

SCALA1 System



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1. Product description



TM065679

SCALA1 System

SCALA1 System is a unit used for the management and distribution of rainwater, and it is suitable for domestic rainwater harvesting, flushing of toilets, washing machines, floor cleaning systems and car washing. The system consists of the following components:

- SCALA1 self-priming pump
- three-way valve
- water break tank according to EN 1717
- support and mounting screws
- flexible hoses
- float switch with 20-metre cable
- control box
- fresh-water refill valve.

The purpose of the system is to give priority to the use of rainwater over tap water. The system incorporates a backup of mains water supply, which is automatically activated based on the water level inside the rainwater collecting tank. The connection between the integral mains-water tank and the inlet pipe from the collecting tank is closed by a built-in three-way valve. There is also a possibility to override the automatic setting and force supply from water mains.

The SCALA1 System installation is in accordance with the EN 1717 standard, and it guarantees the separation between city water mains and the rainwater collecting tank, preventing pollution of the water mains from backflow.

The system is prepared for feed-pump operation.

SCALA1 System is also equipped with an inside overflow alarm, which will stop the pump if there is loss of fresh water into the connected sewer system.

SCALA1 System has built-in connectivity platform via the SCALA1 pump accessible with the Grundfos GO app.

Further information on the SCALA1 pump can be found here:



QR99735528

Product range

Pump type	Nominal flow rate [m ³ /h]	Max. head [m]
SCALA1 System 3-35	3	35
SCALA1 System 3-45	3	45

Features and benefits

SCALA1 System has the following features and benefits:

- Both automatic and manual changeover between the rainwater tank and the integrated mains-water tank.
- Dry-running protection.
- Overflow alarm to avoid water loss.
- Anti-cycling.
- Self-priming up to 8 metres ensures a stable operation, even if the pump is not fully filled with liquid.
- Noise level below 55 dB(A).
- Alarm indication.
- Automatic start/stop.
- Three-way valve prepared for feed pump (optional accessory).
- Composite construction combined with excellent corrosion-resistant internal components ensure high robustness in operation.
- Setting, control and monitoring via Grundfos GO.
- Scheduling and calendar function.
- Controller interface which displays the operating status.
- Operating status shown on the controller interface, BLE and Grundfos GO app.

Protection features

Dry-running protection

The product incorporates dry-running protection that automatically stops the pump from running without liquid. Dry-running protection means less risk of pump damage and lower maintenance costs.

Micro-leakage detection

The micro-leakage detection prevents the product from starting and stopping too often in case of a minor leakage in the system or if a tap has not been closed completely. The anti-cycling function will stop the pump, and an alarm will be indicated.

The factory setting for this function is on.

Maximum runtime

The maximum runtime function is a timer that can turn the pump off if it runs continuously for a certain amount of time. This time period is adjustable via Grundfos GO app.

Overflow alarm

If the refill valve starts to leak, causing loss of water from the mains through the inner overflow drain, an overflow alarm will be triggered. The pump is stopped and two opposite yellow indicator lights will flash simultaneously on Grundfos Eye. The alarm blocks the system without any audible warning.

The alarm must be reset by switching the button on the back of the pump from **1-Alarm D on** to **0-Alarm D off**. See the figure below.



TM085720

Applications

The SCALA1 system is suitable for domestic and light commercial water supply, where pressure boosting is required.

We recommend the SCALA1 system for the following applications:

- pressure boosting of water from rainwater collection tank, storage tank or ground tank
- pressure boosting of city mains water.

Pumped liquids

The product is suitable for pumping rainwater and thin, non-aggressive and non-explosive liquids without solid particles or fibres or abrasive water.

The product is designed for water with a pH value between 4 and 7, a maximum chloride content of 50 ppm, and a free chlorine content below 0.2 ppm.

Examples of liquids:

- mains water
- rainwater.

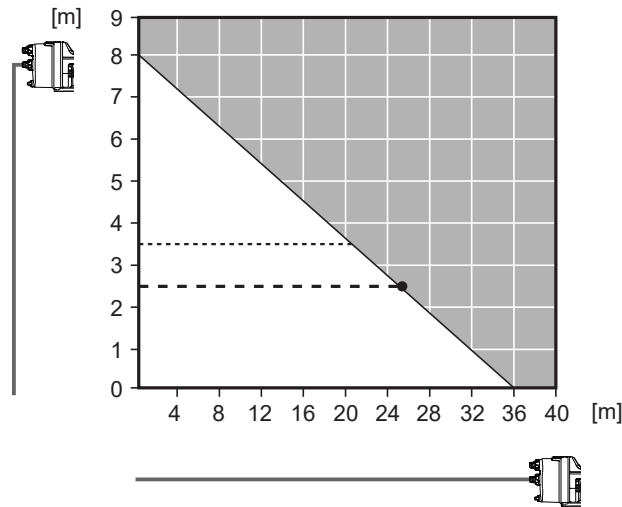
Sand and other impurities in the water can cause wear to the pump and pump blockage. Therefore, we recommend that you install a filter on the inlet side or apply a floating strainer to protect the pump.

Sizing guide

Number of floors	1-5 draw-off points ¹⁾	6-10 draw-off points	11-20 draw-off points
4	SCALA1 System 3-45	-	-
3	SCALA1 System 3-45	SCALA1 System 3-45	-
2	SCALA1 System 3-35	SCALA1 System 3-45	-
1	SCALA1 System 3-35	SCALA1 System 3-35	SCALA1 System 3-45

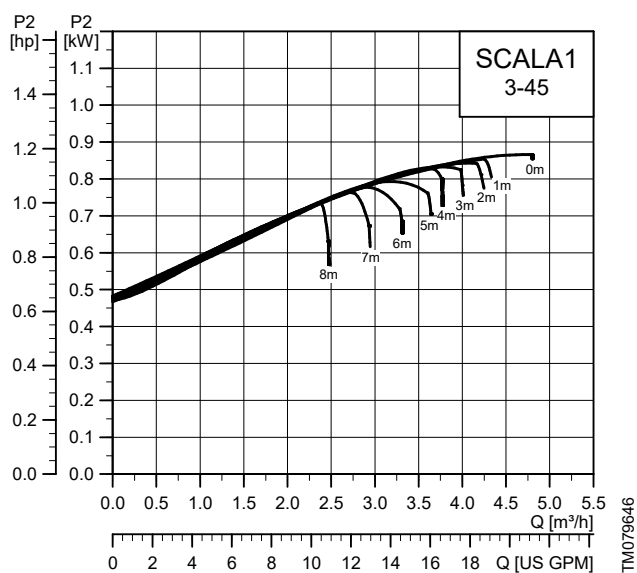
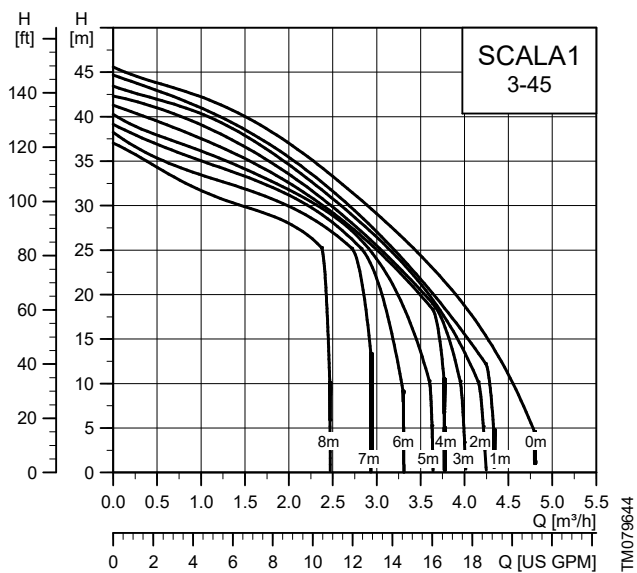
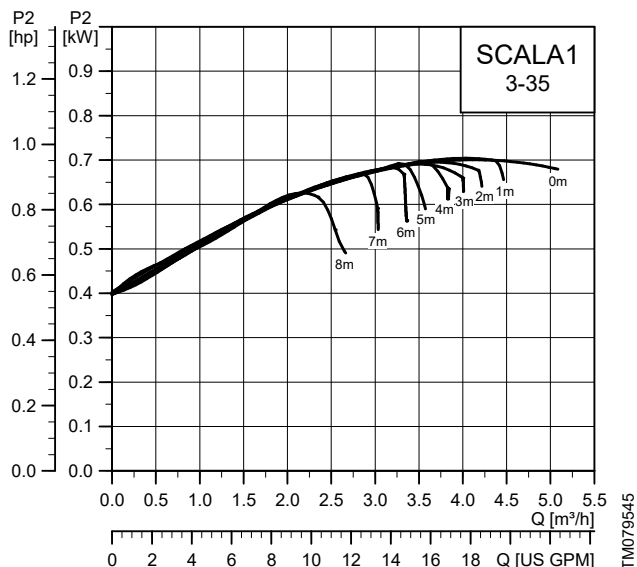
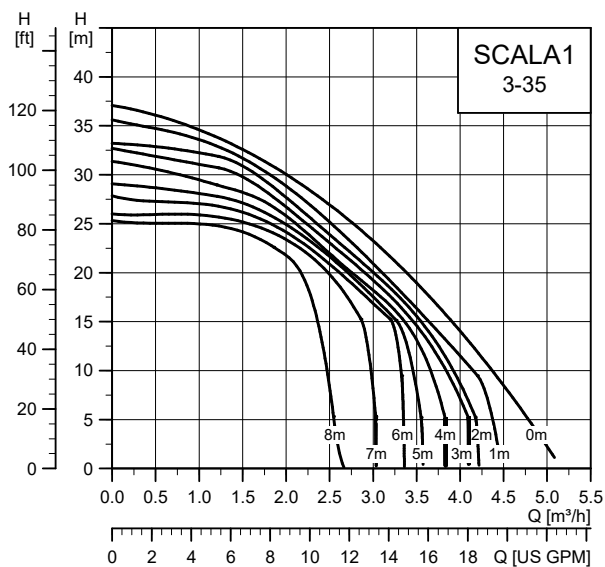
¹⁾ Take into consideration the maximum suction lift when sizing the system.

The length of the inlet pipe of self-priming pumps depends on the geodetic suction lift. The recommended maximum length of the inlet pipe according to the suction lift is shown in the figure below. Using an inlet pipe of 1", the example shows that if the suction lift is 2.5 m (8.2 ft), the length of the inlet pipe must not exceed 25 m (82 ft).



TM079195

2. Performance curves



Product numbers

Pump model	Voltage[V]	Plug type	Country of origin	Product number
SCALA1 System 3-35	1 × 230	Schuko	Italy	92947769
SCALA1 System 3-45	1 × 230	Schuko	Italy	92947788

3. Technical data

Electrical data

Pump type	Voltage [V]	P1 [W]	P2 [W]	n [rpm]	I _n [A]	I _{start} [A]	Standby power [W]
SCALA1 System 3-35	1 × 230	720	450	2800	3.27	13.0	1.5
SCALA1 System 3-45	1 × 230	910	580	2800	4.10	17.0	1.5

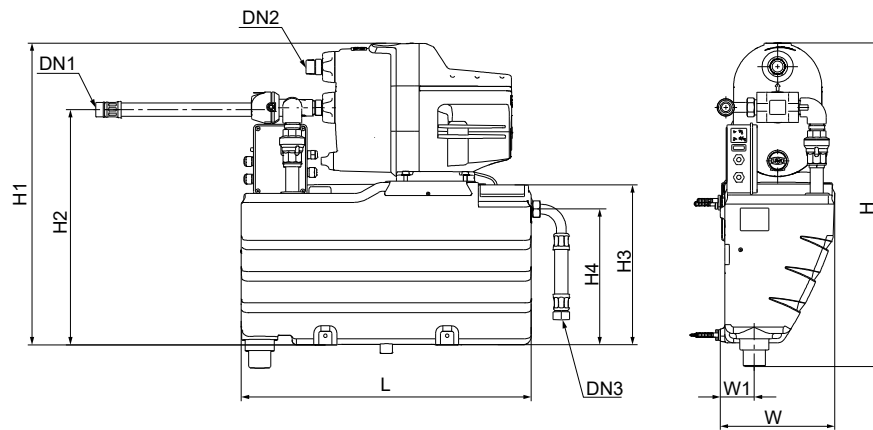
Operating conditions

	SCALA1 System	
	3-35	3-45
Pump water temperature [°C]	5-35	5-35
Max. ambient temperature [°C]	55	55
Max. liquid temperature [°C]	45	45
Max. system pressure [bar]	8	8
Max. inlet pressure [bar]	4	3
Max. inlet pressure from mains [bar]	10	10
Max. head [m]	36	45
Nominal head [m]	20	25
Nominal flow [m ³ /h]	3.72	3.59
IP Rating System	IP 20	IP 20
Pumped liquid	Rainwater	Rainwater
Noise level [db(A)] ²⁾	< 55	< 55
Frequency of starts and stops	25 per hour	25 per hour
Start pressure (pstart) [bar]	1.5	2.2
Inlet and outlet connections	1"	1"
Diameter of tap water pipe	3/4"	3/4"
Diameter of overflow	PP DN 50 M	PP DN 50 M
Tank capacity [L]	15 ³⁾	15
Material of tank	HDPE (high-density polyethylene)	
Float switch level of tank	Start/Stop float switch with 20 m cable	
Media type	Non-aggressive and non-explosive liquids without solid particles or fibres or abrasive water.	

²⁾ Noise level of SCALA1 pump

³⁾ Useful volume is 12 L

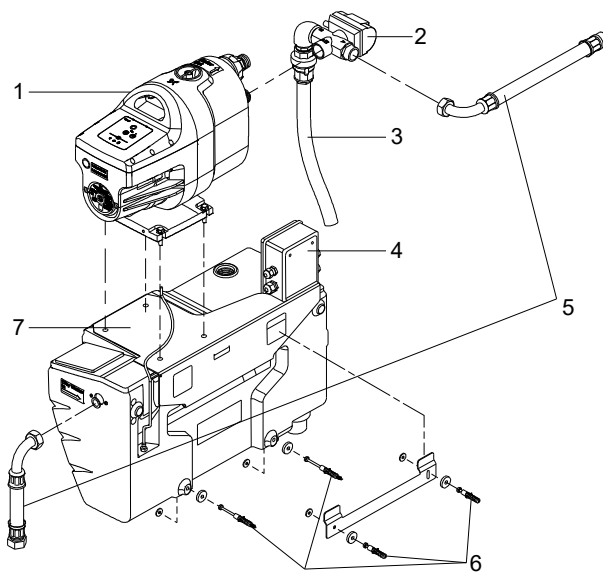
Dimensions and weights



TM085551

Pump	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	L [mm]	W [mm]	W1 [mm]	DN1	DN2	DN3	Weight [kg]
SCALA1 System 3-35	733	679	533.5	366	305	650	259.3	77	1"	1"	3/4"	26
SCALA1 System 3-45	733	679	533.5	366	305	650	259.3	77	1"	1"	3/4"	27

Construction



TM085552

Pos.	Description
1	SCALA1
2	Three-way valve
3	Suction hose
4	Control box
5	Flexible hoses
6	Screws and dowels
7	Break tank incl. refill valve and overflow switch

Approvals and markings



4. Accessories

Inlet filter



Inlet filter accessory

When using SCALA products for pumping rainwater or well water, we recommend installing a filter on the inlet side to provide clean water to increase the longevity of the pump, and to protect it from sand, gravel or other debris.

Features of the filter include:

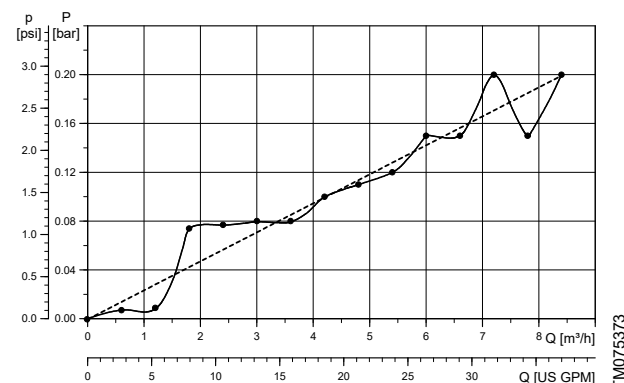
- Clean water provides long life for the pump.
- Quick and easy installation.
- Easy maintenance and cleaning.

The square mesh allows a uniform flow along the entire surface of the cartridge itself, which minimizes the possibility of clogging. Also, the smooth surface of the filter ensures easy washing and cleaning. The filter cartridges provide a nominal filtration with an efficiency of 80 %. If properly used, they can be used repeatedly maintaining constant efficiency.

The inside core is manufactured from talc-filled polypropylene and a welded nylon net. The filter housing is composite.

Filter specifications

Micron rating	250
Efficiency percentage	80
Max. working pressure [bar (psi)]	8 (116)
Max. differential pressure [bar (psi)]	0.8 (11.6)
Max. working temperature	45 °C (113 °F)



Inlet filter pressure loss

Product numbers

Description	Connection	Part number
Inlet filter, 250 micron	1" Rp	99725183
Inlet filter, 250 micron	1" NPT	99725185

Suction kit with floating strainer



The suction kit enables collection of water from the clean mid-layer of the tank. Dirt and debris can accumulate on the bottom, and impurities can gather on the surface.

The kit includes the following items:

- hose (2 m)
- floating ball
- foot valve with strainer (1.5 mm)
- 90° bend connector (1" Rp).

Product number	Type
93005537	Suction Kit 1" GAS 2 m

5. Grundfos Product Center

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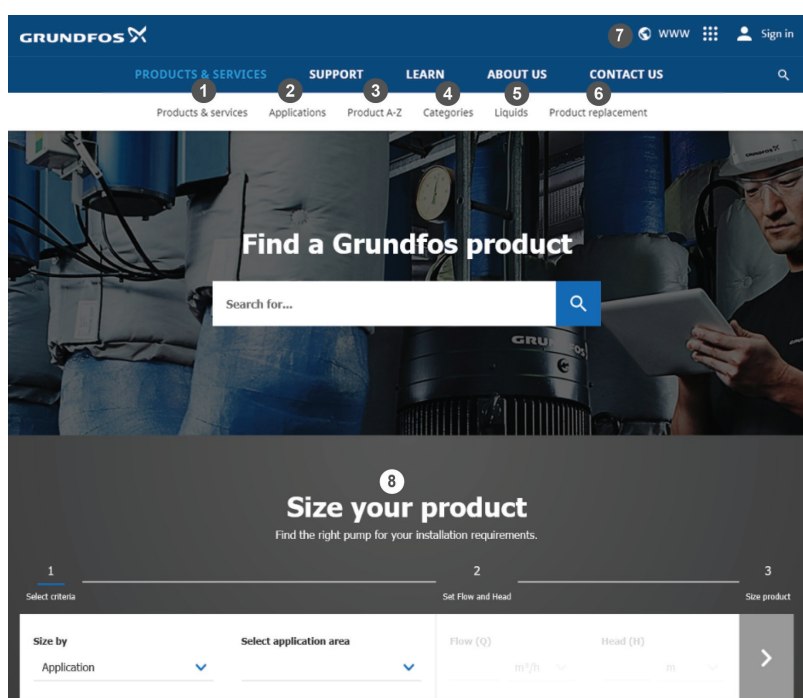
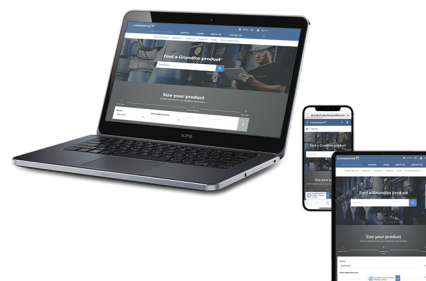
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All the information you need in one place

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On the product pages, you can download installation and operating instructions, data booklets, service instructions, etc., in PDF format.



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