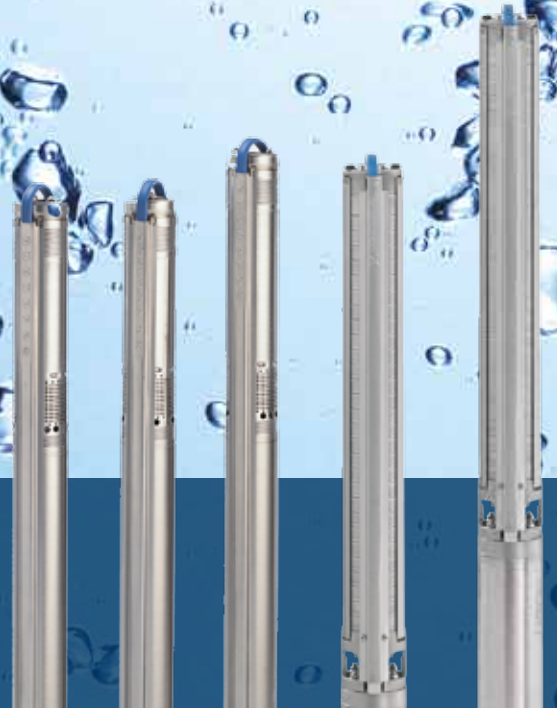


Submersible small bore pump range

Includes

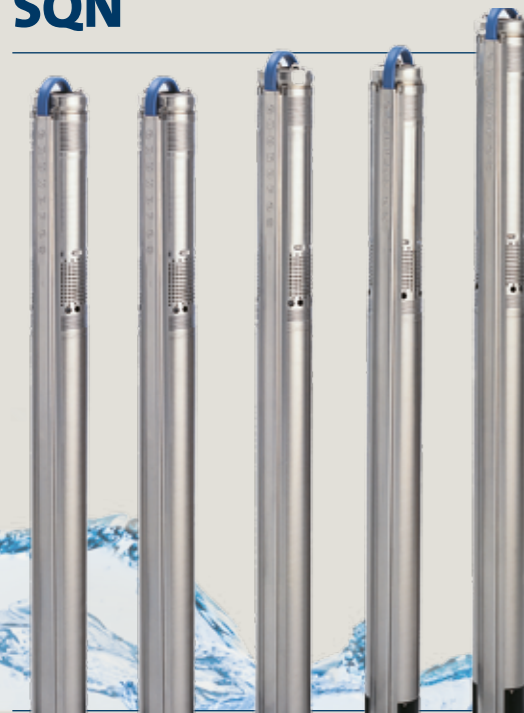
BasicLine
by GRUNDFOS

The Grundfos 3" and 4" submersible pump range offers high efficiency, high sand resistance and reliability for a wide variety of applications.



be
think
innovate

GRUNDFOS 



SQN pumps feature an innovative motor design incorporating permanent-magnet technology. By combining permanent-magnet motors and a Grundfos micro-frequency converter, we are able to deliver unmatched performance coupled with unique pump protection.

SQN pump models operate at a constant speed much like today's conventional pumps. The difference is that SQN delivers the benefits of an electronically controlled permanent magnet motor that cannot be achieved with a conventional induction motor.



PUMP & MOTOR

Features

Constant pressure operation

Using a CU 300/301 controller with the SQN your water pressure will always remain constant regardless of how many family members are consuming water. As more taps are opened, the pump automatically increases its speed, maintaining your chosen pressure at any flow rate.

Excellent starting capabilities

The soft starter minimises the risk of wear on the pump and prevents overloading of the mains during start-up. Its soft-start system also reduces water hammering, light flickering and other electrical disturbances.

Overvoltage and undervoltage protection

The integrated protection prevents damage to the motor in case the supply voltage moves outside the permissible voltage range.

Overload protection

If the pump is exposed to heavy load the motor will automatically reduce its speed, or if the pump is blocked it automatically stops pumping. This eliminates the need for motor protection

Over-heating protection

As an extra protection, the electronic unit has a built-in temperature sensor. When the temperature exceeds a critical limit, the pump is stopped and when the temperature has dropped, the pump automatically starts.

Protection against upthrust

The pumps are fitted with an upthrust bearing protecting both pump and motor against upthrust, thus preventing breakdown during the critical start-up phase.

Generator friendly

Minimum generator size is 10% higher than the input power required for the pump.

Applications

SQN

- Groundwater supply
- Small irrigation systems
- Pressure boosting
- Liquid transfer in tanks

Operating Conditions

pH values

5 to 8

Liquid temperature

0°C to 35°C

Technical Data

Mains voltage

1 x 240 V, 50 Hz

Enclosure class

IP68

Insulation class

F

Installation depth

Max. 150 m below static water level

Pump diameter

74 mm

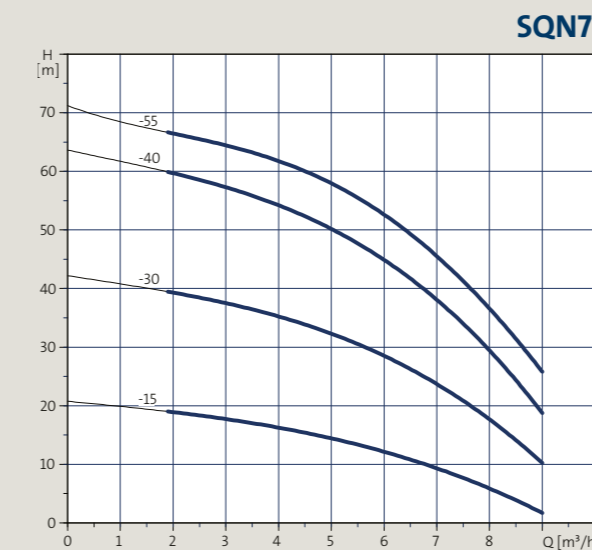
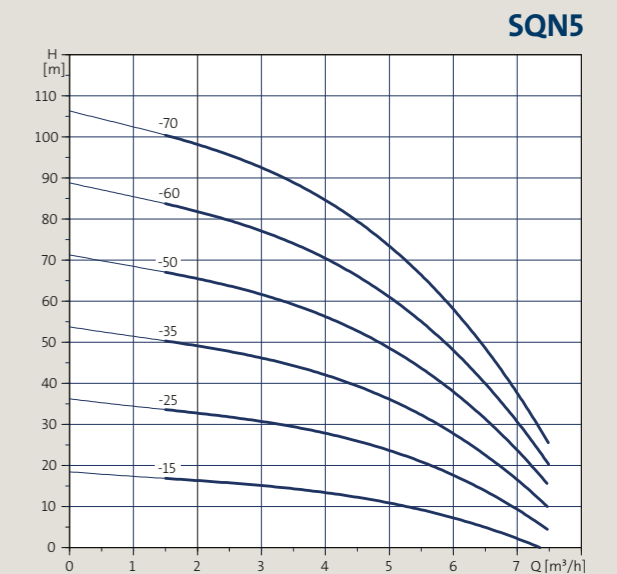
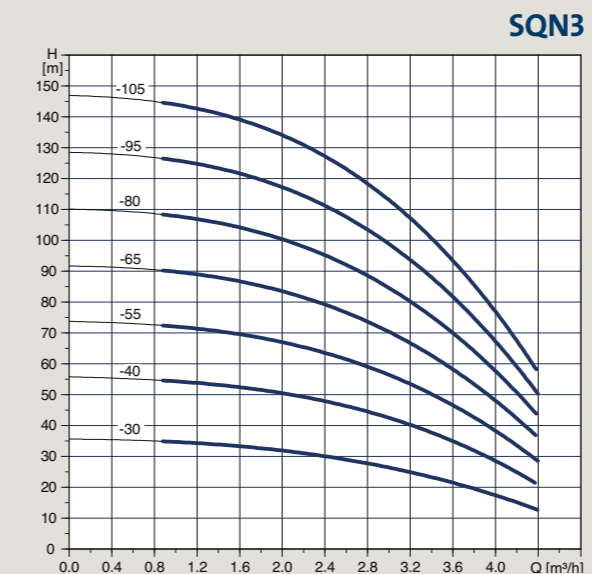
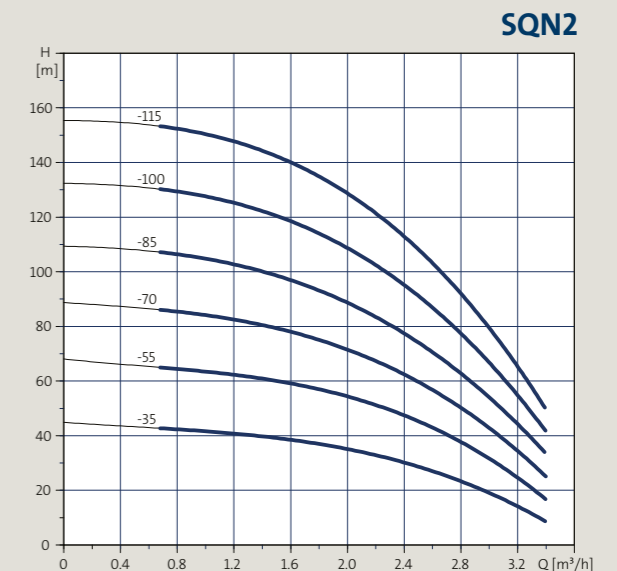
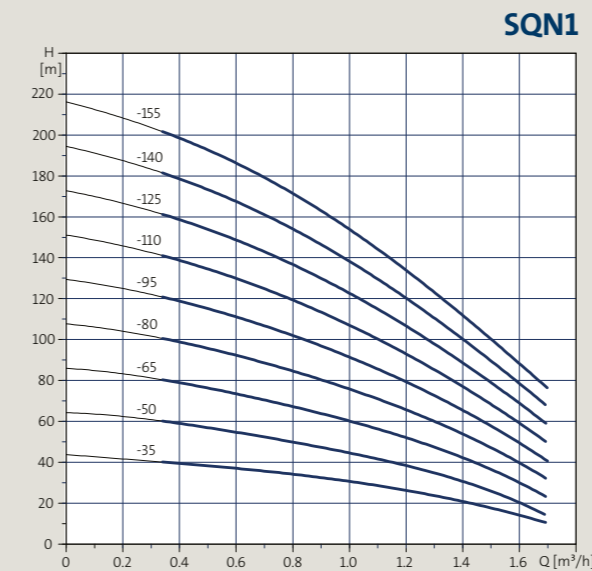
Borehole diameter

Min. 76 mm

Approvals and markings

CE, UL, cUL

Performance





SQEN pumps feature an innovative motor design incorporating permanent-magnet technology. By combining permanent-magnet motors and a Grundfos micro-frequency converter, we are able to deliver unmatched performance coupled with unique pump protection.

The SQEN adds the ability to communicate with the CU300 or CU301 controller. These controllers can allow the pump to provide constant pressure by varying the speed of the pump to match the water demand.



PUMP & MOTOR

Features

Constant pressure operation

Using a CU 300/301 controller with the SQEN your water pressure will always remain constant regardless of how many family members are consuming water. As more taps are opened, the pump automatically increases its speed, maintaining your chosen pressure at any flow rate.

Excellent starting capabilities

The soft starter minimises the risk of wear on the pump and prevents overloading of the mains during start-up. Its soft-start system also reduces water hammering, light flickering and other electrical disturbances.

Overvoltage and undervoltage protection

The integrated protection prevents damage to the motor in case the supply voltage moves outside the permissible voltage range.

Overload protection

If the pump is exposed to heavy load the motor will automatically reduce its speed, or if the pump is blocked it automatically stops pumping. This eliminates the need for motor protection

Over-heating protection

As an extra protection, the electronic unit has a built-in temperature sensor. When the temperature exceeds a critical limit, the pump is stopped and when the temperature has dropped, the pump automatically starts.

Protection against upthrust

The pumps are fitted with an upthrust bearing protecting both pump and motor against upthrust, thus preventing breakdown during the critical start-up phase.

Generator friendly

Minimum generator size is 10% higher than the input power required for the pump.

Applications

SQEN

- Groundwater supply
- Small irrigation systems
- Light industrial use
- Constant pressure boosting
- Liquid transfer in tanks

Operating Conditions

pH values

5 to 8

Liquid temperature

0°C to 35°C

Technical Data

Mains voltage

1 x 240 V, 50 Hz

Enclosure class

IP68

Insulation class

F

Installation depth

Max. 150 m below static water level

Pump diameter

74 mm

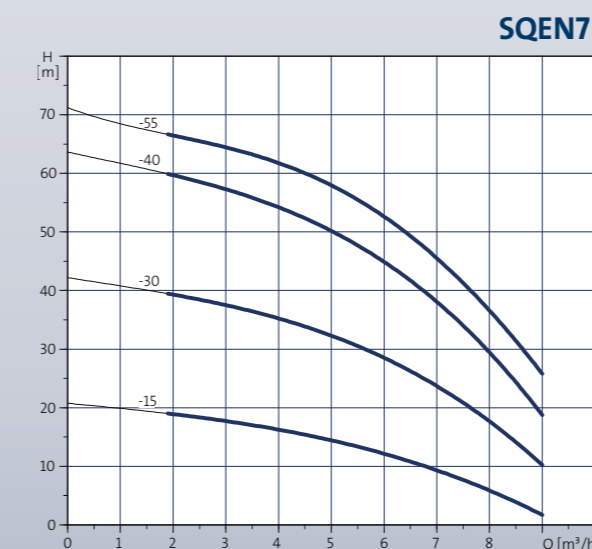
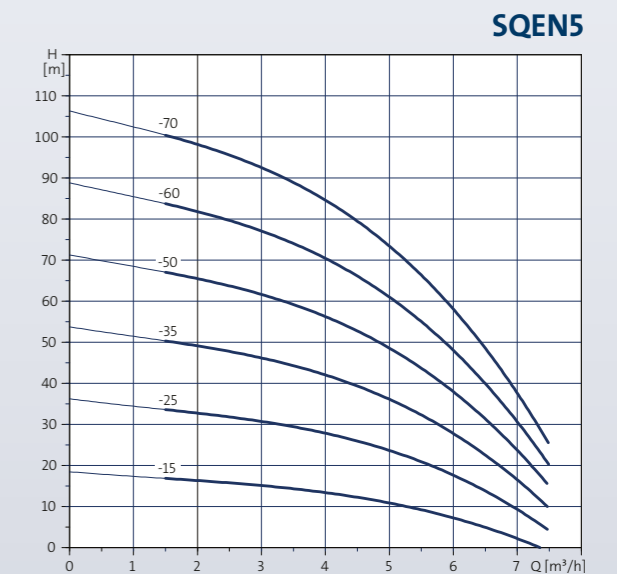
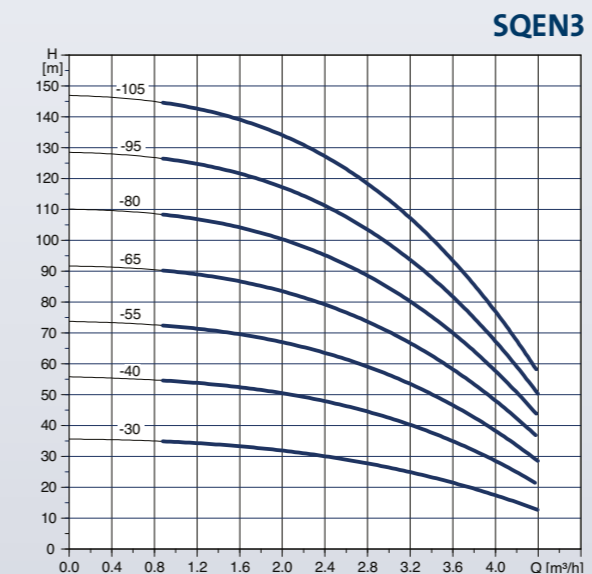
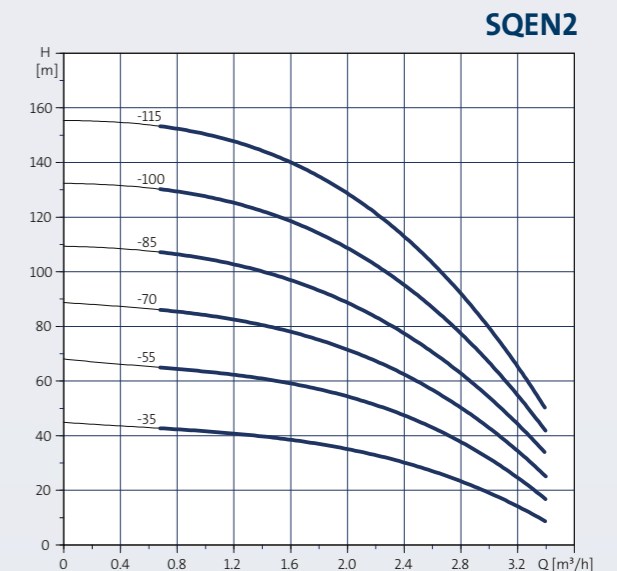
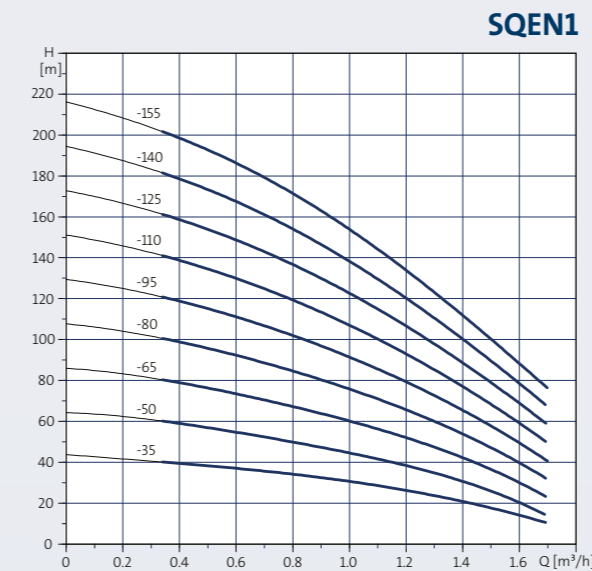
Borehole diameter

Min. 76 mm

Approvals and markings

CE, UL, cUL

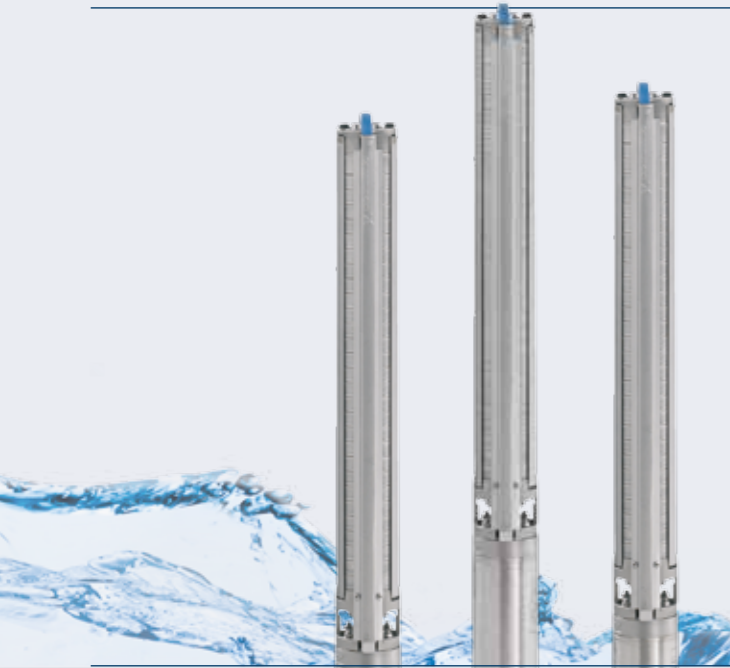
Performance



GRUNDFOS SUBMERSIBLE PUMP SELECTION CHART

SQN		HEAD (M)												HEAD (M)							
Flow		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	
(m ³ /h)	L/min																				
0.5	8	SQN1-35	SQN1-35	SQN1-35	SQN1-35	SQN1-50	SQN1-65	SQN1-65	SQN1-65	SQN1-80	SQN1-95	SQN1-95	SQN1-110	SQN1-110	SQN1-125	SQN1-125	SQN1-140	SQN1-140	SQN1-155	SQN1-155	
1	17	SQN1-35	SQN1-35	SQN1-35	SQN1-50	SQN1-65	SQN1-65	SQN1-80	SQN1-95	SQN1-95	SQN1-110	SQN1-110	SQN1-125	SQN1-140	SQN1-140	SQN1-155					
1.5	25	SQN2-35	SQN2-35	SQN2-35	SQN2-35	SQN2-55	SQN2-55	SQN2-70	SQN2-70	SQN2-85	SQN2-85	SQN2-100	SQN2-100	SQN2-115	SQN2-115						
2	33	SQN2-35	SQN2-35	SQN2-35	SQN2-55	SQN2-55	SQN2-70	SQN2-70	SQN2-85	SQN2-85	SQN2-100	SQN2-115	SQN2-115	SQN2-115							
3	50	SQN2-35	SQN2-35	SQN3-30	SQN3-40	SQN3-55	SQN3-65	SQN3-65	SQN3-80	SQN3-95	SQN3-95	SQN3-105									
4	67	SQN5-15	SQN5-25	SQN5-35	SQN5-50	SQN5-50	SQN5-60	SQN5-60	SQN5-70												
5	83	SQN5-15	SQN5-25	SQN5-35	SQN5-50	SQN5-50	SQN5-60	SQN5-70													
6	100	SQN7-15	SQN7-30	SQN7-30	SQN7-40	SQN7-55															
7	117	SQN7-15	SQN7-30	SQN7-30	SQN7-40																
8	133	SQN7-30	SQN7-40																		

SP 4"		HEAD (M)													HEAD (M)														
Flow		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	250	300	350	400	450	500		
(m ³ /h)	L/min																												
0.5	8	SP1A-9	SP1A-9	SP1A-9	SP1A-9	SP1A-14	SP1A-14	SP1A-14	SP1A-18	SP1A-18	SP1A-21	SP1A-21	SP1A-28	SP1A-28	SP1A-28	SP1A-28	SP1A-36	SP1A-36	SP1A-36	SP1A-42	SP1A-42	SP1A-50							
1	17	SP1A-9	SP1A-9	SP1A-9	SP1A-14	SP1A-14	SP1A-18	SP1A-18	SP1A-21	SP1A-28	SP1A-28	SP1A-36	SP1A-36	SP1A-42	SP1A-42	SP1A-50	SP1A-50	SP1A-50	SP1A-57	SP1A-57									
1.5	25	SP2A-6	SP2A-6	SP2A-6	SP2A-9	SP2A-13	SP2A-13	SP2A-18	SP2A-18	SP2A-23	SP2A-23	SP2A-23	SP2A-28	SP2A-28	SP2A-33	SP2A-33	SP2A-33	SP2A-40	SP2A-40	SP2A-40	SP2A-40	SP2A-55	SP2A-65						
2	33	SP2A-6	SP2A-6	SP2A-9	SP2A-13	SP2A-13	SP2A-18	SP2A-18	SP2A-23	SP2A-23	SP2A-28	SP2A-28	SP2A-33	SP2A-33	SP2A-40	SP2A-40	SP2A-40	SP2A-48	SP2A-48	SP2A-48	SP2A-55	SP2A-65	SP2A-75	SP2A-90					
3	50	SP3A-6	SP3A-6	SP3A-9	SP3A-9	SP3A-12	SP3A-15	SP3A-18	SP3A-80	SP3A-22	SP3A-25	SP3A-25	SP3A-29	SP3A-29	SP3A-33	SP3A-33	SP3A-39	SP3A-39	SP3A-39	SP3A-45	SP3A-45	SP3A-60							
4	67	SP5A-4	SP5A-4	SP5A-6	SP5A-8	SP5A-12	SP5A-12	SP5A-17	SP5A-17	SP5A-21	SP5A-21	SP5A-25	SP5A-25	SP5A-33	SP5A-33	SP5A-33	SP5A-38	SP5A-38	SP5A-38	SP5A-44	SP5A-44	SP5A-52	SP5A-75	SP5A-75	SP5A-85				
5	83	SP5A-4	SP5A-6	SP5A-8	SP5A-12	SP5A-12	SP5A-17	SP5A-17	SP5A-21	SP5A-25	SP5A-25	SP5A-33	SP5A-33	SP5A-33	SP5A-38	SP5A-38	SP5A-38	SP5A-44	SP5A-52	SP5A-52	SP5A-52	SP5A-75	SP5A-75						
6	100	SP7-3	SP7-5	SP7-8	SP7-8	SP7-12	SP7-12	SP7-17	SP7-17	SP7-23	SP7-23	SP7-23	SP7-27	SP7-27	SP7-27	SP7-31	SP7-37	SP7-37	SP7-37	SP7-37	SP7-42	SP7-51	SP7-59	SP7-71	SP7-86	SP7-100	SP7-100		
7	117	SP7-3	SP7-5	SP7-8	SP7-12	SP7-12	SP7-17	SP7-17	SP7-23	SP7-23	SP7-23	SP7-27	SP7-27	SP7-31	SP7-31	SP7-37	SP7-37	SP7-37	SP7-42	SP7-42	SP7-51	SP7-59	SP7-71	SP7-86	SP7-100	SP7-100			
9	150	SP9-4	SP9-4	SP9-8	SP9-8	SP9-13	SP9-13	SP9-13	SP9-16	SP9-18	SP9-21	SP9-21	SP9-23	SP-25	SP9-29	SP9-29	SP9-32	SP9-32	SP9-36	SP9-36	SP9-40	SP9-48	SP9-60	SP9-69	SP9-79	SP9-46			
11	183	SP11-3	SP11-5	SP11-7	SP11-11	SP11-11	SP11-15	SP11-15	SP11-20	SP11-20	SP11-24	SP11-24	SP11-27	SP11-33	SP11-33	SP11-33	SP11-37												
14	233	SP14-4	SP14-6	SP14-8	SP14-11	SP14-13	SP14-15	SP14-17	SP14-20	SP14-20	SP14-23	SP14-27	SP14-27	SP14-31															
16	267	SP14-4	SP14-6	SP14-8	SP14-11	SP14-15	SP14-17	SP14-20	SP14-23	SP14-23	SP14-27	SP14-31																	



The Grundfos SP is a 4-inch multi-stage, submersible pump designed for operation in boreholes. The SP is made entirely of corrosion-resistant stainless steel, offering high operating reliability regardless of the application. The SP range offers high efficiency along with great resistance to sand and other abrasive particles.



Features

Long life

Grundfos SP pumps are made from 100% high-grade corrosion resistant stainless steel inside and out, to ensure a long life (DIN 1.4301 - AISI 304). Higher grades are available if aggressive liquids are present (AISI316 and AISI904).

Optimised hydraulics

For better performance and fewer breakdowns

Sand flushed out

Octagonal bearings and sand flush channels remove particles with the pumped water ensuring less abrasive wear

Built-in non-return valve

All SP pumps are delivered with a non-return valve to minimise the risk of water hammering damage.

Customised solutions

Need something extra special? Ask us!

Applications

- Groundwater supply
- Large scale irrigation
- Groundwater lowering
- Pressure boosting
- Industrial applications (heavy duty)
- Dewatering
- Stock watering

Operating Conditions

Liquid temperature

0°C to 40°C degrees with 0.15 m/s cooling flow

Higher flow past motor equals higher permissible liquid temperature. Consult Grundfos for further information.

Technical Data

Mains voltage

1 x 240 V, 50 Hz
3 x 415 V, 50Hz

Enclosure class

IP68

Insulation class

F

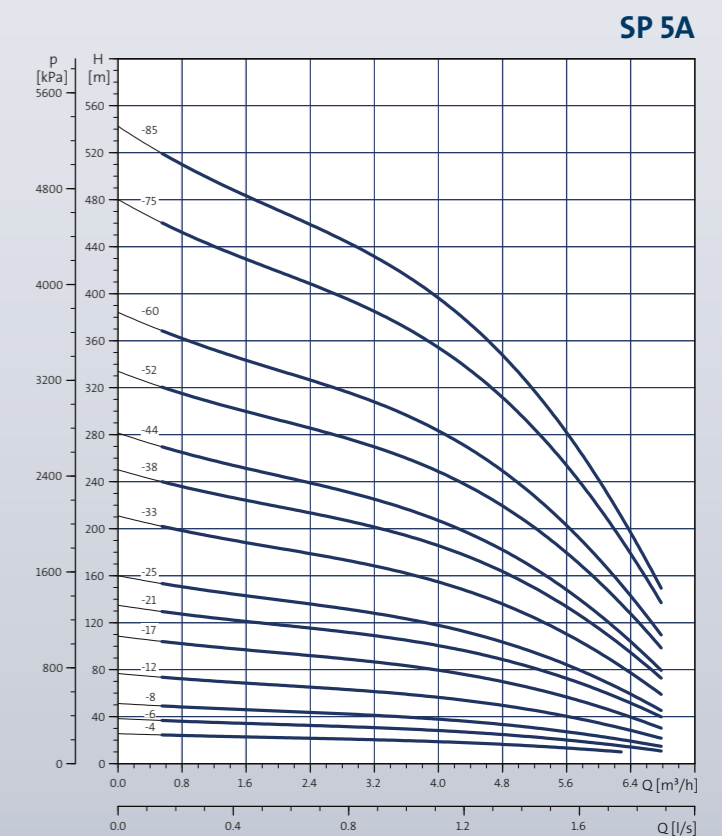
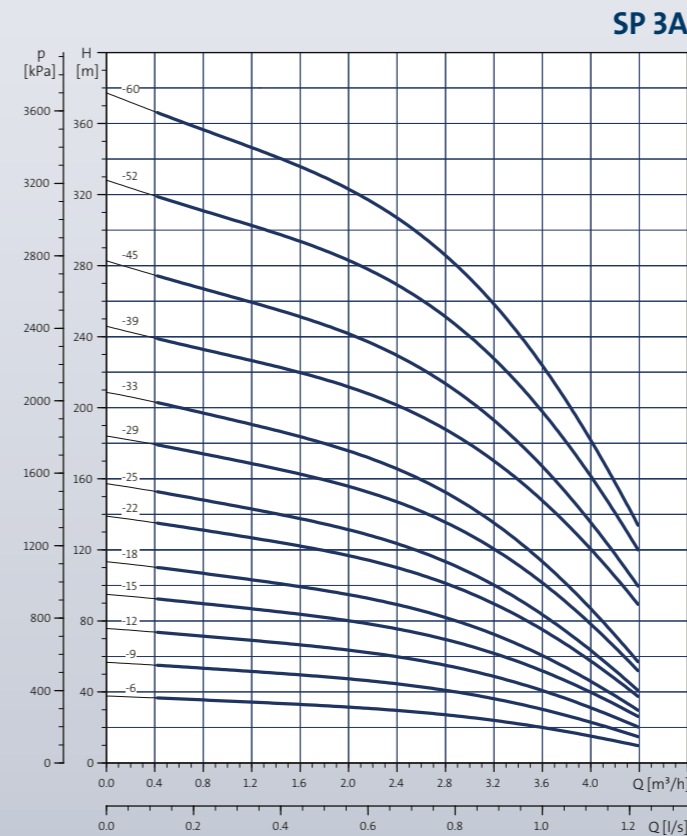
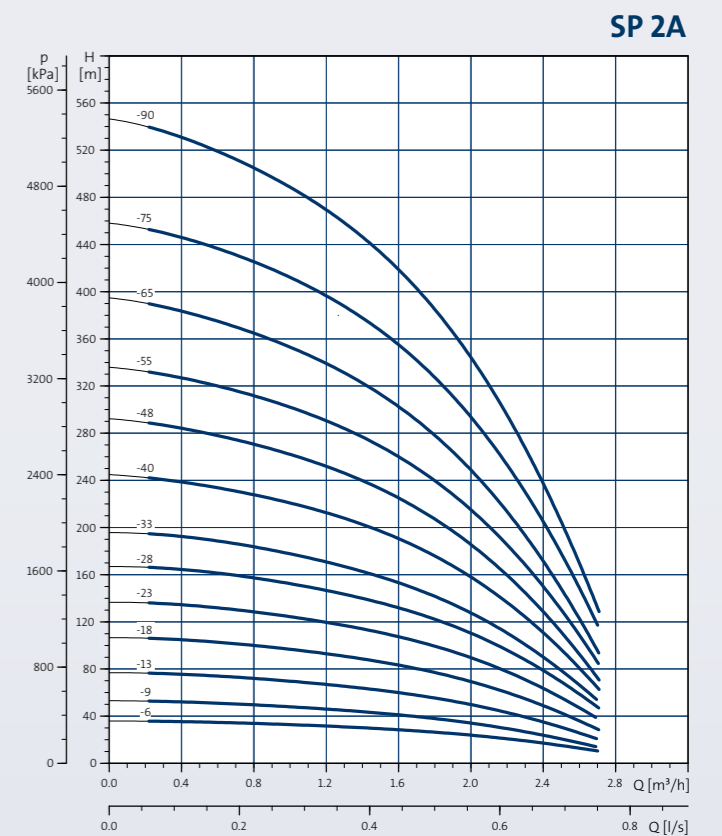
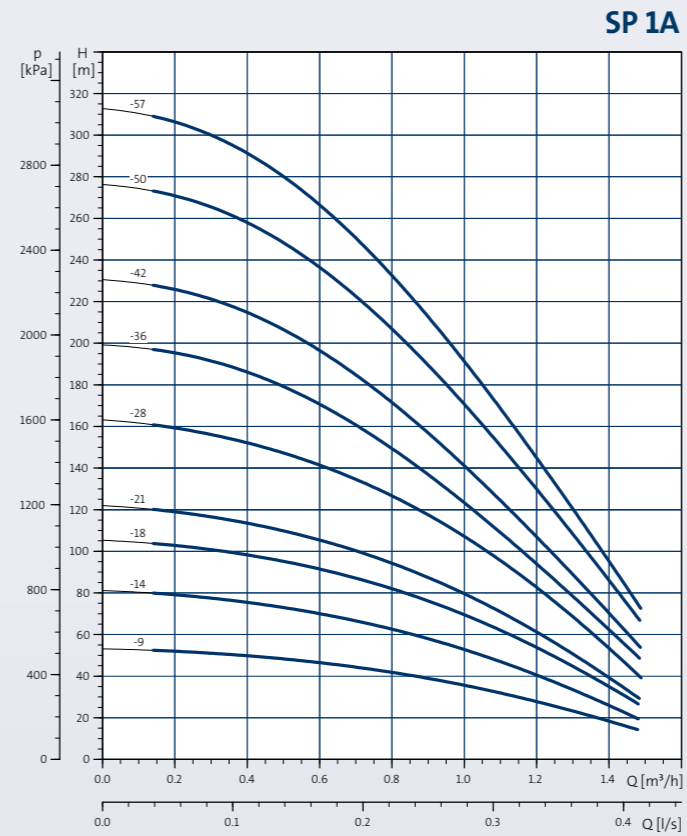
Installation depth

Max. 600 m

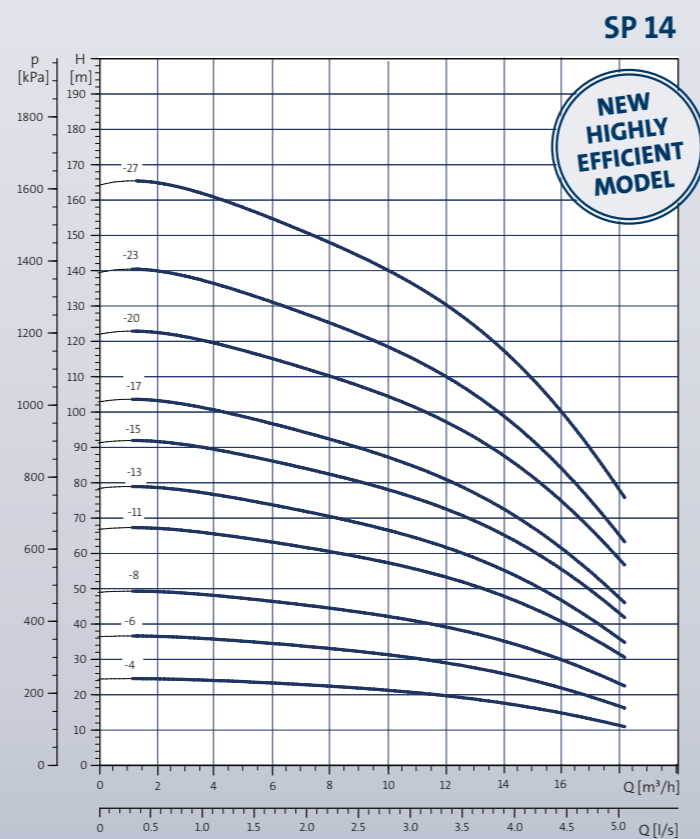
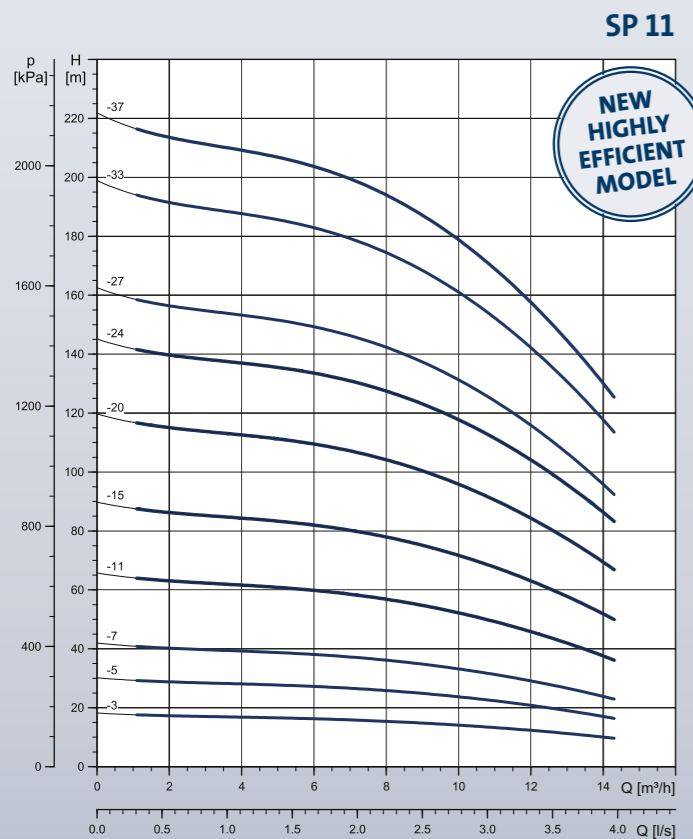
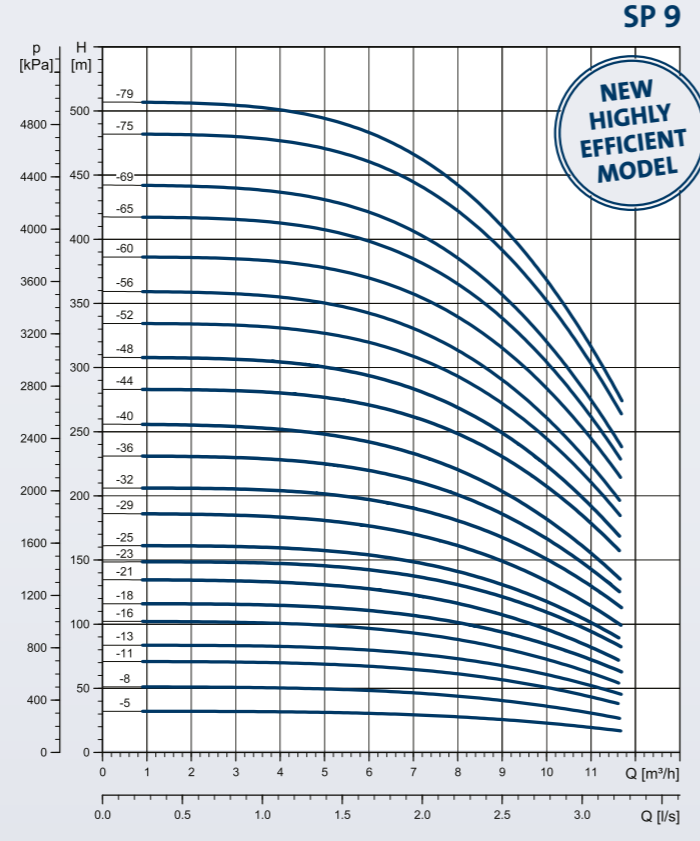
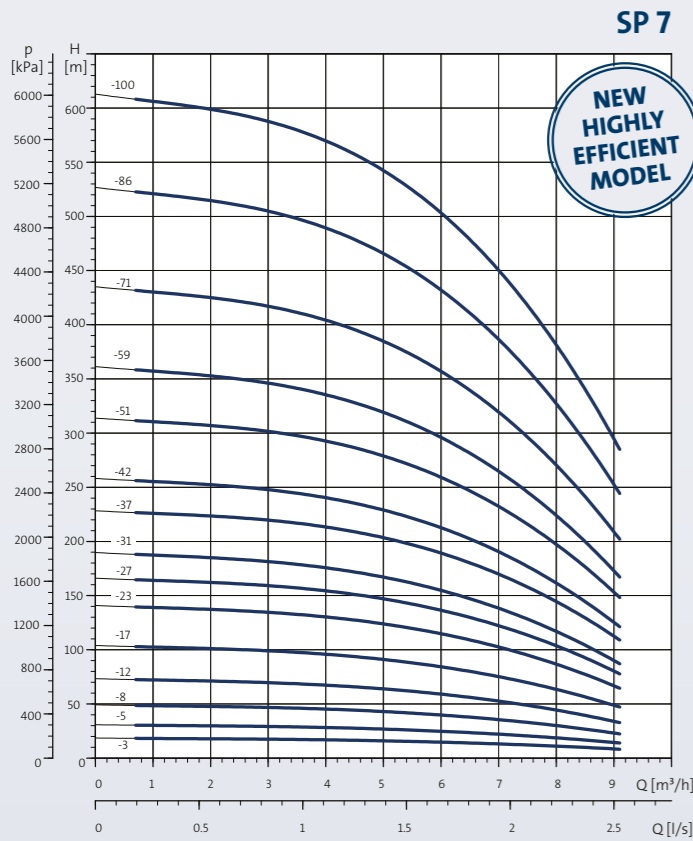
Approvals and markings

UL, CSA, VDE, CE

Performance



Performance Graphs



SQEN Controllers

CU300



CU301



Intelligent control and protection unit designed for the Grundfos SQEN submersible pump.

Protects against:

- ✓ No contact
- ✓ Dry running
- ✓ Speed reduction
- ✓ Overtemperature
- ✓ Overload
- ✓ Sensor alarm
- ✓ Overvoltage
- ✓ Undervoltage

Features

Constant water pressure

Constant pressure is guaranteed meaning you can always get what you expect when you turn on the tap.

Adjustable water pressure

Water pressure can be easily adjusted (from 2 – 5 bar) at any time and will automatically adjust the pressure level to provide instant comfort.

Operation monitoring

As the controller constantly receives signals from the pressure sensor in the pump, if the pressure drops below the desired level, it will automatically operate the pump until the water pressure level is restored.

Service alarm indication

When a fault is present an alarm will be sent to help protect the pump from damage.

CU300 Only*

CU300 (R100/ Grundfos GO Connect required for commissioning)

Increased functionality

- Constant pressure (1-6 bar or 1-10 bar)
- Constant flow (connected to a water meter)
- Constant pressure (dual pump operation)
- Constant water level

Customisable system setup

By connecting to various sensors, the CU300 can be used to setup the customised pumping system in order to deliver constant pressure or constant water level at a tank or reservoir. The CU300 box is suitable for domestic use or small irrigation systems; and small scale professional applications.

CU301 Only

User friendly interface The box displays pump information status in an easy-to-understand graphical way so it is easy to operate and monitor.

Easy to use

The only task for the user is to switch on the box and choose the desired water pressure level through the user friendly operating interface.

Constant Pressure 2-5 bar pressure setting

*Must be programmed by R100 or Grundfos GO

SP Motor Protection

PRO-tect



MP204



Specific submersible pump protection and control device.

Protects against:

- ✓ Dry running
- ✓ Overvoltage
- ✓ Undervoltage
- ✓ Short circuit
- ✓ Phase failure (3 phase version only)

Features

Adaptable installation

Suitable for connection with two wire or three wire single phase motors (up to 2.2 kW) and three phase motors (up to 7.5 kW).

User friendly interface

Easy to use interface displays operational status.

Fast set up

Automatically calibrates with the pump making set up extremely easy.

Flexible design

Free input allows for easy connection to a pressure or float switch.

Automatic restart

Automatic restart if no water present at 10, 22, 45 and 90 minutes.

Easy installation of pump

Eliminating the need to buy and install bore level probes to externally protect against dry running.

Reliable, easy to set up and easy to use motor protection device.

Protects against:

- ✓ Dry running
- ✓ Overload
- ✓ Motor temperature protection (when motor fitted with Tempcon)
- ✓ Current unbalance
- ✓ Phase failure
- ✓ Start/Run capacitor monitoring

Features

Easy installation

Can be mounted onto any wall or back plate, or simply slide into place on a mounting rail. The simple menu completes set-up in just 2 minutes.

Monitors energy

Acts as a monitoring device for energy consumption, so you are always aware of pump running costs.

Control from a distance

MP204 solution can be connected to any SCADA system, allowing you remote access to your pump data anywhere.

