

Unilift AP12



TM00 5738 0895

Fig. 15 Unilift AP12

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

The pump is suitable for:

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

Maximum particle size: 12 mm.

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

Approvals

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

Automatic operation

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

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

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

Pump sleeve and housing

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

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

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

Discharge port

All Unilift AP12 pumps have a threaded vertical discharge port.

Unilift AP12.40: Rp 1½"

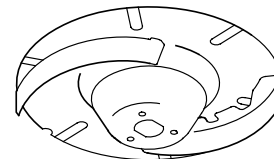
Unilift AP12.50: Rp 2".

Shaft and bearings

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

Impeller

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



TM00 5477 0895

Fig. 16 Impeller

Shaft seal

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

Motor

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

Enclosure class: IP 68

Insulation class: F (155°C)

Cable type: H07RN-F.

Single-phase motors have built-in thermal protection.

Materials

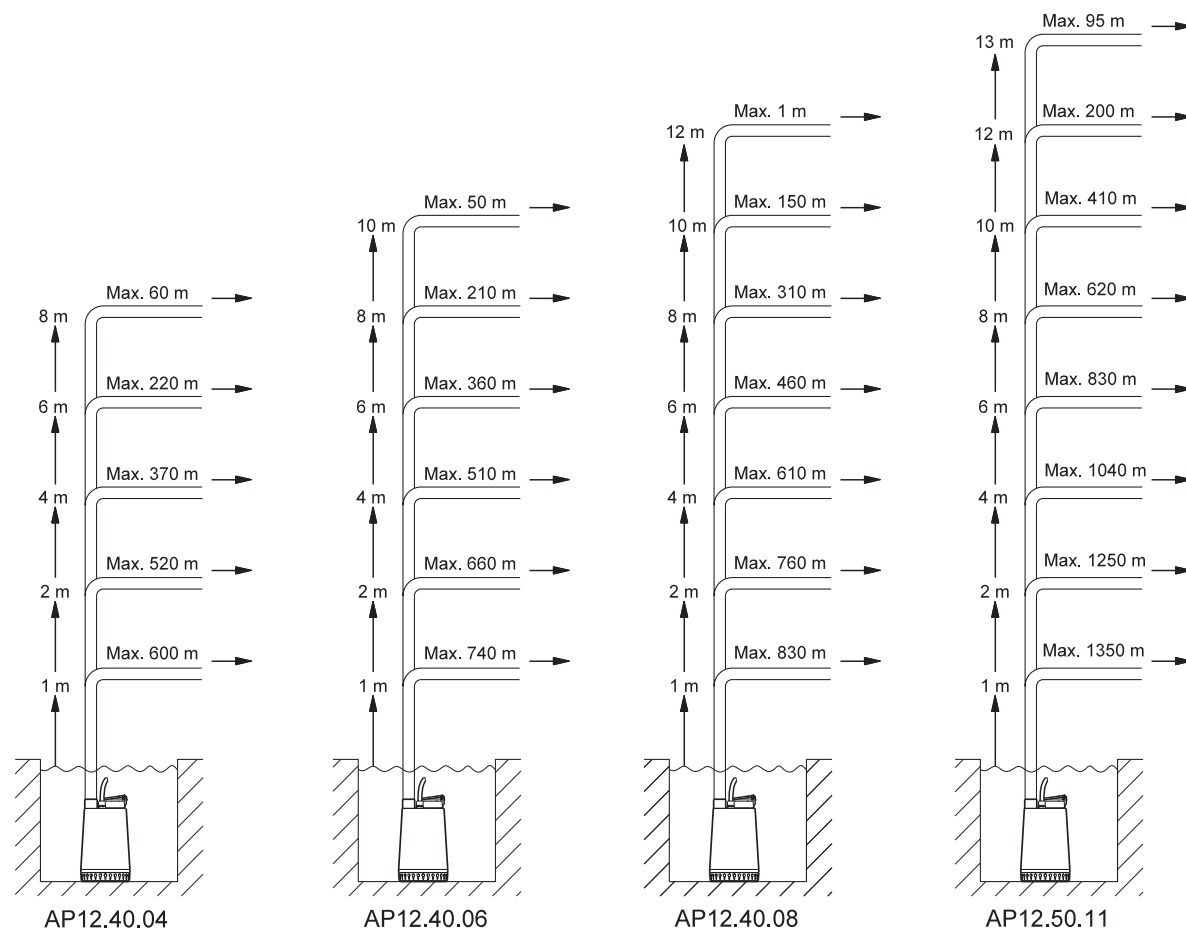
Component	Material	DIN W.-Nr.	AISI
Pump housing	Stainless steel	1.4301	304
Riser pipe	Stainless steel	1.4301	304
Impeller	Stainless steel	1.4301	304
Pump sleeve	Stainless steel	1.4401	316
Shaft	Stainless steel	1.4305	
Bearings	Heavy-duty prelubricated ball bearings		
O-rings	NBR rubber		
Screws	Stainless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

Selection

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

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

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



TM03 1878 3305

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

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

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

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

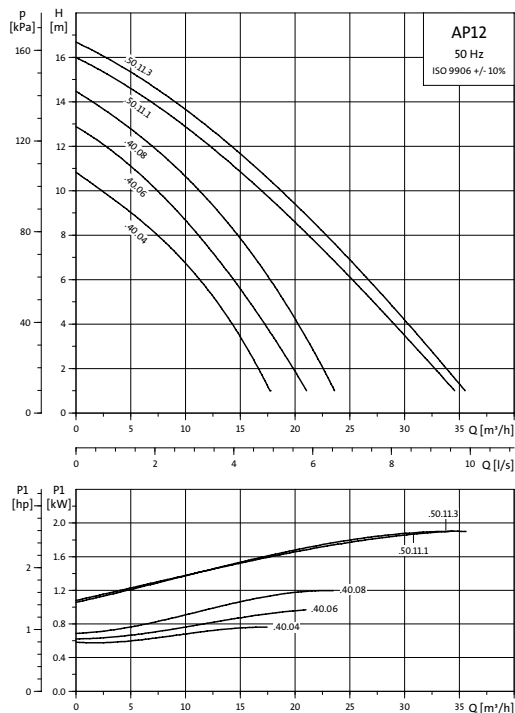


Fig. 18 Performance curves

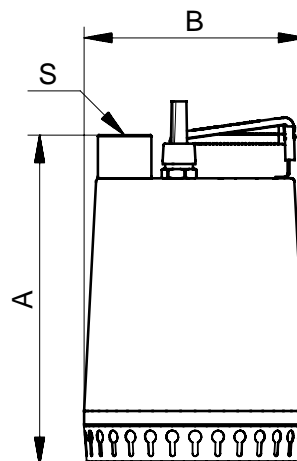
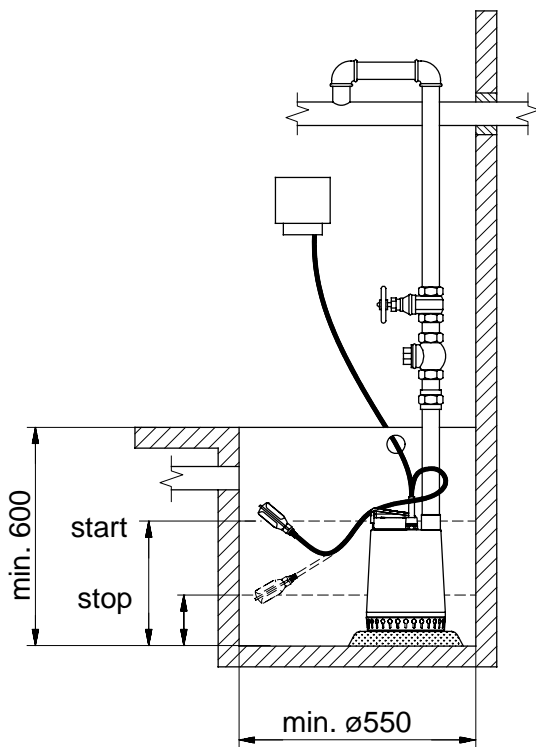


Fig. 19 Dimensions

TM00 5523 0995

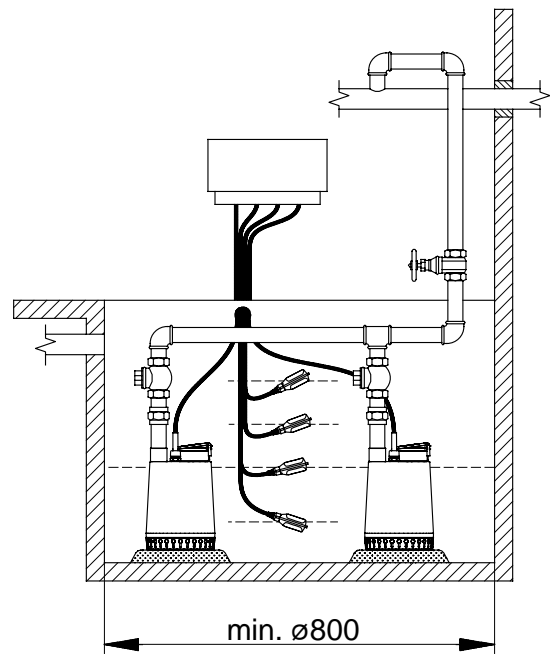
Pump type	Voltage [V]	P ₁ [kW]	P ₂ [kW]	I _n [A]	Cos φ	I _{start} I _n	Dimensions [mm]			Weight [kg]
							A	B	S	
AP12.40.04.1	1 x 230	0.8	0.4	3.0	0.99	3.8	321	216	Rp 1½	11.0
AP12.40.04.A1	1 x 230	0.8	0.4	3.0	0.99	3.8	321	216	Rp 1½	11.0
AP12.40.04.3	3 x 230	0.8	0.4	2.2	0.85	4.7	321	216	Rp 1½	9.7
AP12.40.04.A.3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

Unilift AP12 installations



TM03 1896 3305

Fig. 20 Unilift AP12 installation, one pump



TM00 5539 0995

Fig. 21 Unilift AP12 installation, two pumps

Adjustment of cable length for float switch

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

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

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

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