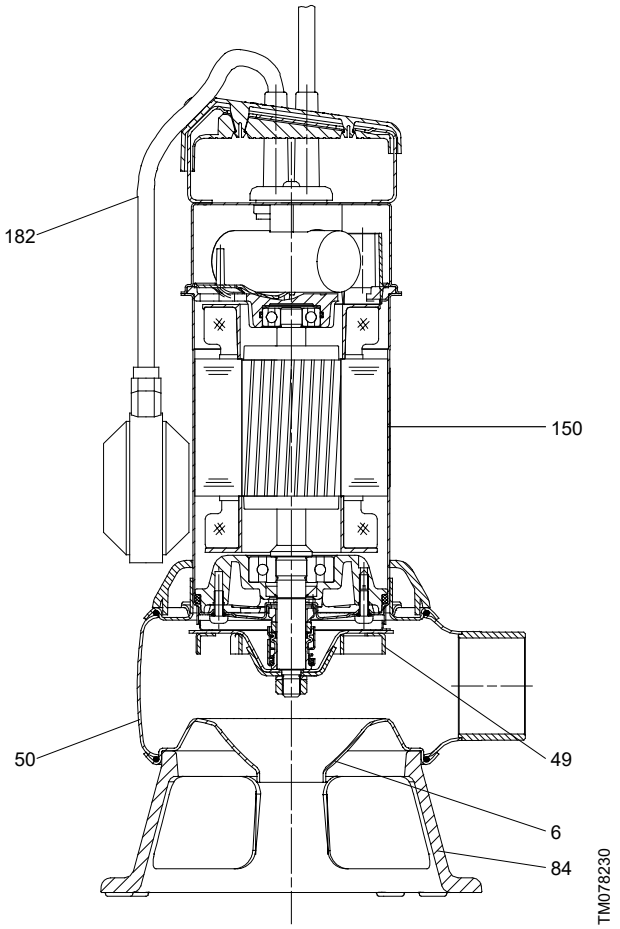
UNILIFT AP 35.B.50.08.A1V

	Description
UNILIFT AP	Type range
12 35 50	Maximum solids size
Blank - AP pump B - AP Basic	Pump type
40 50	Nominal diameter of the discharge port [mm]
	Power output (P2/100[W])
A - automatic operation (with float switch) Blank - manual operation (without float switch)	Level control
1 - single-phase 3 - three-phase	Motor
V - vortex impeller	Impeller

Approvals and markings

Approvals			
CE	TM075405	EAC	TM074611
	98507008_RCM_MARK		TM075835
TÜVRheinland CERTIFIED	99853271	VDE	TM074619

Construction of UNILIFT AP35B



Materials

Pos.	Component	Materials	DIN W. - Nr.	AISI
6	Pump housing	Stainless steel	1.4301	304
-	Riser pipe	Stainless steel	1.4301	304
49	Impeller	Stainless steel	1.4301	304
150	Motor unit complete	Parts in contact with liquid: Stainless steel	1.4401	316
-	Pump shaft - wet end	Stainless steel	1.4301	304
181	Motor cable	Neoprene		
-	O-rings	NBR rubber		
-	Spring	Stainless steel	1.4310	
50	Pump inlet	Stainless steel	1.4301	304
84	Ring stand	Composite		
-	Oil	Shell Odina 15, non-toxic		

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 onto 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 prevented from entering 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 has a socket and plug connection for quick and easy dismantling.

Discharge port

All UNILIFT AP35B pumps have a threaded R 2 horizontal discharge port.

Motor

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

Enclosure class	IP68
Insulation class	F (155 °C)
Cable type	H07RN(8)-F

Single-phase motors have built-in thermal protection.

Manufactured according to EN 60335-2-41.

Shaft and bearings

The stainless-steel shaft rotates in maintenance-free pre-lubricated 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.

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 silicone carbide.

Pumped liquids

The pumps are suitable for the below liquids:

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

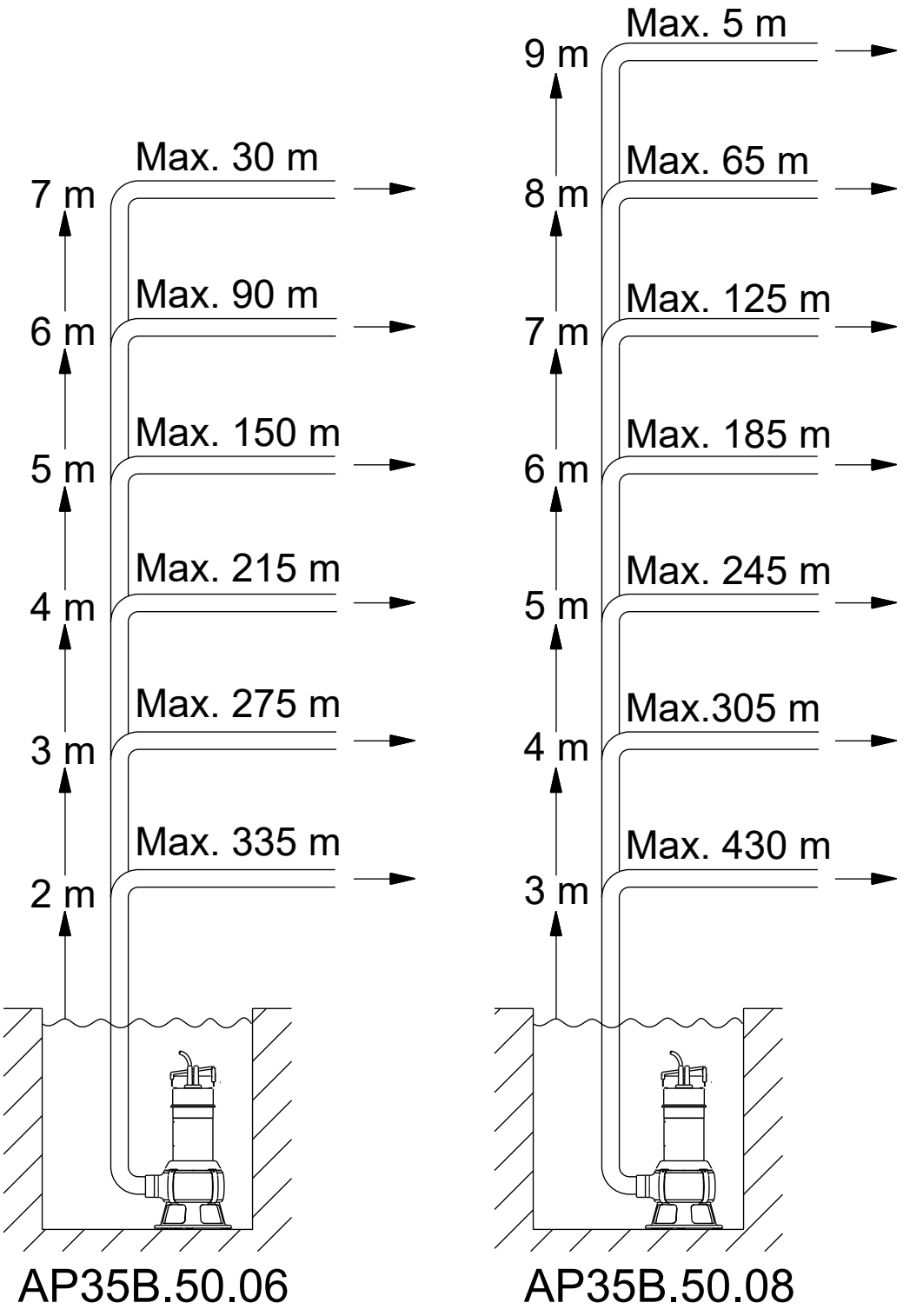
The open-impeller design ensures free passage of solids up to 35 mm.

Level switches

Level controllers and switches are delivered with the product and are directly connected to the single-phase motors.

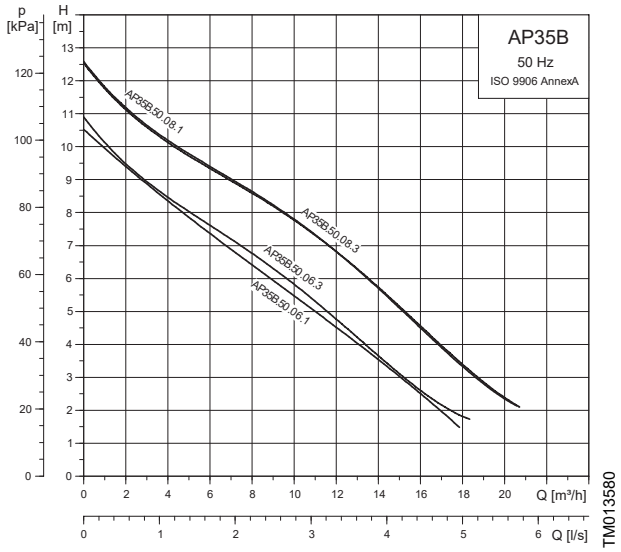
Sizing guide

The quick sizing chart below gives an approximate overview of heights and discharge pipe lengths with an inner pipe diameter of 50 mm and a flow of 5 m^3/h, so that a self-cleaning velocity of v=0, 7 m/s is covered. The overview is only intended as a guide. Grundfos is not liable for installations that do not comply with the overview. Pressure loss of a non-return valve and a gate valve is calculated. The vertical height of the discharge pipe must be measured from the pump stop level. For more flow requirements a calculation is needed.

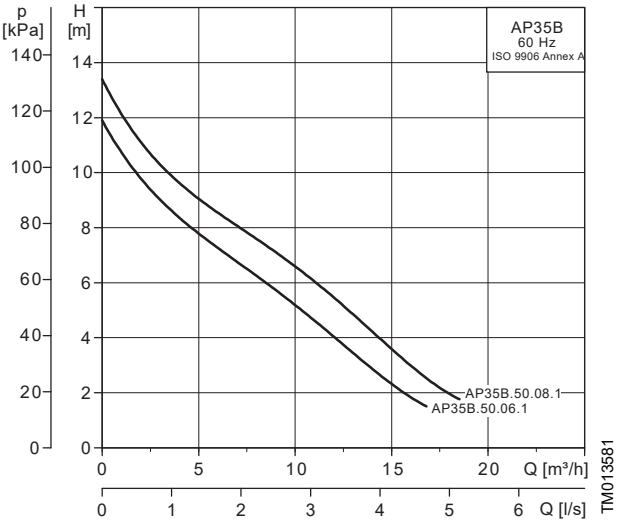


TM066589

Performance curves UNILIFT AP35B 50 Hz



Performance curves UNILIFT AP35B 60 Hz



Product range UNILIFT AP35B 50 Hz

Pump type	Product number	Voltage[V]	Plug type	Float switch type	Cable length [m]	Cable type	Net weight [kg]
AP35B.50.06.1V	96004563	1 x 230	SCHUKO	-	10	H07RN8-F 3G1	10.3
AP35B.50.06.A1V	96004562	1 x 230	SCHUKO	Cable guided	5	H07RN8-F 3G1	9.9
AP35B.50.06.A1V	96468356	1 x 230	SCHUKO	Cable guided	10	H07RN8-F 3G1	10.5
AP35B.50.08.1V	96004575	1 x 230	SCHUKO	-	10	H07RN8-F 3G1	10.8
AP35B.50.08.A1V	96004574	1 x 230	SCHUKO	Cable guided	5	H07RN8-F 3G1	10.4
AP35B.50.08.A1V	96468355	1 x 230	SCHUKO	Cable guided	10	H07RN8-F 3G1	11.0
AP35B.50.06.3V	96004565	3 x 400	No plug	-	5	H07RN8-F 4G1	9.9
AP35B.50.06.3V	96468190	3 x 400	No plug	-	10	H07RN8-F 4G1	10.5
AP35B.50.08.3V	96004577	3 x 400	No plug	-	5	H07RN8-F 4G1	10.5
AP35B.50.08.3V	96468193	3 x 400	No plug	-	10	H07RN8-F 4G1	11.1
AP35B.50.08.3V	96007152	3 x 230	No plug	-	5	H07RN8-F 4G1	10.5

Product range UNILIFT AP35B 60 Hz

Pump type	Product number	Voltage[V]	Plug type	Float switch type	Cable length [m	Cable type	Net weight [kg]
AP35B.50.06.1V	96004569	1 x 220-230	SCHUKO	-	10	H07RN8-F 3G1	10.2
AP35B.50.06.A1V	96004568	1 x 220-230	SCHUKO	Cable guided	5	H07RN8-F 3G1	9.8
AP35B.50.06.3V	96004571	3 x 200-220	No plug	-	5	H07RN8-F 4G1	9.9
AP35B.50.08.1V	96004581	1 x 220-230	SCHUKO	-	10	H07RN8-F 3G1	10.7
AP35B.50.08.A1V	96004580	1 x 220-230	SCHUKO	Cable guided	5	H07RN8-F 3G1	9.8
AP35B.50.08.3V	96004583	3 x 200-220	No plug	-	5	H07RN8-F 4G1	10.5

Technical data

Electrical data

UNILIFT AP35B 50 Hz

Pump type	Voltage[V]	P_1 [kW]	P_2 [kW]	I_n[A]	I_{start}[A]	Speed [rpm]
AP35B.50.06.1V	1 x 230	1.0	0.66	4.4	13.8	2810
AP35B.50.06.A1V	1 x 230	1.0	0.66	4.4	13.8	2810
AP35B.50.06.3V	3 x 400	1.0	0.63	1.55	8.0	2830
AP35B.50.08.1V	1 x 230	1.25	0.71	5.44	18.4	2795
AP35B.50.08.A1V	1 x 230	1.25	0.71	5.44	18.4	2795
AP35B.50.08.3V	3 x 230	1.25	0.78	3.52	18.8	2820
AP35B.50.08.3V	3 x 400	1.25	0.78	1.98	10.8	2820

UNILIFT AP35B 60 Hz

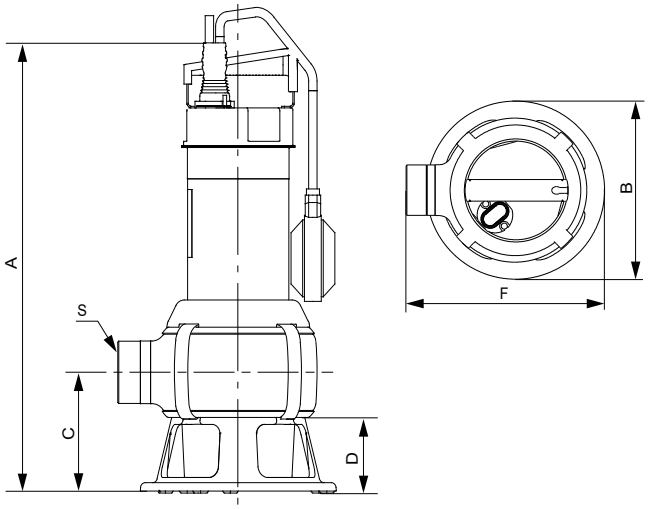
Pump type	Voltage[V]	P_1 [kW]	P_2 [kW]	I_n[A]	I_{start}[A]	Speed [rpm]
AP35B.50.06.1V	1 x 220-230	1.29	0.75	5.91	22.0	3330
AP35B.50.06.A1V	1 x 220-230	1.29	0.75	5.91	22.0	3330
AP35B.50.06.3V	3 x 200-220	1.21	0.66	3.71	4.39	3300
AP35B.50.08.1V	1 x 220-230	1.47	1.02	6.74	30.9	3300
AP35B.50.08.A1V	1 x 220-230	1.47	1.02	6.74	30.9	3300
AP35B.50.08.3V	3 x 200-220	1.48	0.95	4.50	4.87	3300

Operating conditions

Maximum head	13 m
Maximum flow rate	21.6 m^3/h
Liquid temperature range	0-40 °C
Liquid pH range	4-10
Liquid requirements	Clean, non-aggressive water and grey wastewater
Maximum ambient temperature	40 °C
Maximum particle size through the suction strainer	35 mm
Maximum installation depth	2 m with 5 m cable 7 m with 10 m cable
Automatic float switch	Type name extension A
Special versions on request	Other voltages and/or frequencies

1 IEC 60335-2-41 requires 3 m cable length outside of water.

Dimensions



TM034097

UNILIFT AP35B

Pump type	A [mm]	B [mm]	C [mm]	D [mm]	F [mm]	S [in]
AP35B.50.06	443	210	116	73	234	Rp 2
AP35B.50.08	468	210	116	73	234	Rp 2

Accessories

The following are recommended accessories for UNILIFT APB pumps.

Product number	Description
96023844	Non-return valve PVC, ball type 2"
97644486	Auto-coupling set Rp 2"
99369644	LC231 (1 pump) without float switch
99369650	LC231 (2 pump controller) without float switch
91427145	Float switch M2 with 5m cable

UNILIFT AP50



TM079225

UNILIFT AP50 is a submersible pump designed for pumping effluent and sewage. The pump is able to handle particles up to 50 mm.

The pump is suitable for permanent installation or can be used as a portable pump. The pump is available with the following options:

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

Pumps that are fitted with a float switch can also be used for manual on/off operation. In this case, the float switch must be secured in an upward-facing position.

Applications

The pump is suitable for the following applications:

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

Features and benefits of UNILIFT AP

UNILIFT AP has many features:

- robust and sustainable stainless-steel design for all hydraulic parts
- service friendly to extend pump lifetime – quick access to replace wear parts like cable, float switch, shaft sealing, impeller and rotor
- cooling jacket allows the pump to operate continuously while partially submerged
- included motor protection that reacts to blockage
- longitudinal, water-tight cables and glass-sealed cable socket on the pump that blocks water entering the motor at damaged cables and allows easy replacement
- highly reliable mechanical shaft seal with an oil chamber that protects the seals and motor.

Type key

Example:

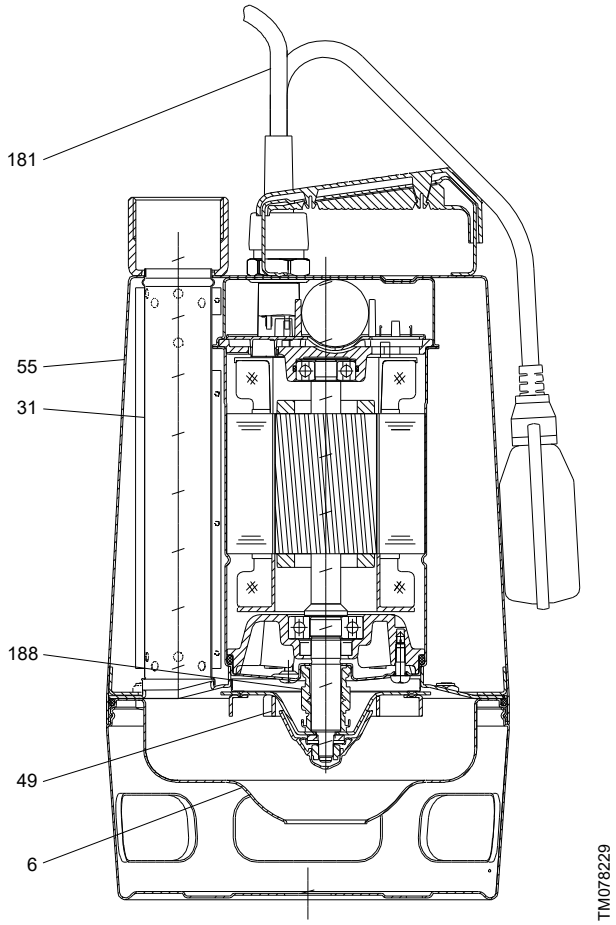
UNILIFT AP 35.B.50.08.A1V

	Description
UNILIFT AP	Type range
12 35 50	Maximum solids size
Blank - AP pump B - AP Basic	Pump type
40 50	Nominal diameter of the discharge port [mm]
	Power output (P2/100[W])
A - automatic operation (with float switch) Blank - manual operation (without float switch)	Level control
1 - single-phase 3 - three-phase	Motor
V - vortex impeller	Impeller

Approvals and markings

Approvals			
CE	TM075405	EAC	TM074611
RCM	98507008_RCM_MARK	KC	TM075835
TÜVRheinland CERTIFIED	99853271	DVE	TM074619

Construction of UNILIFT AP50



Materials

Pos.	Component	Materials	DIN W. - Nr.	AISI
6	Pump housing	Stainless steel	1.4301	304
31	Riser pipe	Stainless steel	1.4301	304
49	Impeller	Stainless steel	1.4301	304
55	Pump sleeve	Stainless steel	1.4401	316
-	Pump shaft - wet end	Stainless steel	1.4301	304
188	Bearings	Heavy-duty pre-lubricated ball bearings		
-	O-rings	NBR rubber		
-	Screws	Stainless steel	1.4301	304
181	Cable	Neoprene		
-	Oil	Shell Odina 15, non-toxic		

Discharge port

All UNILIFT AP50 pumps have a threaded Rp 2 vertical discharge port.

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 onto 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 prevented from entering 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 has a socket and plug connection for quick and easy dismantling.

Motor

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

Enclosure class	IP68
Insulation class	F (155 °C)
Cable type	H07RN(8)-F

Single-phase motors have built-in thermal protection.

Manufactured according to EN 60335-2-41.

Shaft and bearings

The stainless-steel shaft rotates in maintenance-free pre-lubricated 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 effects from solid particles and to minimise power consumption. The impeller has a protective cap to prevent the deposit of long-fibred material.

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 silicone carbide.

Pumped liquids

The pumps are suitable for the following liquids:

- liquids containing fibres from, for example, light industry and laundries
- effluents from, for example, viaducts and underpasses
- domestic wastewater with toilet discharge from pipes and water closets below sewer level, outdoor pump installations.

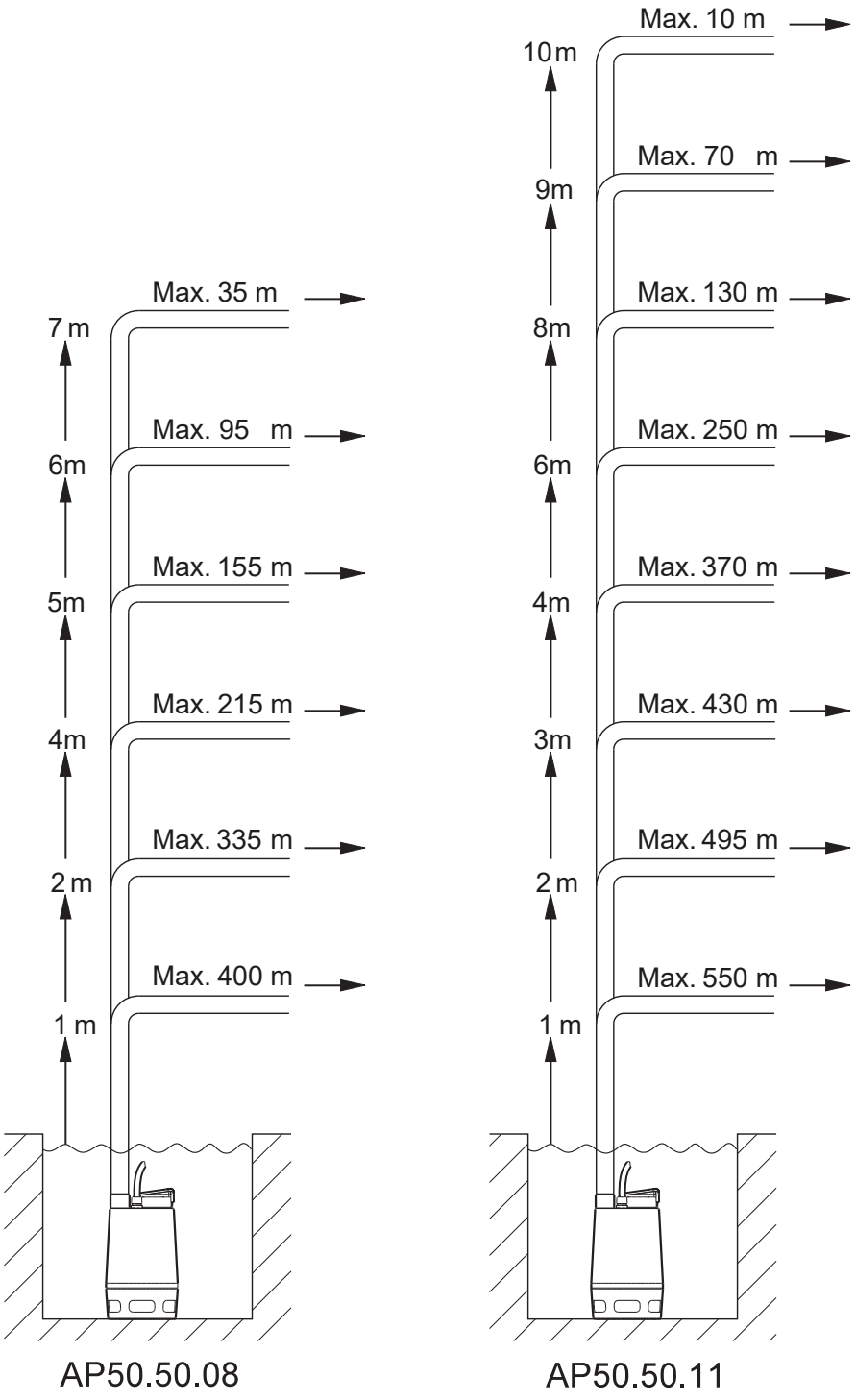
The open-impeller design ensures free passage of solids up to 50 mm.

Level switches and control boxes

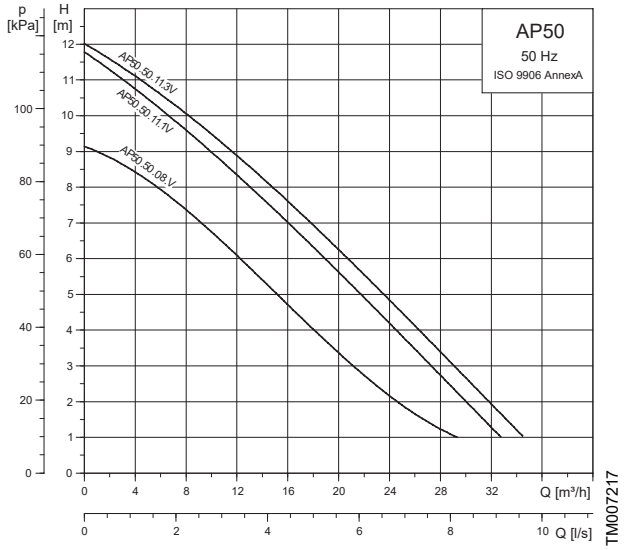
Level controllers and switches are delivered with the product and are directly connected to the single-phase motors. For three-phase motors, level switch solutions are available with control boxes in between the pump and the level switch. The cable length for the pump and level switch is 10 m. A power supply cable of 0.65 m is connected to the box. The level controller box incorporates a contactor and a motor protection unit. The motor protection unit is preset with the nominal current of the pump.

Sizing guide

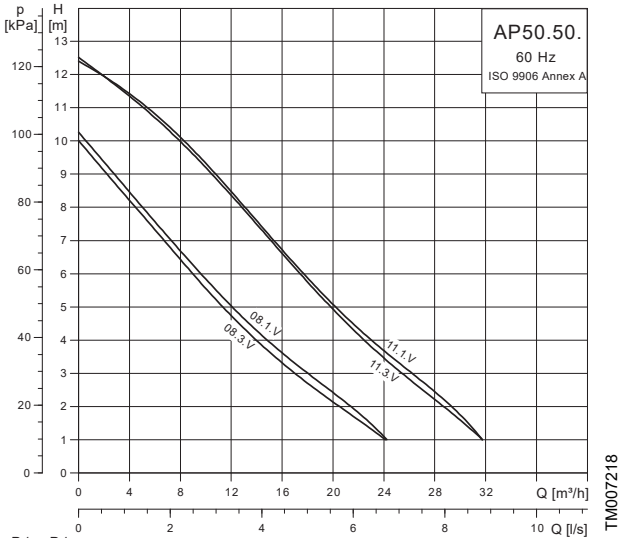
The quick sizing chart below gives an approximate overview of heights and discharge pipe lengths with an inner pipe diameter of 50 mm and a flow of 5 m^3/h, so that a self-cleaning velocity of v=0, 7 m/s is covered. The overview is only intended as a guide. Grundfos is not liable for installations that do not comply with the overview. Pressure loss of a non-return valve and a gate valve is calculated. The vertical height of the discharge pipe must be measured from the pump stop level. For more flow requirements a calculation is needed.



Performance curves UNILIFT AP50 50 Hz



Performance curves UNILIFT AP50 60 Hz



Product range UNILIFT AP50 50 Hz

Pump type	Product number	Voltage[V]	Plug type	Control box with 0.65 m supply cable	Float switch type	Cable length[m]	Cable type	Net weight [kg]
AP50.50.08.1V	96010595	1 x 230	SCHUKO	-	-	10	H07RN8-F 3G1	15.9
AP50.50.08.A1V	96010584	1 x 230	SCHUKO	-	Cable guided	5	H07RN8-F 3G1	15.5
AP50.50.08.A1V	96010984	1 x 230	SCHUKO	-	Cable guided	10	H07RN8-F 3G1	16.1
AP50.50.11.1V	96010577	1 x 230	SCHUKO	-	-	10	H07RN8-F 3G1	16.8
AP50.50.11.A1V	96010566	1 x 230	SCHUKO	-	Cable guided	5	H07RN8-F 3G1	16.9
AP50.50.11.A1V	96010985	1 x 230	SCHUKO	-	Cable guided	10	H07RN8-F 3G1	16.9
AP50.50.08.1V	96010599	1 x 230	No plug	-	-	10	H07RN8-F 3G1	15.8
AP50.50.08.A1V	96404185	1 x 230	No plug	-	Cable guided	10	H07RN8-F 3G1	16.0
AP50.50.08.3V	96010563	3 x 400	No plug	-	-	10	H07RN8-F 4G1	16.2
AP50.50.08.3V	96010632	3 x 230	No plug	-	-	10	H07RN8-F 4G1	16.2
AP50.50.08.A3V	96010933	3 x 400	No plug	✓	Cable guided	10	H07RN8-F 4G1	17.5
AP50.50.08.A3V	96010962	3 x 230	No plug	✓	Cable guided	10	H07RN8-F 4G1	17.5
AP50.50.11.1V	96010581	1 x 230	No plug	-	-	10	H07RN8-F 3G1	16.6
AP50.50.11.A1V	96404186	1 x 230	No plug	-	Cable guided	10	H07RN8-F 3G1	16.9
AP50.50.11.3V	96010562	3 x 400	No plug	-	-	10	H07RN8-F 4G1	16.7
AP50.50.11.3V	96010633	3 x 230	No plug	-	-	10	H07RN8-F 4G1	16.7
AP50.50.11.A3V	96010935	3 x 400	No plug	✓	Cable guided	10	H07RN8-F 4G1	17.9
AP50.50.08.A3V	96023877	3 x 400	CEE	✓	Cable guided	10	H07RN8-F 4G1	17.8
AP50.50.11.A3V	96023878	3 x 400	CEE	✓	Cable guided	10	H07RN8-F 4G1	18.1
AP50.50.08.1V	96010598	1 x 230	Australia	-	-	10	H07RN-F 3G1	15.9
AP50.50.11.1V	96010580	1 x 230	Australia	-	-	10	H07RN-F 3G1	16.8
AP50.50.08.A1V	96023934	1 x 230	Australia	-	Cable guided	10	H07RN-F 3G1	16.1
AP50.50.11.A1V	96023935	1 x 230	Australia	-	Cable guided	10	H07RN-F 3G1	17.0

Product range UNILIFT AP50 60 Hz

Pump type	Product number	Voltage[V]	Plug type	Control box with 0.65 m supply cable	Float switch type	Cable length[m]	Cable type	Net weight [kg]
AP50.50.08.1.V	96010688	1 x 220-230	No plug	-	-	10	H07RN8-F 3G1	15.8
AP50.50.08.3.V	96010647	3 x 380-440	No plug	-	-	10	H07RN8-F 4G1	16.2
AP50.50.08.A1.V	96010684	1 x 220-230	No plug	-	Cable guided	5	H07RN8-F 3G1	15.8
AP50.50.11.1.V	96010694	1 x 220-230	No plug	-	-	10	H07RN8-F 3G1	16.3
AP50.50.11.3.V	96010645	3 x 380-440	No plug	-	-	10	H07RN8-F 4G1	16.7
AP50.50.11.3.V	96010901	3 x 220-220	No plug	-	-	10	H07RN8-F 4G1	16.7
AP50.50.11.A1.V	96010690	1 x 220-230	No plug	-	Cable guided	5	H07RN8-F 3G1	16.5
AP50.50.11.A3.V	96010955	3 x 220-220	No plug	-	Cable guided	10	H07RN8-F 4G1	17.9
AP50.50.11.A3.V	96010956	3 x 380-440	No plug	-	Cable guided	10	H07RN8-F 4G1	17.9

Technical data

Electrical data

UNILIFT AP50 50 Hz

Pump type	Voltage[V]	P_1 [kW]	P_2 [kW]	I_n[A]	I_{start}[A]	Speed [rpm]
AP50.50.08.1V	1 x 230	1.3	0.8	5.9	23.0	2790
AP50.50.08.A1V	1 x 230	1.3	0.8	5.9	23.0	2790
AP50.50.08.3V	3 x 230	1.2	0.8	3.3	18.8	2800
AP50.50.08.A3V	3 x 230	1.2	0.8	3.3	18.8	2800
AP50.50.08.3V	3 x 400	1.2	0.8	2.0	10.8	2820
AP50.50.08.A3V	3 x 400	1.2	0.8	2.0	10.8	2820
AP50.50.11.1V	1 x 230	1.6	1.1	8.0	29.9	2800
AP50.50.11.A1V	1 x 230	1.6	1.1	8.0	29.9	2800
AP50.50.11.3V	3 x 230	1.6	1.2	4.9	29.3	2780
AP50.50.11.3V	3 x 400	1.9	1.2	3.0	16.2	2785
AP50.50.11.A.3V	3 x 400	1.9	1.2	3.0	16.2	2785

UNILIFT AP50 60 Hz

Pump type	Voltage[V]	P_1 [kW]	P_2 [kW]	I_n[A]	I_{start}[A]	Speed [rpm]
AP50.50.08.1V	1 x 220-230	1.4	1.0	6.3	30.9	3400
AP50.50.08.A1V	1 x 220-230	1.4	1.0	6.3	30.9	3400
AP50.50.08.3V	3 x 380-440	1.4	1.0	2.1	9.2	3400
AP50.50.11.1V	1 x 220-230	1.8	1.2	8.4	39.2	3360
AP50.50.11.A1V	1 x 220-230	1.8	1.2	8.4	39.2	3360
AP50.50.11.3V	3 x 200-220	1.6	1.2	6.0	28.6	3360
AP50.50.11.A3V	3 x 200-220	1.6	1.2	5.5	28.6	3360
AP50.50.11.3V	3 x 380-440	1.8	1.3	2.6	13.8	3360
AP50.50.11.A3V	3 x 380-440	1.8	1.3	2.6	13.8	3360

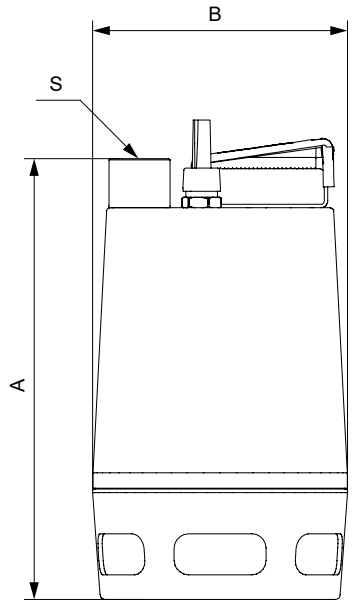
Operating conditions

Maximum head	13 m
Maximum flow rate	32 m^3/h
Liquid temperature range	0-55 °C
Liquid pH range	4-10
Liquid requirements	Liquids containing fibres, effluents and domestic wastewater with toilet discharge
Maximum ambient temperature	55 °C
Maximum particle size through the suction strainer	50 mm
Maximum submersion depth	2 m with 5 m cable 7 m with 10 m cable
Automatic float switch	Type name extension A
Special versions on request	Other voltages and/or frequencies

1 For UNILIFT AP 12, AP 35 and AP 50 without float switch, where the media cannot touch the cable and the plug: up to + 70 °C every 30 min. for time periods below 3 min.

2 IEC 60335-2-41 requires 3 m cable length outside of water.

Dimensions



TM0055241

UNILIFT AP50

Pump type	A [mm]	B [mm]	S [in]
AP50.50	436	241	Rp 2

Accessories

Product number	Description
99369644	LC231 (1 pump) without float switch
99369650	LC231 (2 pump controller) without float switch
91427145	Float switch M2 with 5m cable

UNILIFT AP50B



UNILIFT AP50B is a submersible pump designed for pumping effluent. The pump has a side outlet allowing easy adaptation to existing pipes including auto coupling systems. The pump is able to handle particles up to 50 mm.

The pump is suitable for permanent installation or can be used as a portable pump. The pump is available with the following options:

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

Pumps that are fitted with a float switch can also be used for manual on/off operation. In this case, the float switch must be secured in an upward-facing position.

Applications

The pump is suitable for the following applications:

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

Features and benefits of UNILIFT AP50B

UNILIFT AP50B has many beneficial features:

- designed for more demanding effluent and sewage pumping
- high performance, high reliability and low maintenance
- UNILIFT AP50B is designed for effluent applications
- UNILIFT AP50B is certified EN 12050-1 for sewage applications
- included motor protection that reacts to blockage
- service friendly – quick access to replace wear-parts like cable, shaft sealing, impeller and rotor.

Type key

Example:

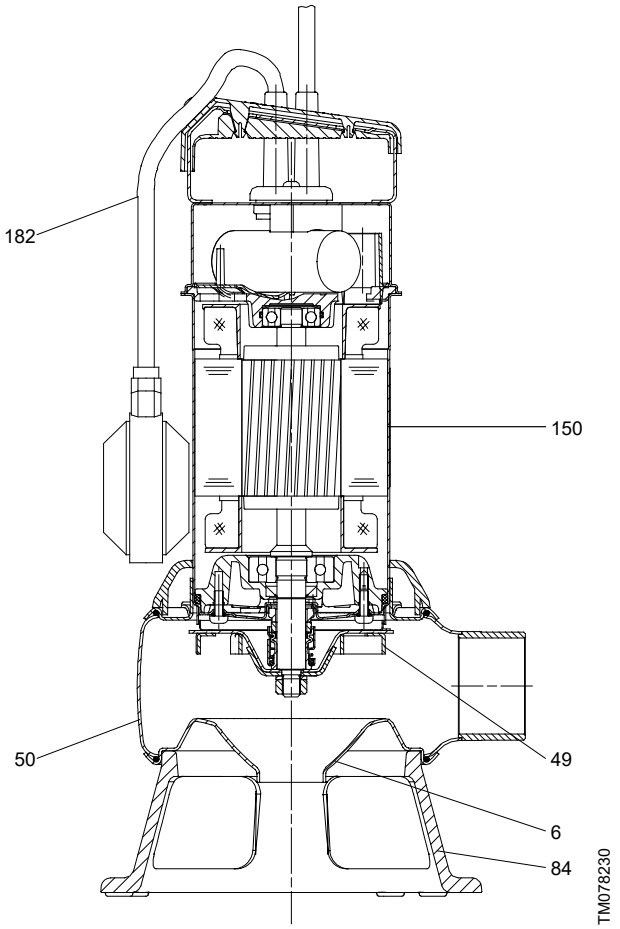
UNILIFT AP 35.B.50.08.A1V

	Description
UNILIFT AP	Type range
12 35 50	Maximum solids size
Blank - AP pump B - AP Basic	Pump type
40 50	Nominal diameter of the discharge port [mm]
	Power output (P2/100[W])
A - automatic operation (with float switch) Blank - manual operation (without float switch)	Level control
1 - single-phase 3 - three-phase	Motor
V - vortex impeller	Impeller

Approvals and markings

Approvals			
CE	TM075405	EAC	TM074611
	98507008_RCM_MARK		TM075835
TÜVRheinland CERTIFIED	99853271	DVE	TM074619

Construction of UNILIFT AP50B



Materials

Pos.	Component	Materials	DIN W. - Nr.	AISI
6	Pump housing	Stainless steel	1.4301	304
-	Riser pipe	Stainless steel	1.4301	304
49	Impeller	Stainless steel	1.4301	304
150	Motor unit complete	Parts in contact with liquid: Stainless steel	1.4401	316
-	Pump shaft - wet end	Stainless steel	1.4301	304
181	Motor cable	Neoprene		
-	O-rings	NBR rubber		
-	Spring	Stainless steel	1.4310	
50	Pump inlet	Stainless steel	1.4301	304
84	Ring stand	Composite		
-	Oil	Shell Odina 15, non-toxic		

Pump housing

UNILIFT AP50B has a 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.

The ring stand, 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 R 2 horizontal discharge port.

Motor

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

Enclosure class	IP68
Insulation class	F (155 °C)
Cable type	H07RN(8)-F

Single-phase motors have built-in thermal protection.

Manufactured according to EN 60335-2-41.

Shaft and bearings

The stainless-steel shaft rotates in maintenance-free pre-lubricated 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 effects from solid particles and to minimise power consumption. The impeller has a protective cap to prevent the deposit of long-fibred material.

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 silicone carbide.

Pumped liquids

The pumps are suitable for the following liquids:

- liquids containing fibres from, for example, light industry and laundries
- effluents from, for example, viaducts and underpasses
- domestic wastewater with toilet discharge from pipes and water closets below sewer level, outdoor pump installations.

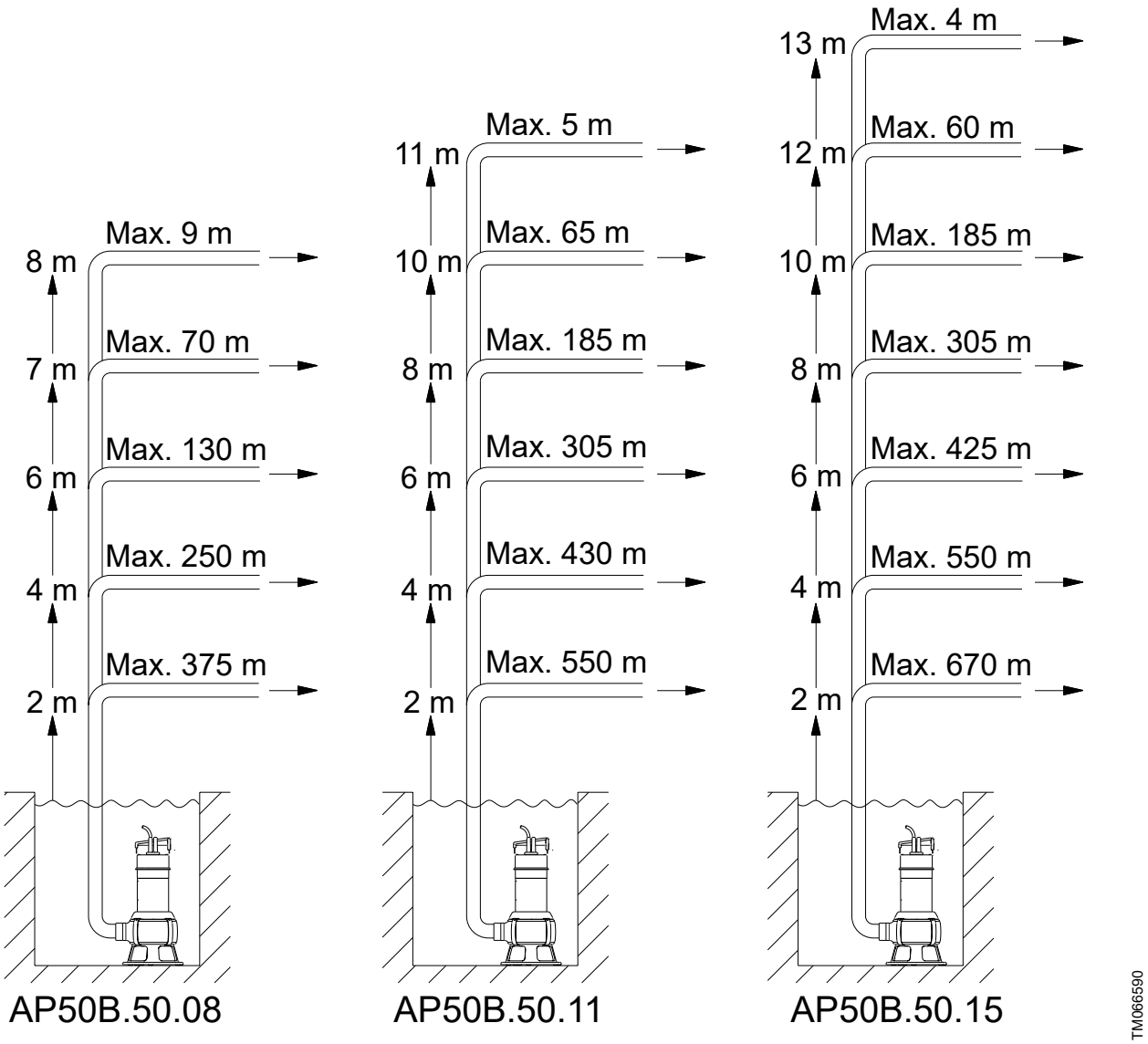
The open-impeller design ensures free passage of solids up to 50 mm.

Level switches

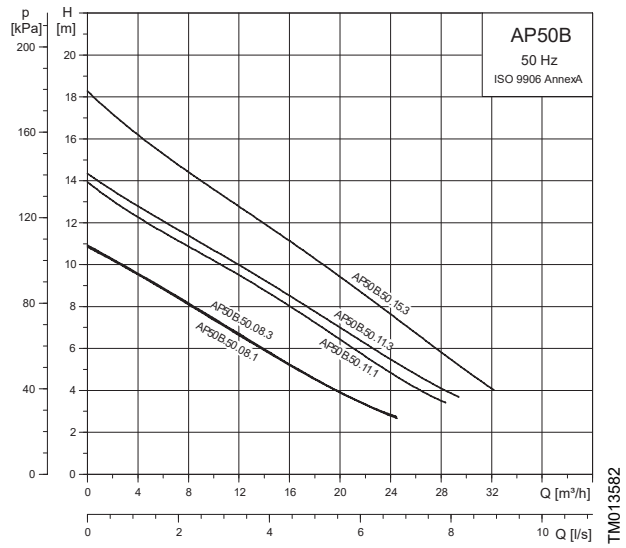
Level controllers and switches are delivered with the product and are directly connected to the single-phase motors.

Sizing guide

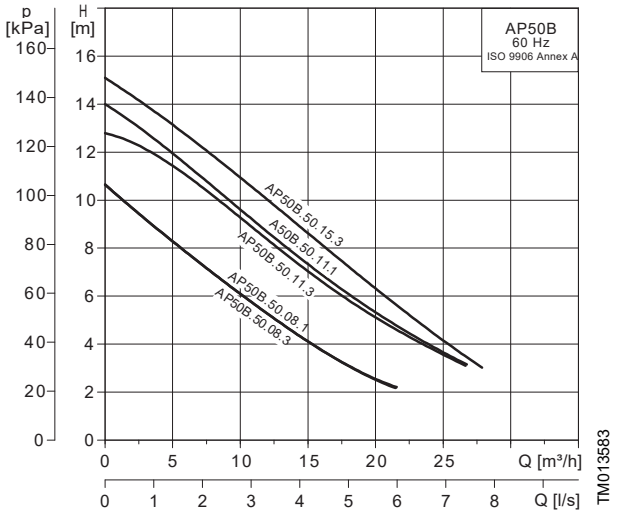
The quick sizing chart below gives an approximate overview of heights and discharge pipe lengths with an inner pipe diameter of 50 mm and a flow of 5 m^3/h, so that a self-cleaning velocity of v=0, 7 m/s is covered. The overview is only intended as a guide. Grundfos is not liable for installations that do not comply with the overview. Pressure loss of a non-return valve and a gate valve is calculated. The vertical height of the discharge pipe must be measured from the pump stop level. For more flow requirements a calculation is needed.



Performance curves UNILIFT AP50B 50 Hz



Performance curves UNILIFT AP50B 60 Hz



Product range UNILIFT AP50B 50 Hz

Pump type	Product number	Voltage[V]	Plug type	Float switch type	Cable length[m]	Cable type	Net weight [kg]
AP50B.50.08.1V	96004587	1 x 230	SCHUKO	-	10	H07RN8-F 3G1	11.4
AP50B.50.08.A1V	96004586	1 x 230	SCHUKO	Cable guided	5	H07RN8-F 3G1	11.0
AP50B.50.08.A1V	96468354	1 x 230	SCHUKO	Cable guided	10	H07RN8-F 3G1	11.6
AP50B.50.11.1V	96004599	1 x 230	SCHUKO	-	10	H07RN8-F 3G1	11.8
AP50B.50.11.A1V	96004598	1 x 230	SCHUKO	Cable guided	5	H07RN8-F 3G1	11.3
AP50B.50.11.A1V	96468352	1 x 230	SCHUKO	Cable guided	10	H07RN8-F 3G1	12.0
AP50B.50.08.A1V	99972781	1 x 230	No plug	Cable guided	10	H07RN8-F 3G1	11.5
AP50B.50.08.3V	96004589	3 x 400	No plug	-	5	H07RN8-F 4G1	9.3
AP50B.50.08.3V	96007151	3 x 230	No plug	-	5	H07RN8-F 4G1	9.3
AP50B.50.08.3V	96468194	3 x 400	No plug	-	10	H07RN8-F 4G1	10.0
AP50B.50.11.1V	92532143	1 x 230	No plug	-	10	H07RN8-F 3G1	11.7
AP50B.50.11.A1V	99972805	1 x 230	No plug	Cable guided	10	H07RN8-F 3G1	11.9
AP50B.50.11.3V	96004601	3 x 400	No plug	-	5	H07RN8-F 4G1	11.4
AP50B.50.11.3V	96007153	3 x 230	No plug	-	5	H07RN8-F 4G1	11.4
AP50B.50.11.3V	96468195	3 x 400	No plug	-	10	H07RN8-F 4G1	12.1
AP50B.50.15.3V	96004609	3 x 400	No plug	-	5	H07RN8-F 4G1	12.0
AP50B.50.15.3V	96468196	3 x 400	No plug	-	10	H07RN8-F 4G1	12.7

Product range UNILIFT AP50B 60 Hz

Pump type	Product number	Voltage[V]	Plug type	Float switch type	Cable length[m]	Cable type	Net weight [kg]
AP50B.50.08.A1V	96004593	1 x 220-230	SCHUKO	-	5	H07RN8-F 3G1	10.8
AP50B.50.08.A1V	96004592	1 x 220-230	SCHUKO	Cable guided	10	H07RN8-F 3G1	11.6
AP50B.50.11.1V	96004604	1 x 220-230	SCHUKO	Cable guided	10	H07RN8-F 3G1	12.0
AP50B.50.11.A1V	96004605	1 x 220-230	SCHUKO	-	5	H07RN8-F 3G1	11.2
AP50B.50.08.3V	96004595	3 x 200-220	No plug	-	5	H07RN8-F 4G1	9.3
AP50B.50.11.3V	96004607	3 x 200-220	No plug	-	5	H07RN8-F 4G1	11.4
AP50B.50.15.3V	96004611	3 x 200-220	No plug	-	5	H07RN8-F 4G1	12.0

Technical data

Electrical data

UNILIFT AP50B 50 Hz

Pump type	Voltage[V]	P_1 [kW]	P_2 [kW]	I_n[A]	I_{start}[A]	Speed [rpm]
AP50B.50.08.1V	1 x 230	1.20	0.74	5.37	23.0	2790
AP50B.50.08.A1V	1 x 230	1.20	0.74	5.37	23.0	2790
AP50B.50.08.3V	3 x 230	1.25	0.80	3.53	18.8	2810
AP50B.50.08.3V	3 x 400	1.25	0.80	1.98	10.8	2810
AP50B.50.11.1V	1 x 230	1.75	1.21	8.00	29.9	2760
AP50B.50.11.A1V	1 x 230	1.75	1.21	8.00	29.9	2760
AP50B.50.11.3V	3 x 400	1.75	1.31	2.81	16.2	2785
AP50B.50.15.3V	3 x 400	2.15	1.50	3.70	23.1	2785

UNILIFT AP50B 60 Hz

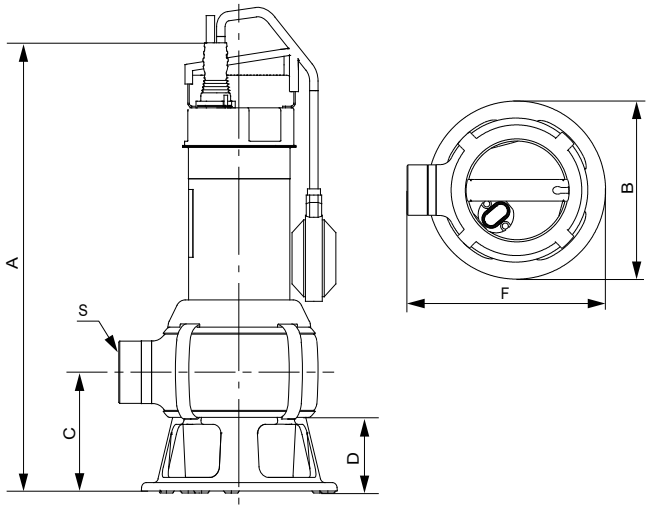
Pump type	Voltage[V]	P_1 [kW]	P_2 [kW]	I_n[A]	I_{start}[A]	Speed [rpm]
AP50B.50.08.1V	1 x 220-230	1.40	1.00	6.40	30.9	3400
AP50B.50.08.A1V	1 x 220-230	1.40	1.00	6.40	30.9	3400
AP50B.50.08.3V	3 x 200-220	1.31	0.84	4.20	19.9	3400
AP50B.50.11.1V	1 x 220-230	1.80	1.20	8.42	39.2	3360
AP50B.50.11.A1V	1 x 220-230	1.80	1.20	8.42	39.2	3360
AP50B.50.11.3V	3 x 200-220	1.73	1.30	5.60	28.6	3360
AP50B.50.15.3V	3 x 200-220	1.94	1.46	6.90	36.7	3360

Operating conditions

Maximum head	18
Maximum flow rate	29 m^3/h
Liquid temperature range	0-40 °C
Liquid pH range	4-10
Liquid requirements	Liquids containing fibres, effluents and domestic wastewater with toilet discharge
Maximum ambient temperature	40 °C
Maximum particle size through the suction strainer	50 mm
Maximum installation depth	2 m with 5 m cable 7 m with 10 m cable
Automatic float switch:	Type name extension A
Special versions on request	Other voltages and/or frequencies

1 IEC 60335-2-41:2012 requires 3 m cable length outside of water.

Dimensions



TM034097

UNILIFT AP50B

Pump type	A [mm]	B [mm]	C [mm]	D [mm]	F [mm]	S [in]
AP50B.50	468	210	116	73	234	Rp 2

Accessories

The following are recommended accessories for UNILIFT APB pumps.

Product number	Description
96023844	Non-return valve PVC, ball type 2"
97644486	Auto-coupling set Rp 2"
99369644	LC231 (1 pump) without float switch
99369650	LC231 (2 pump controller) without float switch
91427145	Float switch M2 with 5m cable

UNILIFT APG



TM081489

The UNILIFT APG pump is a single-stage submersible pump designed for pumping effluent and sewage. The pump is suitable for the following applications:

- Pumping of domestic wastewater from any sanitary appliances, such as showers, bathtubs, kitchen sinks, washing machines, dishwashers and water closets.
- All greywater and blackwater from households.

Features and benefits

The main benefits of the UNILIFT APG are the following:

- high pump head
- minimising outlet pipe dimensions due to grinder system
- designed for more demanding effluent and sewage pumping
- high performance, high reliability and low maintenance
- included motor protection that reacts to blockage
- service friendly – quick access to replace wear-parts like cable, impeller and rotating grinder head.

Therefore the product is ideal for use in sparsely populated areas where gravity sewage systems are not available. The solutions is ideal in, for example, one- or two-family houses, residential building services and areas with large terrain-level differences.

Type key, UNILIFT APG

Example: **UNILIFT APG.40.10.A1. 1x220-240V SCH**

Code	Explanation	Designation
UNILIFT APG	Product name	
40		Nominal diameter of the outlet
10		Power output, P2 / 100 [W]
[ ]	Manual operation without float switch	Level control
A	Automatic operation with float switch	
1	Single-phase	Motor type
3	Three-phase	
1 x 230 V		Nominal voltage
1 x 220 - 240 V		
3 x 220 V		
3 x 380 V		
3 x 400 V		
[ ]	No plug	Plug type
SCH	Europe - F type wall plug	
ARG	Argentina - IRAM approved I type wall plug	
AUS	Australia, New Zealand - I type wall plug	

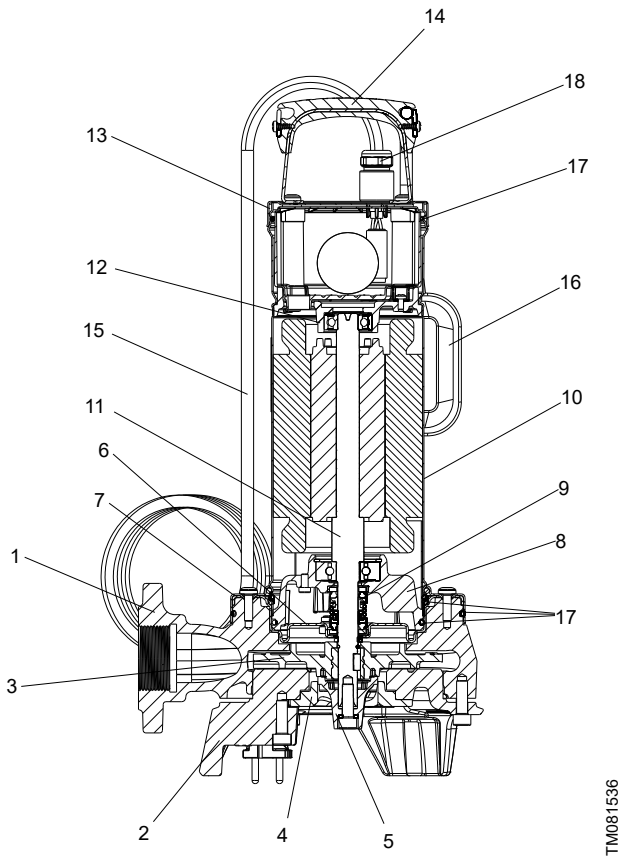
Approvals and markings

TM075405

TM074611

99853271

Materials



Pos.	Component	Material	DIN W. - Nr.	AISI
1	Pump housing	Cast iron	EN-GJL-200	-
2	Pump base	Cast iron	EN-GJL-200	-
3	Impeller	Composite	-	-
4	Cutter base	Stainless steel	1.4542	630
5	Cutter	Stainless steel	1.4542	630
6	Shaft seal disc	Stainless steel	1.4301	304
7	Motor connection flange	Stainless steel	1.4301	304
8	Lower bearing support	Aluminium	-	-
9	Double mechanical seal	Pump side - silicone carbide	-	-
		Motor side - carbon/alumina	-	-
10	Motor case	Stainless steel	1.4301	304
11	Motor shaft		1.4057	431
12	Upper bearing support	Aluminium	-	-
13	Top cover	Stainless steel	-	-
14	Handle	Stainless steel and insulating rubber	-	-
15	Supply cable	H07RN8-F	-	-
16	Float switch cable	H07RN-F	-	-
17	O-rings	NBR	-	-
18	Cable gland	Nickel-plated brass	-	-

Design

UNILIFT APG has a semi-open impeller design. Because the knife cuts the debris in the water before entering the hydraulics, the pump performs more efficiently and with higher head, relative to similar open impeller designs.

Pump housing

UNILIFT APG has a pump housing with an outstanding design for submersible wastewater pumps resulting in a high head. The pump housing is made of cast iron with a hydraulically correct shape, ensuring free passage of ground particles.

Outlet port

All UNILIFT APG pumps are fitted with a combined Rp 1 1/2" / DN32 / DN40 horizontal outlet port. UNILIFT APG is compatible with the Grundfos SEG guide rail system.

Shaft and bearings

The stainless-steel shaft rotates in maintenance-free, pre-lubricated ball bearings.

Impeller

The composite impeller is a semi-open impeller with L-shaped blades. The blades are curved backwards to reduce any harmful effects from solid particles and to minimise power consumption. The impeller has a protective cap to prevent the deposit of long-fibred material.

Grinder system

The grinder system consists of two parts: a stationary grinder ring and a rotating grinder head. The grinder ring is secured to the pump housing by means of a bayonet coupling and fixed in the right position with a screw. The grinder head is secured to the shaft by means of the screw that keeps the impeller in position.

Both parts are made of hardened stainless steel for optimum durability of the grinder function.

Shaft seal

The shaft seal is a combination of a mechanical bellows shaft seal and a lip seal with 350 ml oil in between. The seal faces are made of silicone carbide.

Pumped liquids

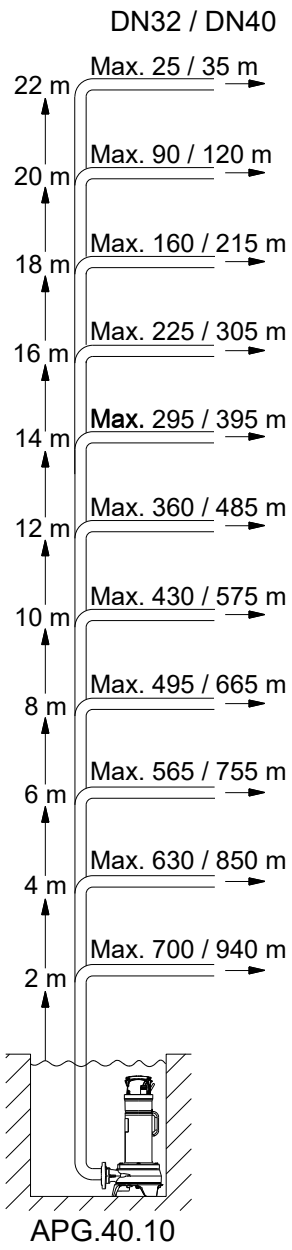
The pump is capable of pumping water containing a limited quantity of spherical particles.

The pump is not suitable for the following liquids:

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

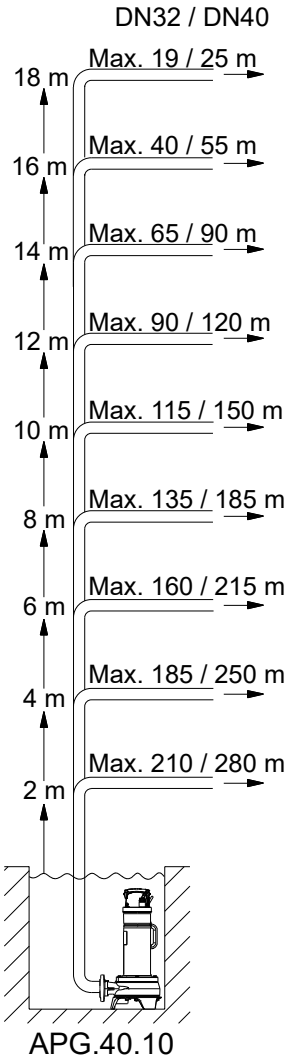
Sizing guide

The quick sizing chart below gives an approximate overview of heights and outlet pipe lengths with an inner pipe diameter of DN 32, G 1 1/2" / DN 40, and a flow, so that a self-cleaning velocity of minimum 0.7 m/s is covered. The overview is only intended as a guide. Grundfos is not liable for installations that do not comply with the overview. Pressure loss of a non-return valve and an isolating valve is calculated. The vertical height of the outlet pipe must be measured from the pump stop level. For more flow requirements a calculation is needed.



TM081851

APG.40.10, flow of 0.7 m/s , Q = 2.1 - 3.2 m³/h



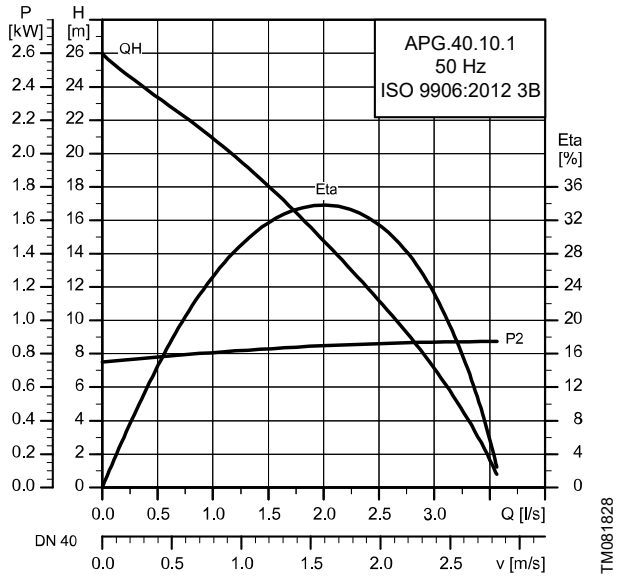
TM081852

APG.40.10, flow of 1.2 m/s , Q = 3.6 - 5.4 m³/h

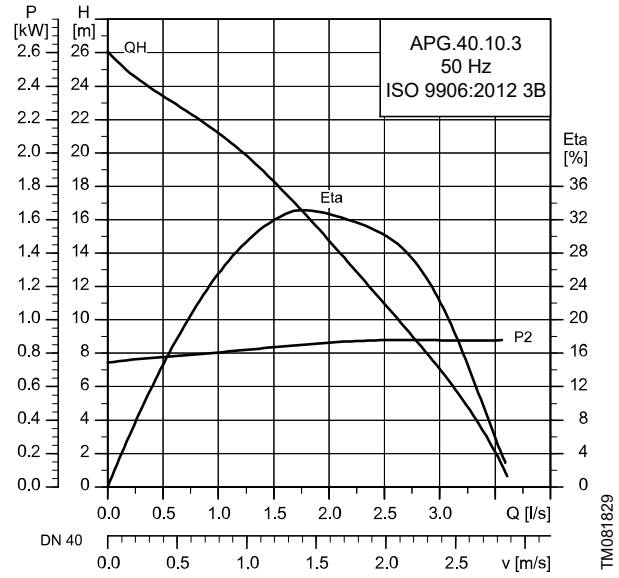
Performance curves

UNILIFT APG pumps are performance-tested according to the following standards:

- 50 Hz DIN: ISO 9906:2012, grade 3B



UNILIFT APG, single-phase motor



UNILIFT APG, three-phase motor

Product range, UNILIFT APG

50 Hz

Pump type	Product number	Voltage[V]	Plug type	Cable length[m]	Cable type	Net weight [kg]
UNILIFT APG.40.10.A1	92611467	1 x 230	SCHUKO	10	H07RN8-F 3G1	22.1
UNILIFT APG.40.10.A1	92616874	1 x 230	No plug	10	H07RN8-F 3G1	22.1
UNILIFT APG.40.10.1	92616890	1 x 230	SCHUKO	10	H07RN8-F 3G1	22.1
UNILIFT APG.40.10.1	92616891	1 x 230	No plug	10	H07RN8-F 3G1	22.1
UNILIFT APG.40.10.A1	92616898	1 x 230	ARG	10	H07RN8-F 3G1	22.1

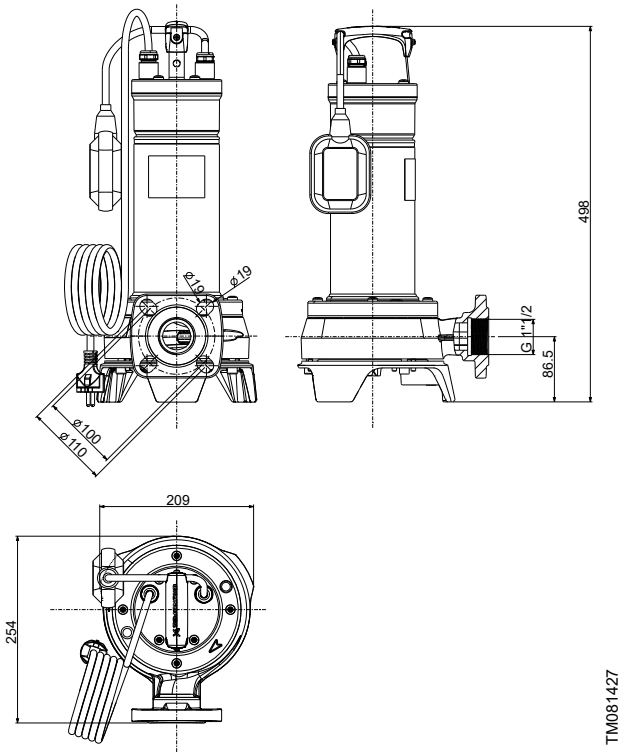
Pump type	Product number	Voltage[V]	Plug type	Cable length[m]	Cable type	Net weight [kg]
UNILIFT APG.40.10.1	92616910	1 x 230	ARG	10	H07RN8-F 3G1	22.1
UNILIFT APG.40.10.A1	92616914	1 x 220-240	AUS	10	H07RN8-F 3G1	22.1
UNILIFT APG.40.10.1	92616916	1 x 220-240	AUS	10	H07RN8-F 3G1	22.1
UNILIFT APG.40.10.A3	92616892	3 x 400	No plug	10	H07RN8-F 5G1	22.1
UNILIFT APG.40.10.3	92616893	3 x 400	No plug	10	H07RN8-F 5G1	22.1
UNILIFT APG.40.10.A3	92616895	3 x 220	No plug	10	H07RN8-F 5G1	22.1
UNILIFT APG.40.10.3	92616897	3 x 220	No plug	10	H07RN8-F 5G1	22.1
UNILIFT APG.40.10.A3	92616912	3 x 380	No plug	10	H07RN8-F 5G1	22.1
UNILIFT APG.40.10.3	92616913	3 x 380	No plug	10	H07RN8-F 5G1	22.1

UNILIFT APG is available with and without a float switch in both single- and three-phase versions. A float switch for single-phase pumps has a direct connection. For three-phase pumps, there is a connection to an external control box including MPU, with a 10 m cable float switch.

Electrical data

Pump type	Voltage [V]	Rated power [W (hp)]	Absorbed power [W (hp)]	Absorbed current [A]
UNILIFT APG	1 x 220-240	1000 (1.3)	1300 (1.7)	6.8
	3 x 200-220	1000 (1.3)	1300 (1.7)	4.5
	3 x 380-415	1000 (1.3)	1300 (1.7)	2.6

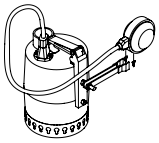
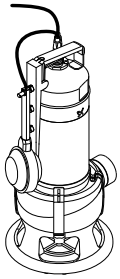
Dimensional drawing



Accessories

Product number	Dimensions	Description
99369644		LC 231 (1 pump) without float switch
99369650		LC 231 (dual pump controller) without float switch
98538174	2 m	Lifting chain in stainless steel (EN 1.4571/A4) with shackle. Approved up to 500 kg with certificate.
98538175	3 m	
98538176	4 m	
98538177	6 m	
98538178	8 m	
98538179	10 m	
96076063	DN 40/Rp 1 1/2	Auto-coupling system complete, that is upper guide rail bracket, bolts, nuts, gaskets, guide claw and base stand. All parts are in cast iron. **Note:** In installations with guide rails longer than 4 m, we recommend that you use an intermediate guide rail bracket.
98245789	JIS/KS DN 40	
96887609	DN 40	Intermediate guide rail bracket (guide rails 4 meter and longer) in stainless steel.

6. Accessories

Accessory		Description	Related products	Product number
	TM077677	Guide arm for floater, UNILIFT CC	UNILIFT CC	98709179
	TM011006	Guide arm for floater, UNILIFT KP	UNILIFT KP	96007161
	TM067162	Guide arm for floater, UNILIFT AP and UNILIFT APB	UNILIFT AP UNILIFT APB	96003993
	GR-1022807	Float switch M2 with 5 m cable	LC 231	91427145
	GR-1022807	Float switch M2 with 10 m cable	LC 231	91427146
	GR-1017241	LLC 1000W 300mm, 1 x 230 V, 50Hz SCHUKO plug and socket	UNILIFT KP	98599969
	GR-1031078	LC 231 single pump controller	UNILIFT AP UNILIFT KP UNILIFT CC UNILIFT APB UNILIFT APG	99369644
	GR-1031087	LC 231 dual pump controller	UNILIFT AP UNILIFT KP UNILIFT CC UNILIFT APB UNILIFT APG	99369650
	GR-1029731	Auto coupling with horizontal connection Rp 2" Guide claw Rp 2" without sealing Guide rails pins for 1" pipes with max. length of 1.5 m	UNILIFT APB	96429519
	GR-1031453	Auto coupling with 90° bend and vertical connection Rp 2" Guide claw Rp 2" with sealing Guide rail pins for 1" pipes with max. length of 3 m	UNILIFT APB	97644486
	TM025980	Auto-coupling system complete, that is upper guide rail bracket, bolts, nuts, gaskets, guide claw and base stand. All parts are in cast iron. DN 40 / Rp 1 1/2" **Note:** In installations with guide rails longer than 4 m, we recommend that you use an intermediate guide rail bracket (96887609).	UNILIFT APG	96076063
	TM057683	Intermediate guide rail bracket, DN40 to extend 1" guide rails	UNILIFT APB UNILIFT APG	96887609

Accessory		Description	Related products	Product number
	TM077908	Non-return valve for 1 1/4" discharge connection	UNILIFT KP	15211
	TM077908	Non-return valve for 1 1/2" discharge connection	UNILIFT AP12.40 UNILIFT AP35.40 UNILIFT APG	96549937
	TM077913	Non-return valve PVC, ball type Rp 1 1/2"	UNILIFT AP12.40 UNILIFT AP35.40	96023843
	TM077913	Non-return valve PVC, ball type Rp 2"	UNILIFT AP12.40 UNILIFT AP50 UNILIFT APB	96023844
	TM078278	Isolating valve Rp 1 1/2"	UNILIFT AP	96023846
	TM078279	Isolating valve Rp 2"	UNILIFT AP UNILIFT APB	96023847
	GR-1019227	Hexagon nipple Rp 1 1/2"	UNILIFT AP12.40 UNILIFT AP35.40	96003632
	GR-1016340	Lifting chain 3 m, 320 kg maximum working load	UNILIFT AP UNILIFT APB	98989664
	GR-1028108	DN 50 discharge hose with Storz C couplings 10 m	UNILIFT AP UNILIFT APB UNILIFT APG	96001987
		Storz coupling C-G R 1 1/2"	UNILIFT AP12.40 UNILIFT AP35.40 UNILIFT APG	96001977
		Storz coupling C-G R 2"	UNILIFT AP12.50 UNLIFT AP50	96003829
		Storz coupling C-G Rp 2"	UNILIFT APB	96001982

Lifting stations UNO-/DUOLIFT

Accessory		Description	Related products	Product number
	TM049242	DUOLIFT 270.40.CC/KP tank including pipes	UNILIFT CC, KP	97642386
	TM049242	DUOLIFT 270.40.SEG/APG tank including pipes	SEG, UNILIFT APG	97642372
	TM049242	DUOLIFT 270.50.APB tank including pipes	UNILIFT APB	97642388
	TM049241	DUOLIFT 540.40.SEG/APG tank including pipes	SEG, UNILIFT APG	99017729
	TM049241	DUOLIFT 540.50.APB tank including pipes	UNILIFT APB	99017735
	TM049242	UNOLIFT 270.40.CC/KP tank including pipes	UNILIFT CC, KP	97642385
	TM049242	UNOLIFT 270.40.SEG/APG tank including pipes	SEG, UNILIFT APG	97642371
	TM049242	UNOLIFT 270.50.APB tank including pipes	UNILIFT APB	97642387

For further information about UNO-/DUOLIFT, scan the QR code below.

QR98501181

http://net.grundfos.com/qr/i/98501181

LIFTAWAY

Accessory		Description	Related products	Product number
	TM080991	LIFTAWAY B 120-1, including pipes	UNILIFT CC, KP, AP12	92613179
	TM080991	LIFTAWAY B 120-2, including pipes	UNILIFT CC, KP	92614070

Pumps must be selected separately.

Accessory		Description	Related products	Product number
	LIFT_C40	LIFTAWAY C 40-1, including pipes	UNILIFT KP	96003985

For further information about LIFTAWAY C 40-1 and accessories, scan the QR code below.

QR96415568

http://net.grundfos.com/qr/i/96415568

Pumps must be selected separately.

Controllers

LLC 1000W level controller



TM053939

LLC 1000W level controller

This electrode device controls and monitors 1 x 230 V, 50 Hz pumps with a Schuko plug up to a nominal current of 6 Ampere. It is specially designed to fit in narrow tanks, wells or pump sumps. The device can be assembled directly to UNILIFT KP or UNILIFT CC pumps and be placed beside the pump in a sump. It can also operate with UNILIFT AP pumps. It is a full control unit with a high water-level alarm with integrated buzzer. A potential free contact allows the device to be connected to BMS systems, an external alarm buzzer or lamp. The start, stop, and alarm level can be adjusted by cutting the electrode to the required length. To limit maintenance of the electrodes, it is recommended for use with conductive (waste-)water that does not contain components that build up an isolating layer on contacted surfaces, such as grease or fat.

The level controller consists of the following:

Pos.	Description
1	4 stainless steel rod electrodes (300 or 1000 mm)
2	Electrode bracket
3	Mounting bracket
4	10 m cable
5	Plug-in control box
6	1 1/4" barrel nipple (to be used with UNILIFT KP to mount the bracket on the pump discharge)

The control box houses the evaluation electronics, a safety plug, and a Schuko outlet for connection to the pump.

Product number	Description
98599969	LLC 1000W.230.1.6 300 mm
98599967	LLC 1000W.230.1.6 1000 mm

LC 231 level-control unit



GR-1031078

LC 231 single pump controller



GR-1031087

LC 231 dual pump controller

The LC 231 pump controllers are designed for level control, monitoring and protection of one pump or two pumps starting direct-on-line. Only one controller type is required for single-phase or three-phase pumps and for both 50 and 60 Hz. The controllers are equipped with motor current measurement and motor protection for additional safety. The level-control unit switches the pump on and off according to the liquid level measured by float switches or an analog pressure sensor. When the start level is reached, the pump starts and when the liquid level has been lowered to the stop level, the pump is stopped. An alarm is trigged in instances such as high-water level in the tank and sensor or pump failure. Settings are configured via the operating panel or simply via a Bluetooth connection to a mobile phone through the GRUNDFOS GO Remote app. Full documentation with alarm logs and reports can be extracted via the app as well. LC 231 can also be connected to building management systems with a small add-on card module.

Product number	Description
99369644	LC 231 single pump controller (no float switch), 1 x 110- 240 VAC (50/60 Hz) or 3 x 380-460 VAC (50/60 Hz)
99369650	LC 231 dual pump controller (no float switch), 1 x 110- 240 VAC (50/60 Hz) or 3 x 380-460 VAC (50/60 Hz)

Accessories for controllers

Description	Product number
Flashing light for external alarm indication (1 x 230 VAC for outdoor installation)	62500020
Alarm horn for external alarm indication (outdoor installation, 1 x 230 VAC)	62500021
Alarm horn for external alarm indication (indoor installation, 1 x 230 VAC)	62500022
25 [A] external mains switch for supply cable	96002511

Level detection with float switches

Wells, pits, tanks or simple concrete pump sumps for drainage and greywater installations are often small, and float switches should be small as well to operate properly.

Float switches can be connected to LC 231.

Description	Product number
Float Switch M2 with 5 m cable (90 mm height, ø60 mm, max. temp. 80 °C)	91427145
Float Switch M2 with 10 m cable (90 mm height, ø60 mm, max. temp. 80 °C)	91427146
Float Switch M2 with 20 m cable (90 mm height, 60 mm, max. temp. 80 °C)	91427147

Level detection with hydrostatic sensor

Very slim and narrow installations require a level detection with no movable parts in the wastewater. Analog pressure sensors are the right choice under these conditions.

Pressure sensors can be connected to LC 231.

Description	Product number
Level sensor with 10 m cable, 4-20 mA	99488545
Level sensor with junction box to extend the sensor cable	99488577
Level sensor with cable hanger in pits and wells	99488578

Argentina
Bombas GRUNDFOS de Argentina S.A.
Ruta Panamericana km. 37.500industin
1619 - Garín Pcia. de B.A.
Tel.: +54-3327 414 444
Fax: +54-3327 45 3190

Australia
GRUNDFOS Pumps Pty. Ltd.
P.O. Box 2040
Regency Park
South Australia 5942
Tel.: +61-8-8461-4611
Fax: +61-8-8340-0155

Austria
GRUNDFOS Pumpen Vertrieb Ges.m.b.H.
Grundfosstraße 2
A-5082 Grödig/Salzburg
Tel.: +43-6246-883-0
Fax: +43-6246-883-30

Belgium
N.V. GRUNDFOS Bellux S.A.
Boomsesteenweg 81-83
B-2630 Aartselaar
Tel.: +32-3-870 7300
Fax: +32-3-870 7301

Belarus
Представительство ГРУНДФОС в Минске
220125, Минск
ул. Шафарнянская, 11, оф. 56, БЦ «Порт»
Тел.: +375 17 397 397 3
+375 17 397 397 4
Факс: +375 17 397 397 1
E-mail: minsk@grundfos.com

Bosnia and Herzegovina
GRUNDFOS Sarajevo
Zmaja od Bosne 7-7A
BiH-71000 Sarajevo
Tel.: +387 33 592 480
Fax: +387 33 590 465
www.ba.grundfos.com
E-mail: grundfos@bih.net.ba

Brazil
BOMBAS GRUNDFOS DO BRASIL
Av. Humberto de Alencar Castelo Branco, 630
CEP 09850 - 300
São Bernardo do Campo - SP
Tel.: +55-11 4393 5533
Fax: +55-11 4343 5015

Bulgaria
Grundfos Bulgaria EOOD
Slatina District
Iztochna Tangenta street no. 100
BG - 1592 Sofia
Tel.: +359 2 49 22 200
Fax: +359 2 49 22 201
E-mail: bulgaria@grundfos.bg

Canada
GRUNDFOS Canada inc.
2941 Brighton Road
Oakville, Ontario
L6H 6C9
Tel.: +1-905 829 9533
Fax: +1-905 829 9512

China
GRUNDFOS Pumps (Shanghai) Co. Ltd.
10F The Hub, No. 33 Suhong Road
Minhang District
Shanghai 201106 PRC
Tel.: +86 21 612 252 22
Fax: +86 21 612 253 33

Columbia
GRUNDFOS Colombia S.A.S.
Km 1.5 vía Siberia-Cota Conj. Potrero Chico,
Parque Empresarial Arcos de Cota Bod. 1A.
Cota, Cundinamarca
Tel.: +57(1)-2913444
Fax: +57(1)-8764586

Croatia
GRUNDFOS CROATIA d.o.o.
Buzinski prilaz 38, Buzin
HR-10010 Zagreb
Tel.: +385 1 6595 400
Fax: +385 1 6595 499
www.hr.grundfos.com

Czech Republic
GRUNDFOS Sales Czechia and Slovakia s.r.o.
Čajkovského 21
779 00 Olomouc
Tel.: +420-585-716 111

Denmark
GRUNDFOS DK A/S
Martin Bachs Vej 3
DK-8850 Bjerringbro
Tel.: +45-87 50 50 50
Fax: +45-87 50 51 51
E-mail: info_GDK@grundfos.com
www.grundfos.com/DK

Estonia
GRUNDFOS Pumps Eesti OÜ
Peterburi tee 92G
11415 Tallinn
Tel.: + 372 606 1690
Fax: + 372 606 1691

Finland
OY GRUNDFOS Pumput AB
Trukkikuja 1
FI-01360 Vantaa
Tel.: +358-(0) 207 889 500

France
Pompes GRUNDFOS Distribution S.A.
Parc d'Activités de Chesnes
57, rue de Malacombe
F-38290 St. Quentin Fallavier (Lyon)
Tel.: +33-4 74 82 15 15
Fax: +33-4 74 94 10 51

Germany
GRUNDFOS GMBH
Schlüterstr. 33
40699 Erkrath
Tel.: +49-(0) 211 929 69-0
Fax: +49-(0) 211 929 69-3799
E-mail: infoservice@grundfos.de
Service in Deutschland:
kundendienst@grundfos.de

Greece
GRUNDFOS Hellas A.E.B.E.
20th km. Athinon-Markopoulou Av.
P.O. Box 71
GR-19002 Peania
Tel.: +0030-210-66 83 400
Fax: +0030-210-66 46 273

Hong Kong
GRUNDFOS Pumps (Hong Kong) Ltd.
Unit 1, Ground floor, Siu Wai industrial Centre
29-33 Wing Hong Street & 68 King Lam Street, Cheung Sha Wan
Kowloon
Tel.: +852-27861706 / 27861741
Fax: +852-27858664

Hungary
GRUNDFOS Hungária Kft.
Tópark u. 8
H-2045 Törökbálint
Tel.: +36-23 511 110
Fax: +36-23 511 111

India
GRUNDFOS Pumps india Private Limited
118 Old Mahabalipuram Road
Thoraipakkam
Chennai 600 097
Tel.: +91-44 2496 6800

Indonesia
PT GRUNDFOS Pompa
Graha intirub Lt. 2 & 3
Jln. Cililitan Besar No.454. Makasar,
Jakarta Timur
ID-Jakarta 13650
Tel.: +62 21-469-51900
Fax: +62 21-460 6910 / 460 6901

Ireland
GRUNDFOS (Ireland) Ltd.
Unit A, Merrywell Business Park
Ballymount Road Lower
Dublin 12
Tel.: +353-1-4089 800
Fax: +353-1-4089 830

Italy
GRUNDFOS Pompe Italia S.r.l.
Via Gran Sasso 4
I-20060 Truccazzano (Milano)
Tel.: +39-02-95838112
Fax: +39-02-95309290 / 95838461

Japan
GRUNDFOS Pumps K.K.
1-2-3, Shin-Miyakoda, Kita-ku
Hamamatsu
431-2103 Japan
Tel.: +81 53 428 4760
Fax: +81 53 428 5005

Korea
GRUNDFOS Pumps Korea Ltd.
6th Floor, Aju Building 679-5
Yeoksam-dong, Kangnam-ku, 135-916
Seoul, Korea
Tel.: +82-2-5317 600
Fax: +82-2-5633 725

Latvia
SIA GRUNDFOS Pumps Latvia
Deglava biznesa centrs
Augusta Deglava ielā 60
LV-1035, Rīga,
Tel.: + 371 714 9640, 7 149 641
Fax: + 371 914 9646

Lithuania
GRUNDFOS Pumps UAB
Smolensko g. 6
LT-03201 Vilnius
Tel.: + 370 52 395 430
Fax: + 370 52 395 431

Malaysia
GRUNDFOS Pumps Sdn. Bhd.
7 Jalan Peguam U1/25
Glenmarie industrial Park
40150 Shah Alam, Selangor
Tel.: +60-3-5569 2922
Fax: +60-3-5569 2866

Mexico
Bombas GRUNDFOS de México S.A. de C.V.
Boulevard TLC No. 15
Parque industrial Stiva Aeropuerto
Apodaca, N.L. 66600
Tel.: +52-81-8144 4000
Fax: +52-81-8144 4010

Netherlands
GRUNDFOS Netherlands
Veluwezoom 35
1326 AE Almere
Postbus 22015
1302 CA ALMERE
Tel.: +31-88-478 6336
Fax: +31-88-478 6332
E-mail: info_gnl@grundfos.com

New Zealand
GRUNDFOS Pumps NZ Ltd.
17 Beatrice Tinsley Crescent
North Harbour Industrial Estate
Albany, Auckland
Tel.: +64-9-415 3240
Fax: +64-9-415 3250

Norway
GRUNDFOS Pumper A/S
Strømsveien 344
Postboks 235, Leirdal
N-1011 Oslo
Tel.: +47-22 90 47 00
Fax: +47-22 32 21 50

Poland
GRUNDFOS Pompy Sp. z o.o.
ul. Klonowa 23
Baranowo k. Poznania
PL-62-081 Przeźmierowo
Tel.: (+48-61) 650 13 00
Fax: (+48-61) 650 13 50

Portugal
Bombas GRUNDFOS Portugal, S.A.
Rua Calvet de Magalhães, 241
Apartado 1079
P-2770-153 Paço de Arcos
Tel.: +351-21-440 76 00
Fax: +351-21-440 76 90

Romania
GRUNDFOS Pompe România SRL
S-PARK BUSINESS CENTER, Clădirea A2, etaj 2
Str. Tipografilor, Nr. 11-15, Sector 1, Cod 013714
Bucuresti, Romania
Tel.: 004 021 2004 100
E-mail: romania@grundfos.ro

Russia
ООО Грундфос Россия
ул. Школьная, 39-41
Москва, RU-109544, Russia
Тел. (+7) 495 564-88-00 (495) 737-30-00
Факс (+7) 495 564 8811
E-mail grundfos.moscow@grundfos.com

Serbia
Grundfos Srbija d.o.o.
Omladinskih brigada 90b
11070 Novi Beograd
Tel.: +381 11 2258 740
Fax: +381 11 2281 769
www.rs.grundfos.com

Singapore
GRUNDFOS (Singapore) Pte. Ltd.
25 Jalan Tukang
Singapore 619264
Tel.: +65-6681 9688
Faxax: +65-6681 9689

Slovakia
GRUNDFOS s.r.o.
Prievozská 4D 821 09 BRATISLAVA
Tel.: +421 2 5020 1426
sk.grundfos.com

Slovenia
GRUNDFOS LJUBLJANA, d.o.o.
Leskoškova 9e, 1122 Ljubljana
Tel.: +386 (0) 1 568 06 10
Fax: +386 (0)1 568 06 19
E-mail: tehnika-si@grundfos.com

South Africa
GRUNDFOS (PTY) LTD
16 Lascelles Drive, Meadowbrook Estate
1609 Germiston, Johannesburg
Tel.: (+27) 10 248 6000
Fax: (+27) 10 248 6002
E-mail: lgradidge@grundfos.com

Spain
Bombas GRUNDFOS España S.A.
Camino de la Fuentecilla, s/n
E-28110 Algete (Madrid)
Tel.: +34-91-848 8800
Fax: +34-91-628 0465

Sweden
GRUNDFOS AB
Box 333 (Lunnagårdsgatan 6)
431 24 Mölndal
Tel.: +46 31 332 23 000
Fax: +46 31 331 94 60

Switzerland
GRUNDFOS Pumpen AG
Bruggacherstrasse 10
CH-8117 Fällanden/ZH
Tel.: +41-44-806 8111
Fax: +41-44-806 8115

Taiwan
GRUNDFOS Pumps (Taiwan) Ltd.
7 Floor, 219 Min-Chuan Road
Taichung, Taiwan, R.O.C.
Tel.: +886-4-2305 0868
Fax: +886-4-2305 0878

Thailand
GRUNDFOS (Thailand) Ltd.
92 Chaloem Phrakiat Rama 9 Road
Dokmai, Pravej, Bangkok 10250
Tel.: +66-2-725 8999
Fax: +66-2-725 8998

Turkey
GRUNDFOS POMPA San. ve Tic. Ltd. Sti.
Gebze Organize Sanayi Bölgesi
Ihsan dede Caddesi
2. yol 200. Sokak No. 204
41490 Gebze/ Kocaeli
Tel.: +90 - 262-679 7979
Fax: +90 - 262-679 7905
E-mail: satis@grundfos.com

Ukraine
ТОВ "ГРУНДФОС УКРАЇНА"
Бізнес Центр Європа
Столичне шосе, 103
м. Київ, 03131, Україна
Tel.: (+38 044) 237 04 00
Fax: (+38 044) 237 04 01
E-mail: ukraine@grundfos.com

United Arab Emirates
GRUNDFOS Gulf Distribution
P.O. Box 16768
Jebel Ali Free Zone, Dubai
Tel.: +971 4 8815 166
Fax: +971 4 8815 136

United Kingdom
GRUNDFOS Pumps Ltd.
Grovebury Road
Leighton Buzzard/Beds. LU7 4TL
Tel.: +44-1525-850000
Fax: +44-1525-850011

U.S.A.
Global Headquarters for WU
856 Koomey Road
Brookshire, Texas 77423 USA
Phone: +1-630-236-5500

Uzbekistan
Grundfos Tashkent, Uzbekistan
The Representative Office of Grundfos
Kazakhstan in Uzbekistan
38a, Oybek street, Tashkent
Tel.: (+998) 71 150 3290 / 71 150 3291
Fax: (+998) 71 150 3292

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96604141 **04.2022**
ECM: 1340559

GRUNDFOS Holding A/S
Poul Due Jensens Vej 7
DK-8850 Bjerringbro
Tel: +45 87 50 14 00
www.grundfos.com

GRUNDFOS