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# SANIFLO

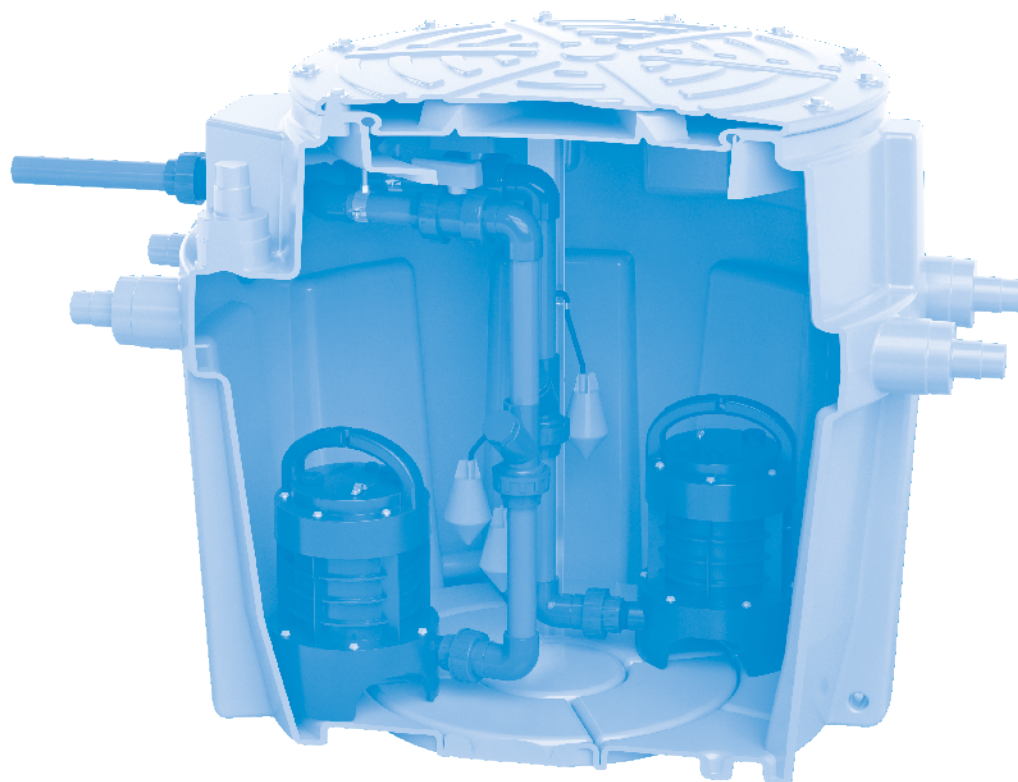
**Pumping station for sewage or waste water,  
floor-standing or underground**

## **SANIFOS®**

**SANIFOS® 110**

**SANIFOS® 250**

**SANIFOS® 500**



**Operating / installation manual**

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# Glossary

## Ventilation pipe

Ventilation duct limiting pressure variations inside the wastewater pumping station. The pumping station must be ventilated from above the roof (when it is installed inside the house).

## ND (NOMINAL DIAMETER)

Parameter used to characterise parts that are suitable for each other, for example: pipes, connections, sleeves.

## Wastewater

Water changed by the use that was made of it (for example: domestic wastewater).

## EN 12050-1

Current European standard for pumping stations for effluents containing faecal material intended for discharge below the back-flow level in buildings and on land.

## Noise level

Expected sound emissions, expressed in sound pressure level LpA in dB(A).

## Separator

Equipment which prevents, by gravity, the penetration of harmful substances into the discharge system by separating them from wastewater, for example: grease trap.

## Pumping station for wastewater

Facilities for the automatic collection and pumping of wastewater and blackwater above the back-flow level.

## Dual station

Pumping station for wastewater equipped with a second pump of the same power that starts automatically when needed.

## Inlet piping

Line through which wastewater from sanitary fixtures is routed to the pumping station.

## Discharge piping

Piping for raising wastewater above the back-flow level routing it to the sewer.

## Effective volume

Volume to be discharged between the start level and the stop level.

## Clearance

The clearance is the space that needs to be provided for interventions.

## **1. SAFETY**

All personnel involved with the installation, operation, servicing and inspection of the SaniFos / SaniPump must be suitably qualified for this work and must have studied the installation manual to ensure that they are conversant with the pump installation and safety regulations.

If the personnel do not have the necessary skills they should not attempt to install, operate, service or inspect this pump.

This pump cannot be installed, operated, serviced or inspected by Children or by people with reduced physical, sensory or mental capacity.

### **ELECTRICAL CONNECTIONS:**

The electrical installation must be carried out by a qualified electrical engineer. The device's power supply must be connected to ground (class I) and protected by a high sensitivity differential circuit breaker (30 mA). Devices without plugs must be connected to a main switch on the power supply which disconnects all poles (contact separation distance of at least 3 mm). The connection must be used exclusively to provide the power to the product. If the power cord is damaged, to prevent possible danger, it must be replaced by the manufacturer, customer service team or a similarly qualified individual. Regulations: be sure to comply with the provisions of the standard in force in the country of use (France: NF C 15-100) concerning the protection volumes in a bathroom.

## 1.1 Identification of warnings

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### **Danger**

This term defines a high risk of danger, which can lead to death or serious injury, if not avoided.

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### **Warning**

This term defines a hazard which could cause a risk to the machine and its operation, if it is not taken into account

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### **Dangerous area**

This symbol, in combination with a keyword, characterises hazards that could lead to death or injury.

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### **Dangerous voltage**

This symbol, in combination with a keyword, characterises dangers associated with the voltage and provides information on voltage protection.

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### **Property damage**

This symbol, in combination with the keyword **ATTENTION**, characterises dangers to the machine.

---

## 1.2 General points

This operating and installation manual contains important instructions to follow for the fitting, operation and maintenance of the SANIFOS® pumping station®. Observing these instructions is a guarantee of safe operation and prevents personal injury and property damage. Please observe the safety instructions in all the sections.

Before fitting and commissioning the pumping station, qualified staff / the operator concerned must read and understand all these instructions.

## 1.3 Intended use

Only use the pumping station in the fields of application described in this documentation.

- The pumping station must only be operated in technically perfect condition.
- Do not use a partially assembled pumping station.
- The pumping station must only pump the fluids described in this documentation.
- The pumping station must never operate without pumped fluid.
- Contact us for operating modes not described in this documentation.
- Never exceed the usage limits defined in the documentation.
- The safe use of the pumping station is only guaranteed if used as intended (in compliance with this manual)

## **1.4 Qualification and training of staff**

Commissioning and maintenance of this device must be performed by a qualified professional (ask us).

Please refer to the installation standard EN 12056-4 when installing the station inside the house or to EN 752 if the station is installed outside the house.

## **1.5 Safety instructions for maintenance, inspection and installation**

- Any alteration or modification of the pumping station will void the warranty.
- Only use original parts or parts recognised by the manufacturer.

The use of other parts may void the manufacturer's liability for any resulting damage.

- The operator must ensure that all maintenance, inspection and installation work is carried out by qualified, authorised staff having previously studied this operating and installation manual.

Before working on the station, turn it off and disconnect the power supply.

- You must follow the procedure for shutting down the pumping station described in this operating manual.
- Pumping stations discharging fluids that may be harmful to health must be decontaminated. Before restarting the pumping station, follow the commissioning instructions. (→ paragraph 7, page 31)
- Keep unauthorised people (children, for example) away from the pumping station.
- Never exceed the usage limits defined in the documentation.
- Follow all the safety precautions and instructions in this operating (and installation) manual.

This operating manual must always be available on the website so it can be accessed by qualified staff and the operator.

These operating instructions must be retained by the operator.

## **1.6 Risks and consequences of non-compliance with the operating manual**

Failure to comply with this operating and installation manual will result in the loss of warranty rights and rights to damages.

## 2. TRANSPORT / TEMPORARY STORAGE RETURN / DISPOSAL

### 2.1 Receiving inspection

- When handling the goods, check the condition of the packaging of the pumping station delivered (tank, pumps and control box according to the model chosen).
- In case of damage, note the exact damage and immediately notify the retailer in writing.

### 2.2 Transport



Pumping station falling over.

Risk of injury if the pumping station falls!

- The pumping station must be transported in a vertical position.
- Observe the indicated weights.
- Never hang up the pump by the electric cable.
- Use a suitable means of transport.
- The pumping station has been inspected to make sure there is no damage due to transport.
- Choose suitable means of transport according to the weight table.

### Weight of the pumping station

	Weight
<b>SANIFOS 110</b>	
110 litre pre-assembled tank with hydraulic	10 kg
SANIPUMP® with 10 metres of cable and float	13 kg
Complete station	23 kg
Product on pallet	26 kg
<b>SANIFOS 250</b>	
250 litre pre-assembled tank with hydraulic	25 kg
SANIPUMP® with 10 metres of cable and float	13 kg
Complete station	48 kg
Product on pallet	53 kg
<b>SANIFOS 500</b>	
500 litre tank with pre-assembled hydraulics and floats	63 kg
SANIPUMP® x 2	26 kg
SMART alarm box	4.5 kg
Remote alarm box	0.5 kg
Complete station	94 kg
Product on pallet	101 kg

## 2.3 Temporary storage / Packaging

In the case of commissioning after an extended storage period, take the following precautions for the installation of the pumping station

### ATTENTION



**Damp, dirty or damaged holes and points.  
Leakage or damage to the pumping station!  
Clear the pumping station's blocked openings at the time of the installation.**

## 2.4 Returns

- Properly drain the pumping station.
- Rinse and decontaminate the pumping station, especially if it has transported harmful, explosive, hot or otherwise dangerous liquids.

## 2.5 Disposal at the end of life

At the end of its life, this product must be returned to a dedicated collection point.

- It cannot be treated as household waste.
- Ask your local council about where to take the old appliance so that it can be recycled or destroyed.

# 3. DESCRIPTION

## 3.1 General description

SANIFOS® 110, SANIFOS® 250 and SANIFOS® 500 are wastewater pumping stations specially developed for private, commercial and small-scale use (small buildings, shops, public places).

They are not intended for rainwater pumping.

They can be installed, placed inside the house or buried outside.

The tanks of the stations are made from high density polyethylene and have a high mechanical resistance, are odour-resistant, UV-resistant and resistant to chemical attack. Their lid is held in place by stainless steel screws (except the SANIFOS® 110).



The tanks of the stations are delivered with 1 or 2 pumps depending on the model. These pumps have an SFA shredding system for sewage disposal via DN 40 (ext. diameter. 50).

These tanks have several inlets of different diameters for the inlet of the effluents (refer to the dimensions on page 11).

These devices comply with the EN 12050-1 standard (pumping station for waste water containing faeces) as well as the European directives on construction products, electrical safety and electromagnetic compatibility.



DoP available on our website in the product file ("Diagrams and technical data sheet" tab). They must be installed in accordance with standards EN 12056-4 for indoor installation and EN 752 for outdoor installation.

## 3.2 Scope of supply

### SANIFOS® 110

#### On a pallet:

- SANIFOS tank® 110 litres with cover and gasket
- Pre-assembled hydraulics in the tank
- SANIPUMP® submersible pump with float switch (float cable H07RN-F 2 x 1 mm<sup>2</sup> + earth), mounting base and H07RN-F-3G type 1.5 mm<sup>2</sup> pump supply cable of 10 meters in length (in a separate package)
- In an accessory bag: 1 cable gland

**Note :** the shut-off valves and the non-return valve are not supplied with the SANIFOS® 110.

### SANIFOS® 250

#### On a pallet:

- SANIFOS® tank 250 litres with cover, screw and gasket
- Hydraulic pre-assembled in the tank including 1 shut-off valve and 1 non-return valve
- SANIPUMP® submersible pump with float switch (float cable H07RN-F 2 x 1 mm<sup>2</sup> + earth), mounting base and H07RN-F-3G type 1.5 mm<sup>2</sup> pump supply cable of 10 meters in length (in a separate package)
- In an accessory bag: 1 handling cable + 1 terminal block IP68 + 1 cable gland, cable clips, screws

### SANIFOS® 500

#### On a pallet:

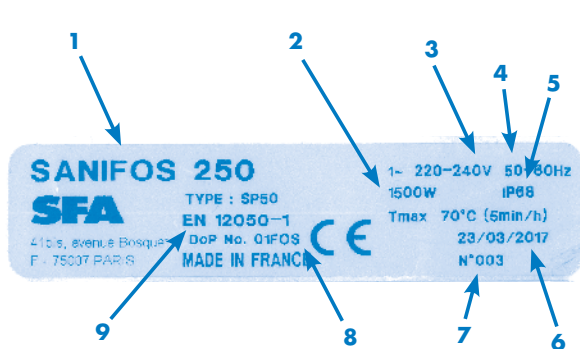
- SANIFOS® 500 litre tank with cover, screw and gasket
- Hydraulic pre-assembled in the tank including 2 shut-off valves, 2 non-return valves and 3 floats directly installed in the tank (float cable 07RN-F 2 x 1 mm<sup>2</sup>)
- 2 submersible SANIPUMP® pumps with mounting base (in 2 separate packs)
- In separate packaging: SMART remote control box with power cable H07RN-F-3G type 1.5 mm<sup>2</sup> (2.5 m length), power cables for pumps H07RN-F-4G type, 1.5 mm<sup>2</sup> (4 meters long), float connection cables (4 meters) and quick connectors.
- HF remote alarm unit
- Accessory bag with: 2 handling cables, 5 cable glands (2 x PG13 and 3 x PG11), 2 x IP 68 waterproof terminal blocks: 4 conductors for pumps, 3 terminal blocks IP 68: 2 conductors for floats, cable clips, screws.

SANIFOS® 500 can also be equipped with three-phase pumps.

A 30 cm height extension is available for the SANIFOS® 250 and SANIFOS® 500 (see pages 11 and 12).

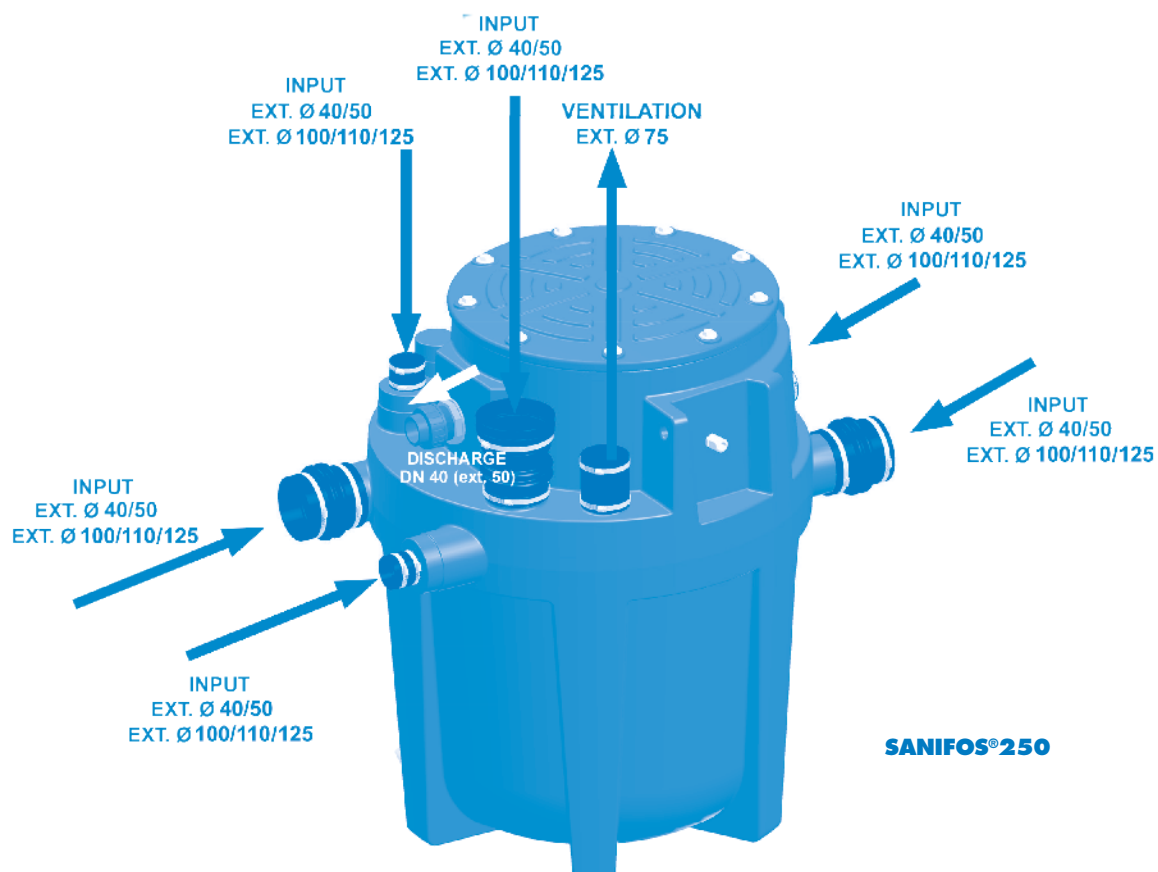


### 3.3 Rating plate



- 1 Name of the pumping station
- 2 Power consumption of the engines
- 3 Supply voltage
- 4 Frequency
- 5 Protection index
- 6 Date of production
- 7 Identification number
- 8 Declaration of performance reference (DoP)
- 9 Type of certification

### 3.4 Design and operating mode



The pumping station is equipped with several horizontal and vertical inlet openings for 40/50/100/110/125 mm external diameter piping

The motor-pump assembly conveys the pumped fluid into the vertical discharge pipe with an external diameter of 50 mm (DN 40).

The ventilation duct (external diameter 75 mm) allows the tank to always remain at atmospheric pressure (2 ventilation holes are available on the SANIFOS® 250 and SANIFOS® 500 and 1 ventilation hole on the SANIFOS® 110 pumping station).

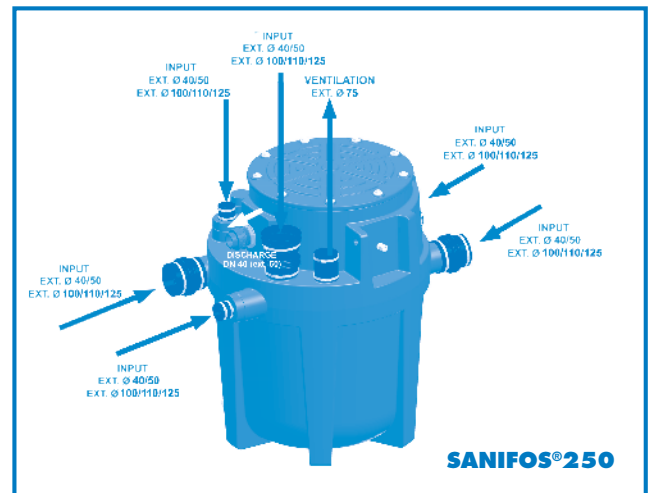
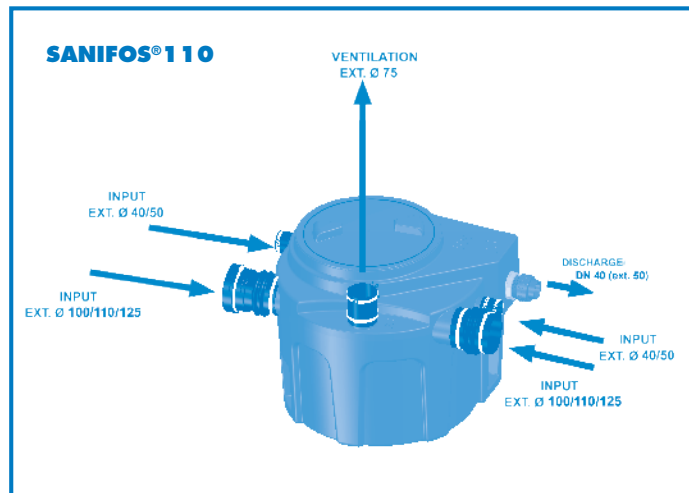
### 3.4.1 SANIFOS® 110 and SANIFOS® 250

#### Operating mode:

Effluents enter the pumping station through the horizontal and vertical inlet openings. They accumulate in a gas-tight, smell-proof and watertight plastic tank.

As soon as a certain fill level is detected by the float switch, the pump starts up automatically. The effluent is then shredded by the system and automatically pumped to then drain into the discharge pipe.

As soon as the effluent level reaches a minimum effluent level in the tank, detected by the float switch, the pump switches off automatically.



### 3.4.2 SANIFOS® 500

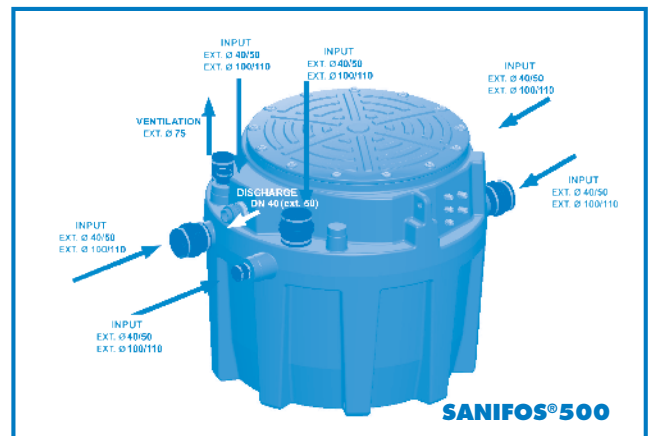
#### Operating mode:

Effluents enter the pumping station through the horizontal and vertical inlet openings. They accumulate in a gas-tight, smell-proof and watertight plastic tank.

When the effluent enters the tank, the low float rises and then the high float rises to reach the pump's activation level.

The pump starts up and the effluents are then shredded by the shredding system and automatically pumped to drain into the discharge pipe.

As soon as the effluent level reaches a minimum effluent level in the tank, detected by the low float switch, the pump switches off automatically.



SANIFOS® 500 contains 2 pumps that operate alternately. In case of malfunction, the alarm is triggered by the alarm float and the 2 motors operate simultaneously.

If one of the 2 pumps is defective, the other one takes over.

### 3.4.3 Technical specifications

	<b>SANIFOS® 110</b>	<b>SANIFOS® 250</b>	<b>SANIFOS® 500 single-phase</b>	<b>SANIFOS® 500 three-phase</b>
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#### Pump specifications

Flow rate (H = 1 m)	10.5 m³/h	10.5 m³/h	10.5 m³/h	15.1 m³/h
Max height (Q=0)	14 m	14 m	14 m	20.5 m
ON/OFF level	320/120	400/100	500/132	500/132
Temp. Max. of incoming water (intermittently - max. 5 mins)	70°C	70°C	70°C	70°C
Activation system	Float	Float	Float	Float
Overload protection	Yes	Yes	Yes	Yes

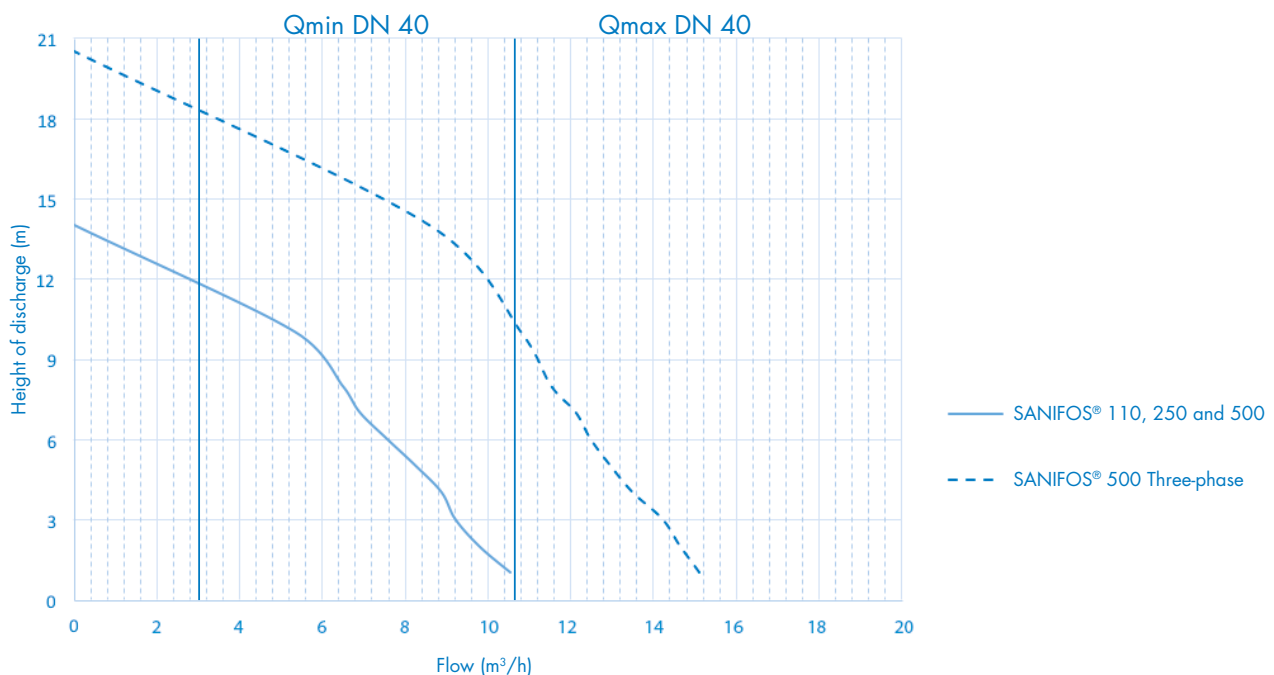
#### Thermal

Power supply	Single-phase 220-240 V/50-60 Hz	Single-phase 220-240 V/50-60 Hz	Single-phase 220-240 V/50-60 Hz	Three-phase 230-400 V/50-60 Hz
Motor power consumption	1 x 1500 W	1 x 1500 W	2 x 1500 W	2 x 2600 W
Maximum intensity absorbed	6 A	6 A	2 x 6 A	2 x 4.75 A

#### Tank specifications

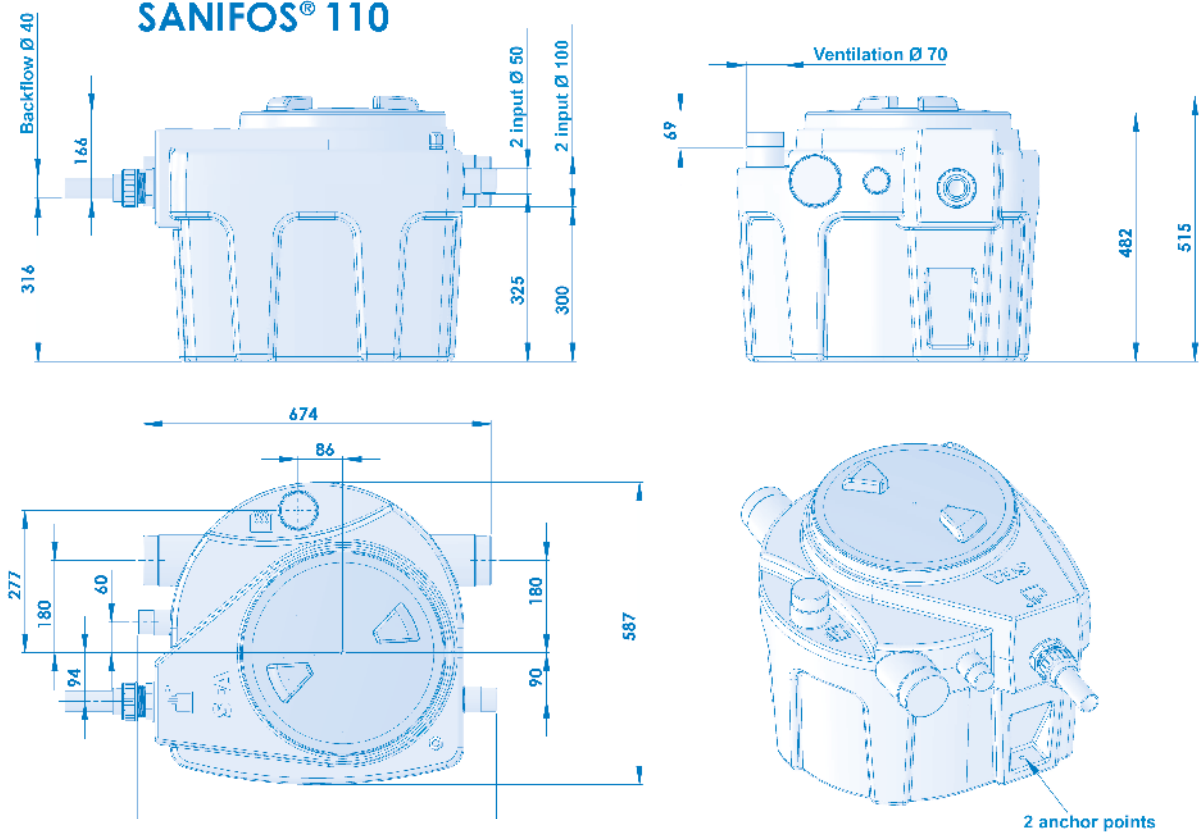
Volume of the tank	110 litres	250 litres	500 litres	500 litres
Tank materials	polyethylene	polyethylene	polyethylene	polyethylene
FEA	182 mm	311 mm	311 mm	311 mm
Discharge diameters	Ø ext. 40 (ext 50)	Ø ext. 40 (ext 50)	Ø ext. 40 (ext 50)	Ø ext. 40 (ext 50)
Input diameters	2 x external Ø. 100/110/125; 2 x 40/50	6 x Ø ext. 40/50/100/110/125	6 x Ø ext. 40/50/100/110/125	6 x Ø ext. 40/50/100/110/125
Ventilation	1 x Ø ext. 75	2 x Ø ext. 75	2 x Ø ext. 75	2 x Ø ext. 75
Non-return valve	0	1	2	2
Shut-off valve	0	1	2	2

### 3.4.4 Pump curves

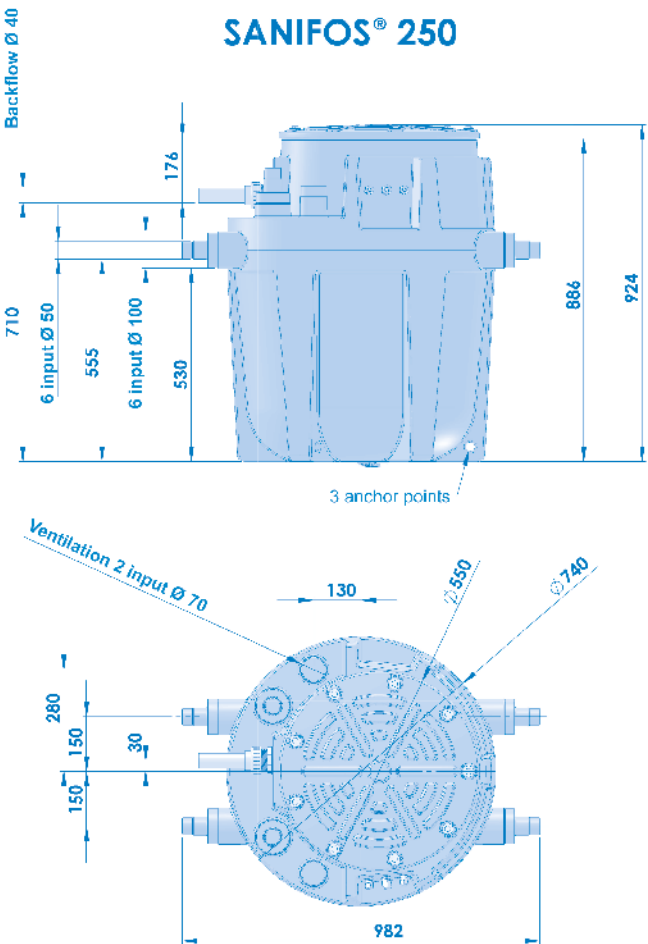


3.4.5 Product dimensions

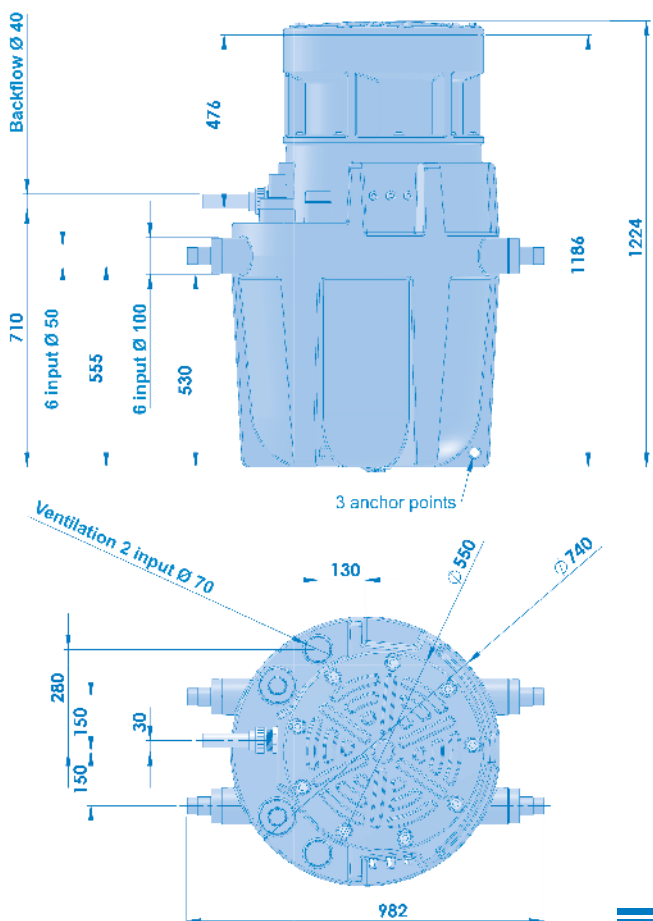
SANIFOS® 110

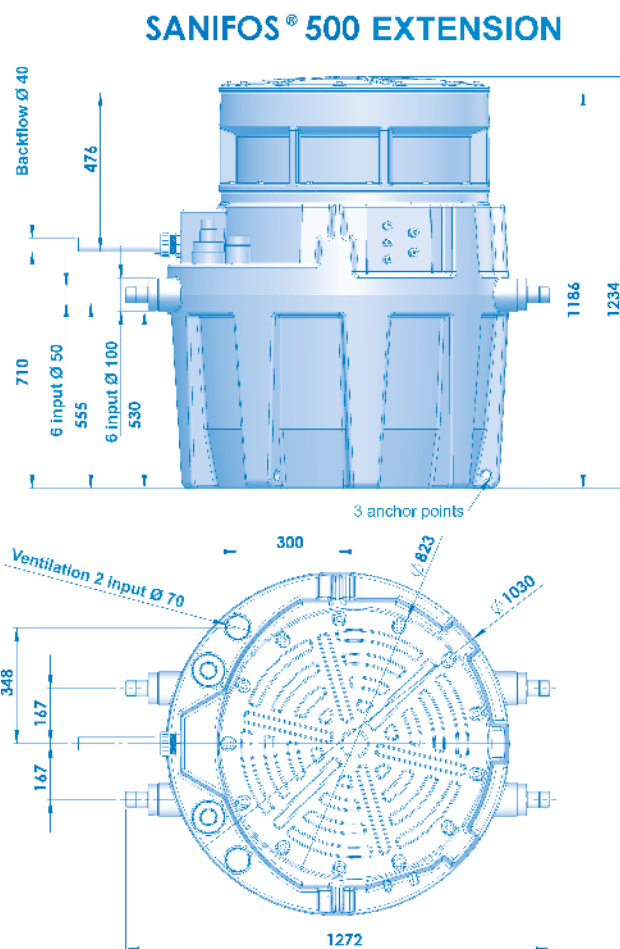
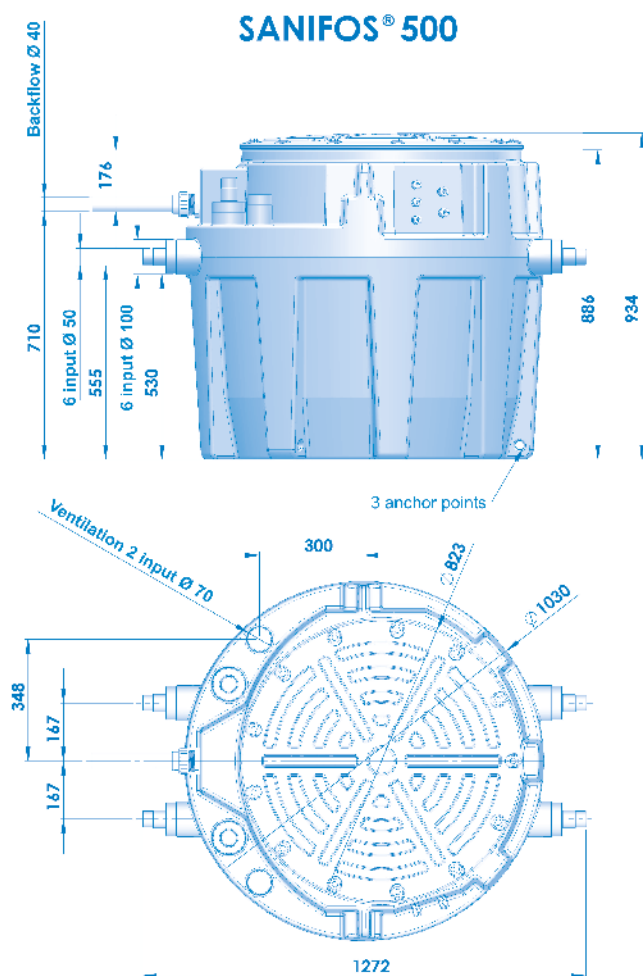


SANIFOS® 250



SANIFOS® 250 EXTENSION





### 3.5 Sump tank

The sump tank is designed for pressure-free operation. Wastewater is collected there at atmospheric pressure before being discharged to the sewer. The ventilation duct allows the tank to always remain at atmospheric pressure

#### Pumped fluids

#### WARNING



#### Pumping unauthorised fluids

**Dangerous for people and the environment!**

- Only discharge authorised pumped fluids in the public sewerage network

#### Authorised pumped fluids:

The following liquids are allowed in discharge systems:

- Water contaminated by domestic use, human excrement, toilet paper.

#### Unauthorised pumped fluids:

The following liquids and substances are banned:

- Solid materials, fibres, tar, sand, cement, ash, coarse paper, hand towels, wipes, cardboard, rubble, rubbish, slaughterhouse waste, oils, greases, hydrocarbons etc.



- Wastewater containing harmful substances (for example, untreated greasy waste from restaurants). Pumping these liquids and substances requires the fitting of a compliant grease trap.
- Rain water.

### 3.6 Noise level

The noise level depends on the fitting conditions and operating point.  
This sound pressure level  $L_p$  is less than 70 dB (A)

## 4. PREPARATION OF THE TANK

The tank is delivered with hydraulic pipes mounted inside.  
When preparing the tank, check their presence.  
The pump is delivered separately and must be installed inside the tank.

### 4.1 Installation of the pump in the tank

- Disconnect the hydraulic pipes inside the tank, before the shut-off valves
- Take them out of the tank



**SANIFOS® 110 and SANIFOS® 250: 1 pipe to disconnect**  
**SANIFOS® 500: 2 pipes to be disconnected**

- Connect the pipeline(s) to each pump (delivered separately)
- Once the connections have been made, lower the submersible pump(s) and their piping inside the tank and reconnect the pipes
- Pull the cable through the hole provided on the pump handle and connect it to the top of the tank using the hook provided for this purpose (useful when servicing the pump).



## 4.2 Electrical wiring

### 4.2.1 Wiring of pumps and floats

#### Use of waterproof terminal blocks (SANIFOS® 250 and SANIFOS® 500)

The connection with the waterproof terminal block makes it possible, when servicing the submersible pumps, not to disconnect the power cables and not to pull the 10 m cable through the cable glands or through the ventilation duct used for their passage in order to be able to remove the pumps from the tank.

#### Wiring the waterproof terminal blocks (4 conductors) for pumps

→ Terminal block TH400 5P (use only 4 poles)

#### Wiring the waterproof terminal blocks for floats

→ Terminal block TH400 2P

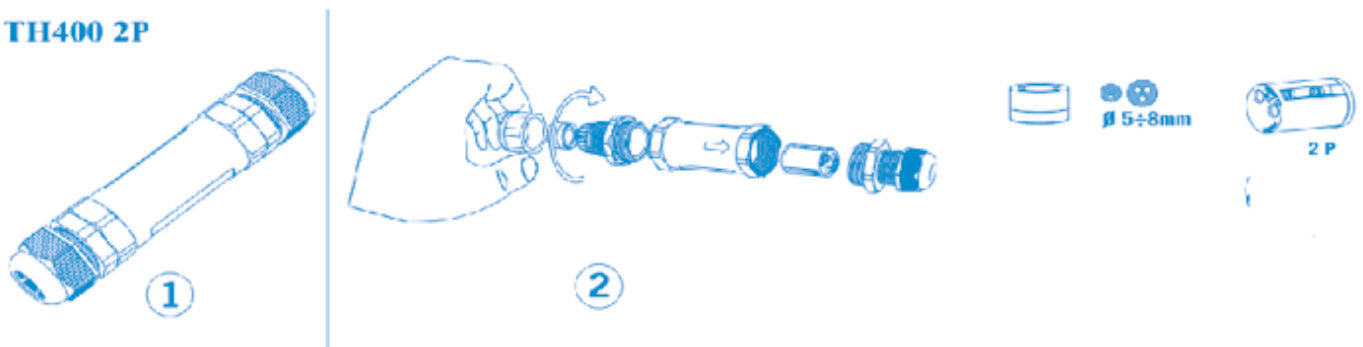


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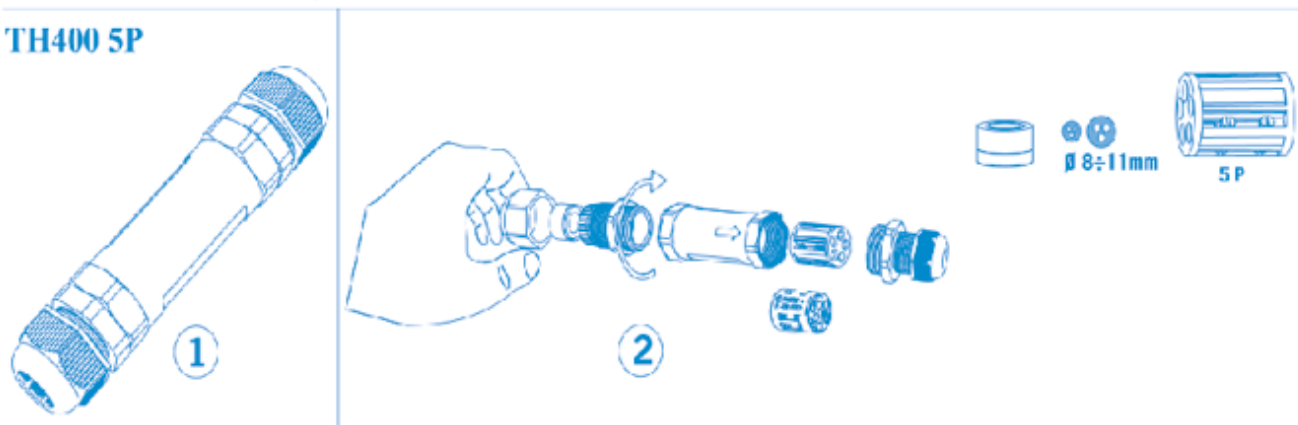
On the SANIFOS® 500, the floats are delivered with the tank and must be connected to the SMART control box via the TH400 2P waterproof terminal blocks.

### Preparing the terminal blocks

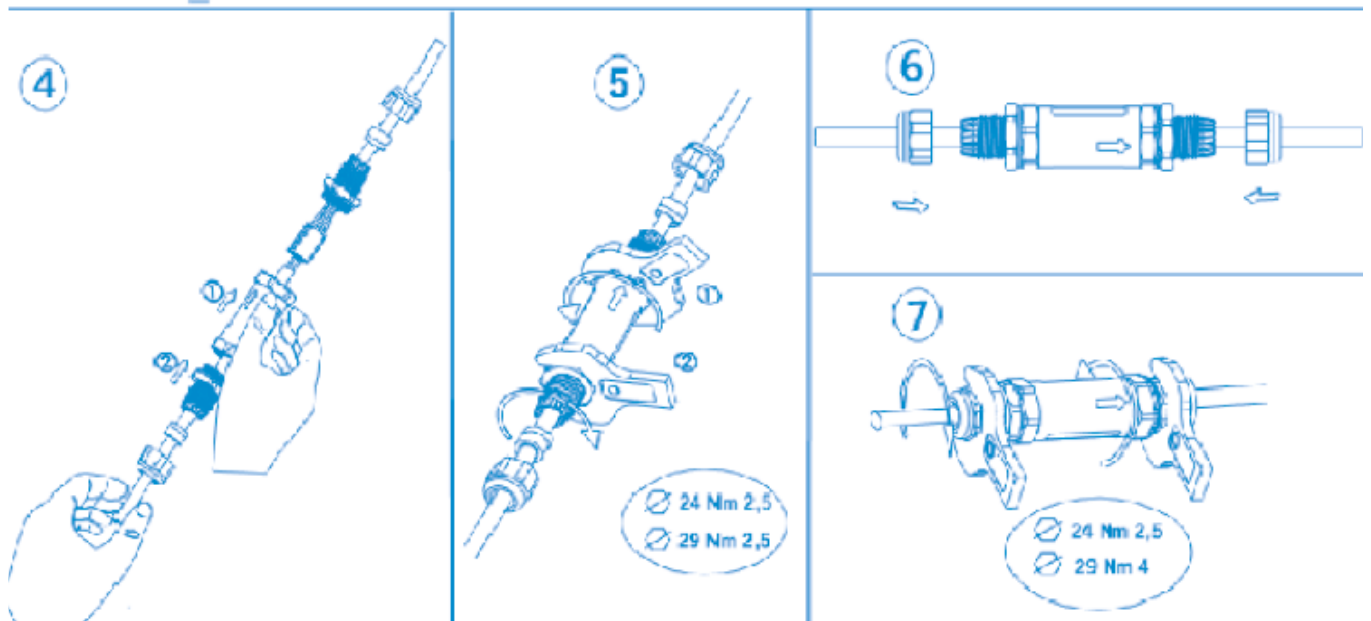
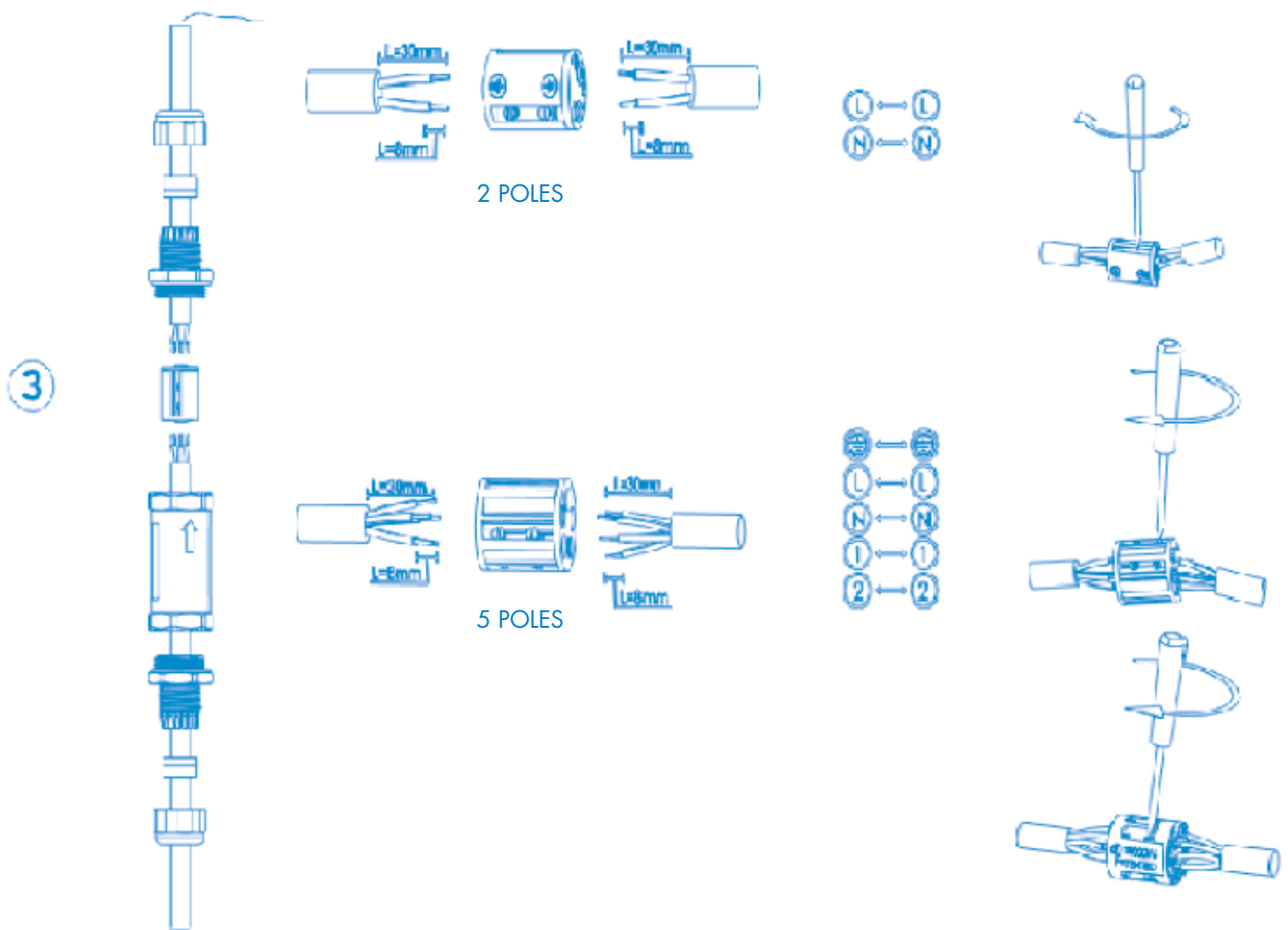
TH400 2P



TH400 5P







### **SANIFOS® 500 floats**

- Gather together the float cables
- Fix them to the stainless steel bar using a tie-wrap



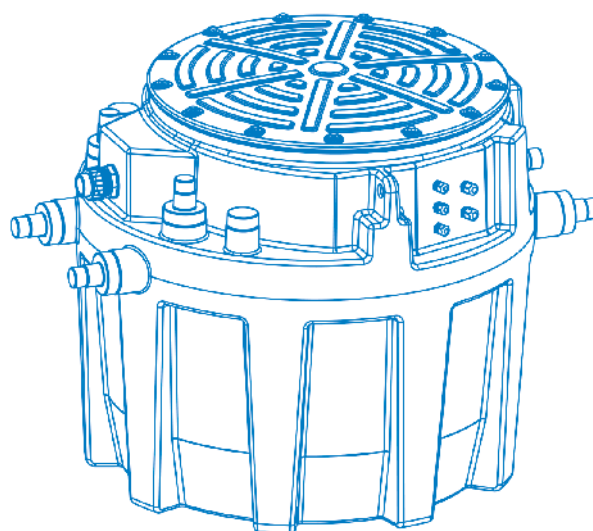
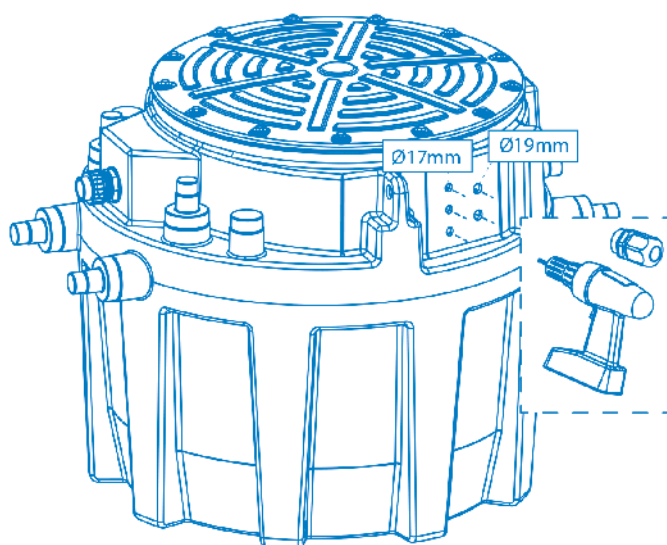
### **4.2.2 Cable output**

#### **Case where the station is floor-standing**

SANIFOS® 110, SANIFOS® 250 and SANIFOS® 500

Use of cable glands: side outlet of the cables on the tank.

Locate the "pre-holes" specially for the passage of the cable glands, present on the tank.



## About SANIFOS® 500, 5 pre-holes:

### Passage of float cables through cable glands PG 11:

- Make a hole  $\varnothing$  17 mm
- Insert the cable gland with a silicone thread
- Tighten the inside nut

### Passage of motor cables through cable glands PG 13:

- Make a hole  $\varnothing$  19 mm
- Insert the cable gland with a silicone thread
- Tighten the inside nut

## Case where the station is buried:

### Use of ventilation:

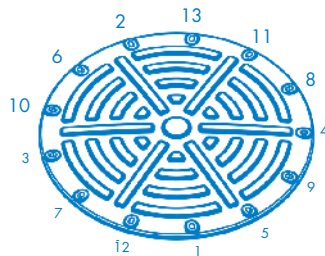
#### SANIFOS® 250 and SANIFOS® 500

- Cut into one of the ventilation passages (2 possible passages).
- Pass the cable(s) through one of the tank outlets for ventilation.
- Provide a 75 mm diameter PVC conduit for routing the cables from the pumping station to the power supply.

## 4.3 Installing the tank cover

### Installing the O-ring of the tank cover

- Make sure that the face of the lid coming into contact with the gasket is clean.
- Position the cover and fit the screws.
- Tighten the screws in the order shown in the figure below with a torque of 5 Nm.



Tightening torque 5 Nm

## 4.4 Ventilation

### ATTENTION



**Insufficient ventilation. Risk that the pumping station will not work!**

→ Ventilation must remain free

→ Do not block the vent outlet

→ Do not install an air intake valve (diaphragm valve).

According to the recommendations of EN 12050-1, pumping stations must be ventilated. The pumping station must always be ventilated so that the tank is always at atmospheric pressure.



### WARNING

The ventilation must be completely free and air must flow in both directions (**no diaphragm valve fitted**).

The vent pipe must not be connected to the vent pipe on the inlet side of a grease trap.

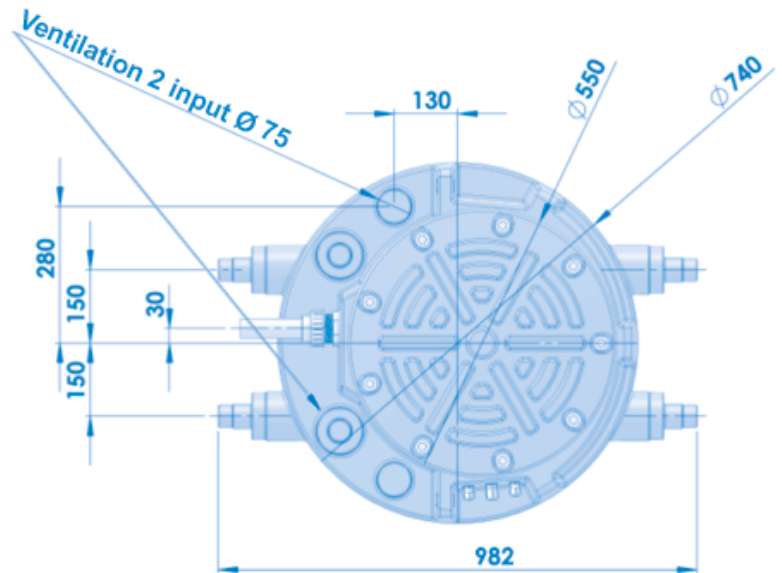
Connect the ventilation duct Ø ext. 75 vertically to the vent hole using the flexible sleeve.

On SANIFOS® 250 and SANIFOS® 500: 2 ventilation holes are available.

Carefully cut the end of the selected hole so that the through section is completely clear.

Leave a part of the chamfer to facilitate assembly of the fittings.

Ventilation should be at a distance of approximately 50 cm from the tank cover.



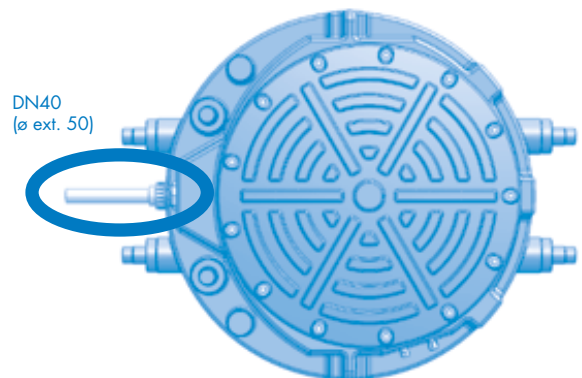
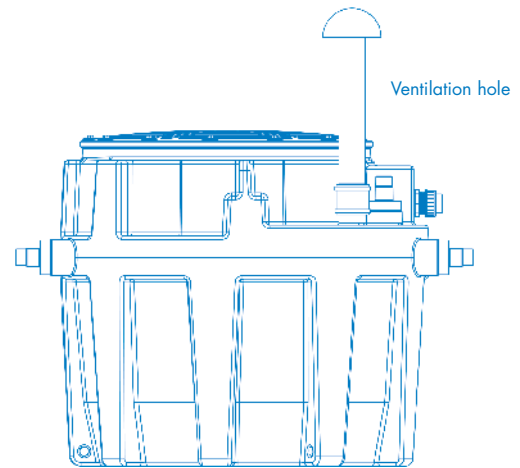
## 4.5 Discharge hole

### ATTENTION



**Improper fitting of the discharge pipe. Leaks and flooding in the installation room!**

- The pumping station must not be used as a support point for piping.
- Do not connect other drain pipes to the discharge pipe.
- Install shut-off valves on the supply pipes and discharge pipes (already installed on SANIFOS® 250 and SANIFOS® 500).



### NOTE

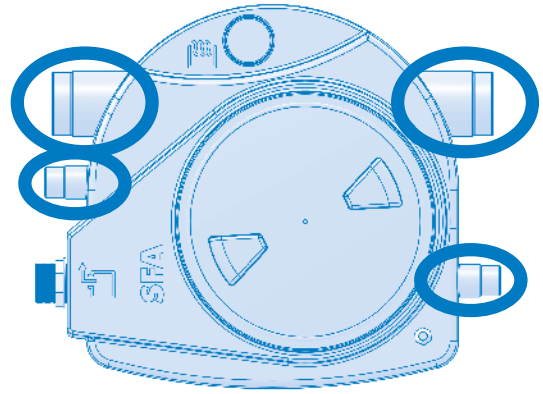
To prevent the risk of back-flow of water from the sewer, install the discharge pipe in a "loop" so that its base, at the highest point, is located above the back-flow level.

## 4.6 Water inlet holes

### SANIFOS® 110

4 inputs available:

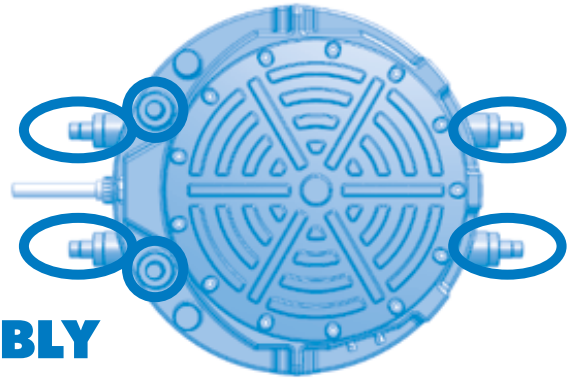
- 2 side inputs Ø ext. 40/50
- 2 side inputs Ø ext. 100/110/125



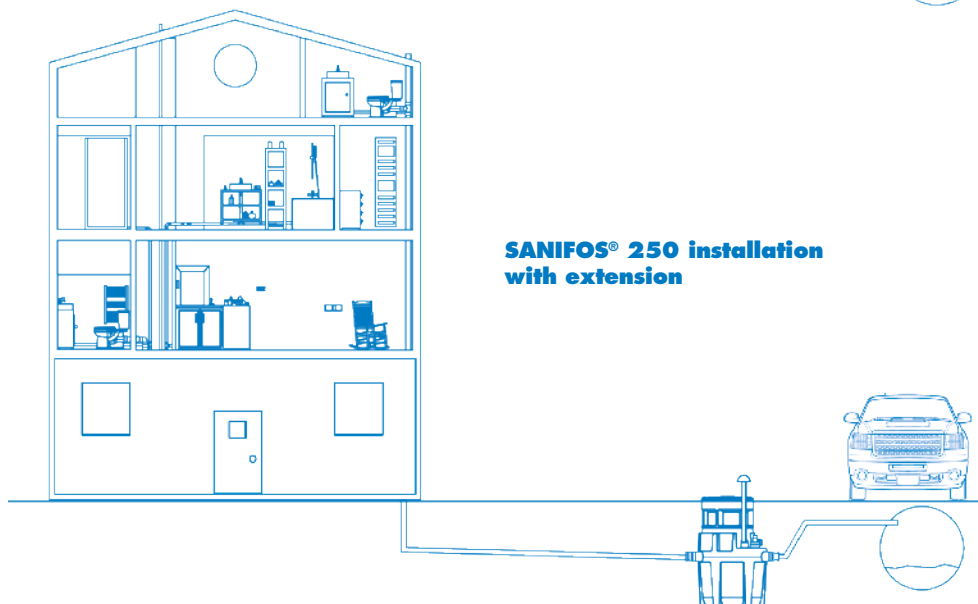
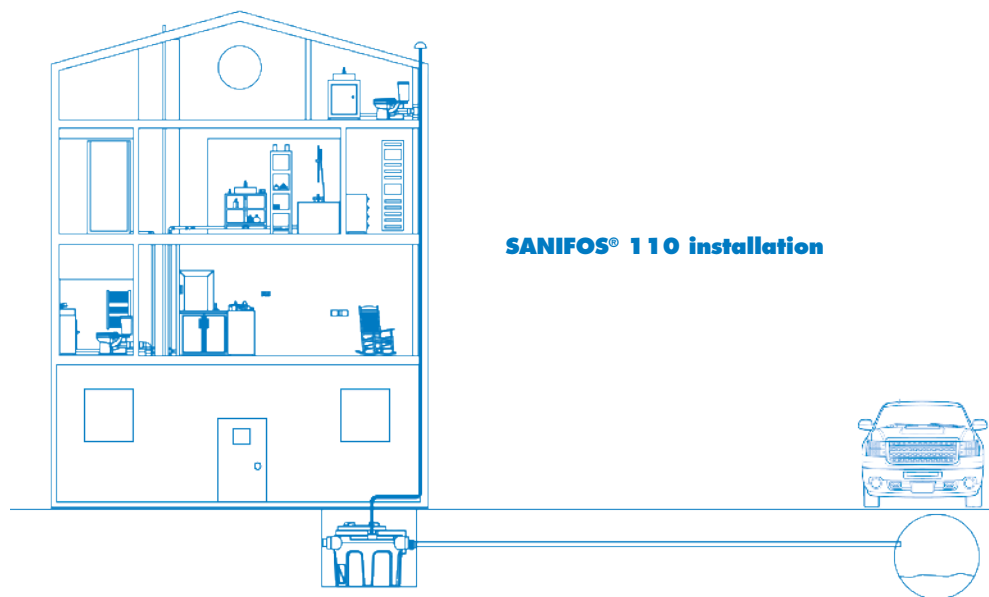
### SANIFOS® 250 and SANIFOS® 500

6 inputs available:

- 4 side inputs Ø ext. 40/50/100/110/125
- 2 inputs on the top of the tank Ø ext. 40/50/100/110/125



## 5. INSTALLATION / ASSEMBLY



## 5.1 Installing the pumping station, floor-standing

- The characteristics shown on the rating plate have been compared with those on the order and installation (supply voltage, frequency).
- The installation room must be protected against frost.
- The installation room is adequately lit.
- The work has been prepared in accordance with the dimensions shown in the example installation and standard EN 12056-4.
- The plant room where the SANIFOS® will be installed must be large enough to allow a 600 mm clearance around and above the device to facilitate maintenance.
- Stop valves (provided with certain devices) must be fitted on the effluent inlets as well as on the discharge line, as close as possible to the pumping station.
- The discharge line must be designed to prevent any back-flow of sewage.

By fitting a non-return loop, located above the back-flow level, back-flow is avoided.

**Please note:** Unless otherwise specified locally, the back-flow level is the level of the highway (roads, pavement, etc.). Extend this line after the non-return loop through a larger diameter pipe.

- Provide a sump to drain the room.
- The installation of an auxiliary pump for possible drainage of the plant room (for floods) is recommended.
- The pumping station must be ventilated above the roof.
- The pumped fluid is appropriate and authorised by this documentation.

(→ section 3.5, page 12)

- In case of discharge of greasy effluents, the use of a degreasing tank is essential.

Wastewater other than those mentioned above, for example, of artisanal or industrial origin, must not be discharged into the pipes without prior treatment.

## 5.2 Installing the pumping station, underground

Before burying the pumping station, a soil analysis must be carried out. This analysis must comply with DTU 64-1 and the Order of 6 May 1996.

### ATTENTION



#### RISK OF FREEZING

**It is important to install the pumping station when it is not freezing. Frost damage may result in damage to the piping and pump. It is important to take into account the regional freezing depth.**

**When the pumping station is installed in an environment where temperatures are below zero, it must be insulated in accordance with local recommendations. The risk of frost can be limited by burying the station deeper; as accessories, SFA offers 30 cm extensions for SANIFOS® 250 and SANIFOS® 500.**



- The characteristics shown on the rating plate have been compared with those on the order and installation (supply voltage, frequency).
- The work has been prepared in accordance with the dimensions shown in the example installation and standard EN 752.
- **Stop valves** (provided with certain devices) must be fitted on the effluent inlets as well as on the discharge line, as close as possible to the pumping station.

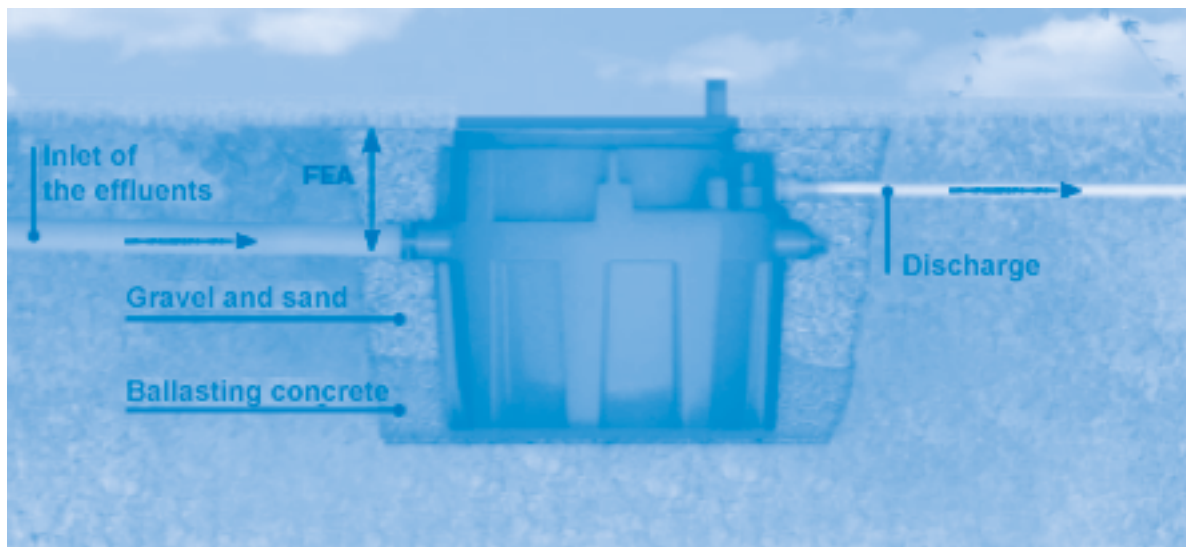
NOTE: External valves and valves are not supplied.

**Note:**

- The pumping station must be ventilated.
- The pumped fluid is appropriate and authorised by this documentation.  
(see section 3.9, page 5)
- In case of discharge of greasy effluents, the use of a degreasing tank is essential.

Wastewater other than those mentioned above, for example, of artisanal or industrial origin, must not be discharged into the pipes without prior treatment.

The pumping station purchasing adviser and the installation company must have a perfect knowledge of the nature of the soil, of any presence of ground water, in order to define the civil engineering of their project, and therefore how the tank will be buried.



## How are SANIFOS tanks buried underground?

- Choose a suitable location for the station's installation. In principle it should be installed at a lower floor height than the drained elements to allow a drop of the elements(s) in the station.
- Check there are no underground communal cables, conduits or pipes.
- Hollow out the pit.  
The bottom of the pit must be flat and horizontal.  
The depth of the pit must allow a slope of between 1 and 3% for the wastewater pipes entering the station.
- The excavation should be at most 500 mm deeper than the depth or overall length of the tank. If the excavation is done by hand, the sides should be propped to prevent any landslip.
- A clean ballast should be spread out and secured at the bottom of the excavation. It should be about 200 mm thick.

- If the bottom of the pit is made of concrete, attach the tank to the ground by its anchor points.
- Position the fitted pumping station in place in the pit.
- Fill in the perimeter of the station with a mixture of sand and gravel. Balance the backfill pressure to avoid deformation of the tank by filling it with clear water.
- Connect the water inlet and ventilation discharge pipes.

In the case of an installation where there are water tables or impermeable or clayey surfaces, the bottom of the pit must be covered with a bed of sand approximately 20 cm thick (mixture of sand and dry cement with a ratio of 200 kg of cement per 1 m<sup>3</sup> sand)

If there is an apparent groundwater table on the surface, replace the compacted sand with a cement-poor mixture (the space between the tank and the pit must be at least 20 cm).

#### ATTENTION



#### NOTE:

Ensure all pump preparation and piping connection work has been completed before burying the tank.

### 5.3 Adjusting the height of the cover to the ground

The non-slip cover is secured by screws on the SANIFOS® 250 and SANIFOS® 500. SFA can optionally provide a 300 mm extension for SANIFOS® 250 and SANIFOS® 500 models.

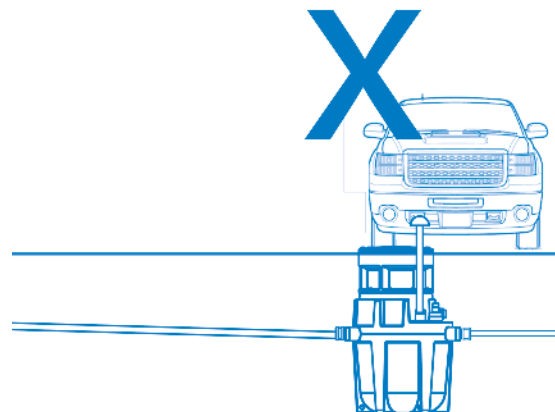
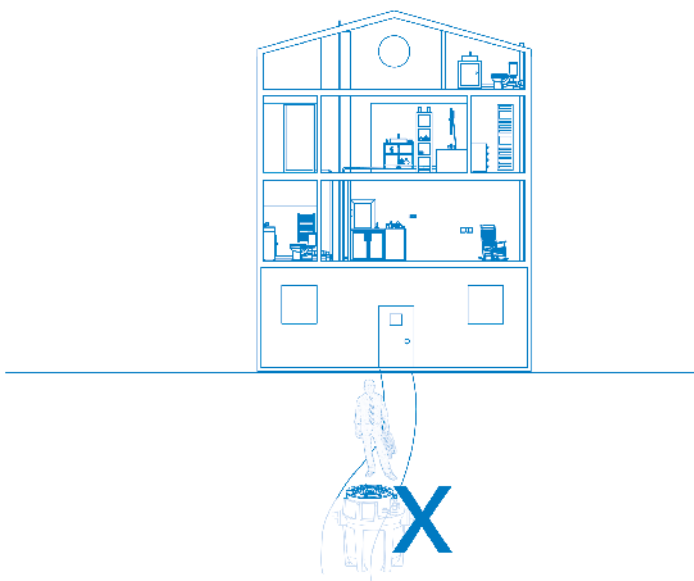


#### DANGER

**It is forbidden to park or drive on the SANIFOS® 250 and SANIFOS® 500 pumping stations. They must not be installed where pedestrians walk.**

**The maximum permissible weight, on an occasional basis, is 200 kg on the SANIFOS® 250 and SANIFOS® 500.**

**It is strictly forbidden to walk on the SANIFOS® 110 pumping station.**





## ⚠ DANGER



**Electrical connection work performed by an unqualified individual. Risk of death by electric shock!**

**→ The electrical connection must be performed by a qualified and licensed electrician.**

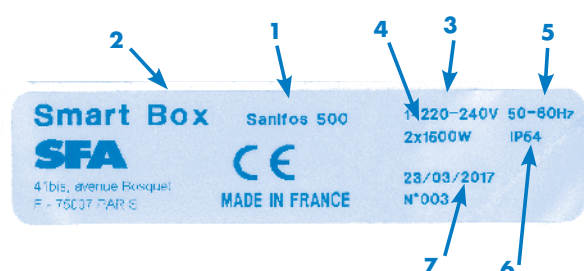
**→ The electrical installation must meet the current standards in the country.**

The power supply must be class 1.

The device must be connected to an earthed junction box. The power supply circuit must be protected by a 30 mA differential circuit-breaker rated at 16 A for single-phase SANIFOS® 110, 250 and 500. For the three-phase SANIFOS® 500, use a 25 A calibre, 30 mA four-pole differential circuit breaker. This connection must be used exclusively for the SANIFOS® power supply. If the cord of this device is damaged, it must be replaced by the manufacturer or its after-sales service in order to avoid any danger to users.

## 6. SMART CONTROL BOX

### Rating plate



- |   |                                  |
|---|----------------------------------|
| 1 | Name of the pumping station      |
| 2 | Name of the control box          |
| 3 | Supply voltage                   |
| 4 | Power consumption of the engines |
| 5 | Frequency                        |
| 6 | Protection index                 |
| 7 | Date of production               |

## ⚠ DANGER



**Submersion of the control device.**

**Risk of death by electric shock**

**→ Only use the control device in rooms safe from floods.**



The SANIFOS® 500 pumping station comes as standard with the SMART remote control unit.

### KEY

- 1 Current disconnector
- 2 Access the menu
- 3 Returns
- 4 Menu navigation
- 5 Activation/deactivation of the pumps
- 6 Pump operation indicator light
- 7 Forced operation of pumps

## 6.1 Electrical characteristics of the control unit

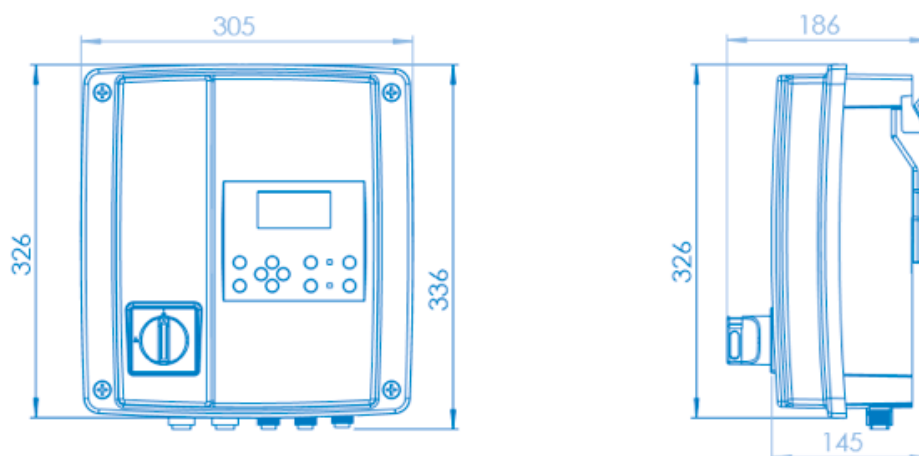
Parameter	Value
Nominal supply voltage	1 ~ 220-240 V AC
Network frequency	50/60 Hz
Protection class	IP54
Nominal current per engine	
- SANIFOS® 110 and 250	6 A
- SANIFOS® 500 single phase	2 x 6 A
- SANIFOS® 500 three-phase	2 x 4.75 A

## 6.2 Technical characteristics of the detection device

Analog level sensor:

- Signal 0 - 5 V
- Input voltage 0 - 5 V

## 6.3 Dimensions of the SMART remote control box



## 6.4 Transport

For all transportation, the control panel must be switched off.

Environmental transport conditions

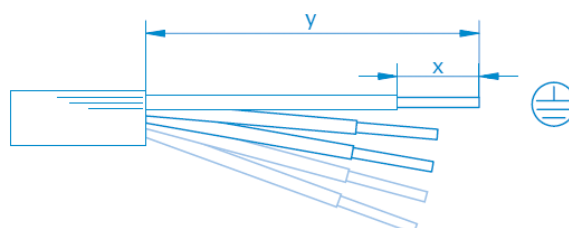
Environmental conditions	Value
Relative humidity	85% maxi. (no condensation)
Ambient temperature	-10°C to +70°C

## 6.5 Connecting the control unit

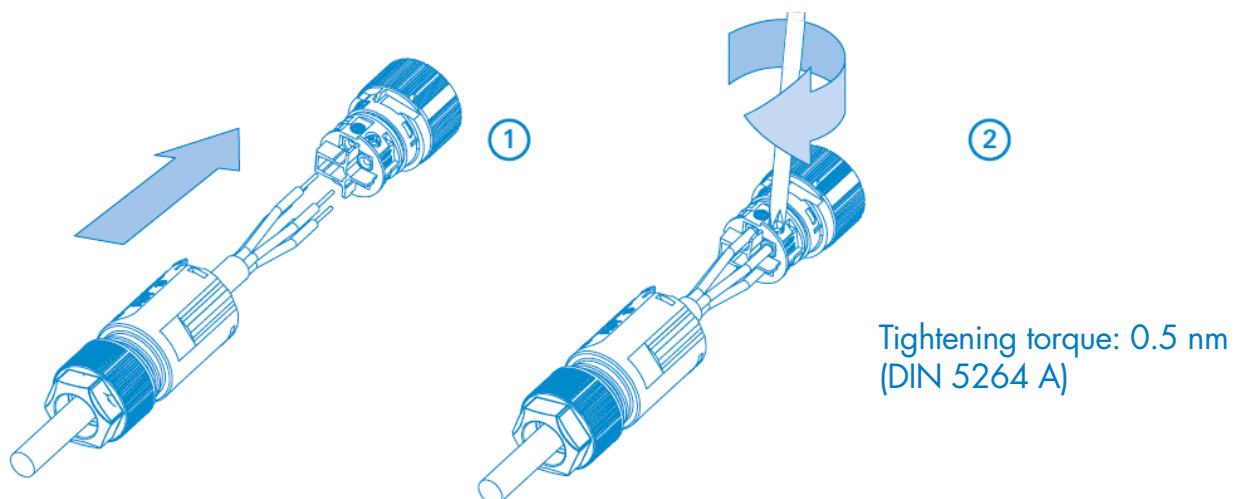
On the SANIFOS® 500, the motor and float cables must be connected to the SMART control box.

### Preparation of the conductive wires

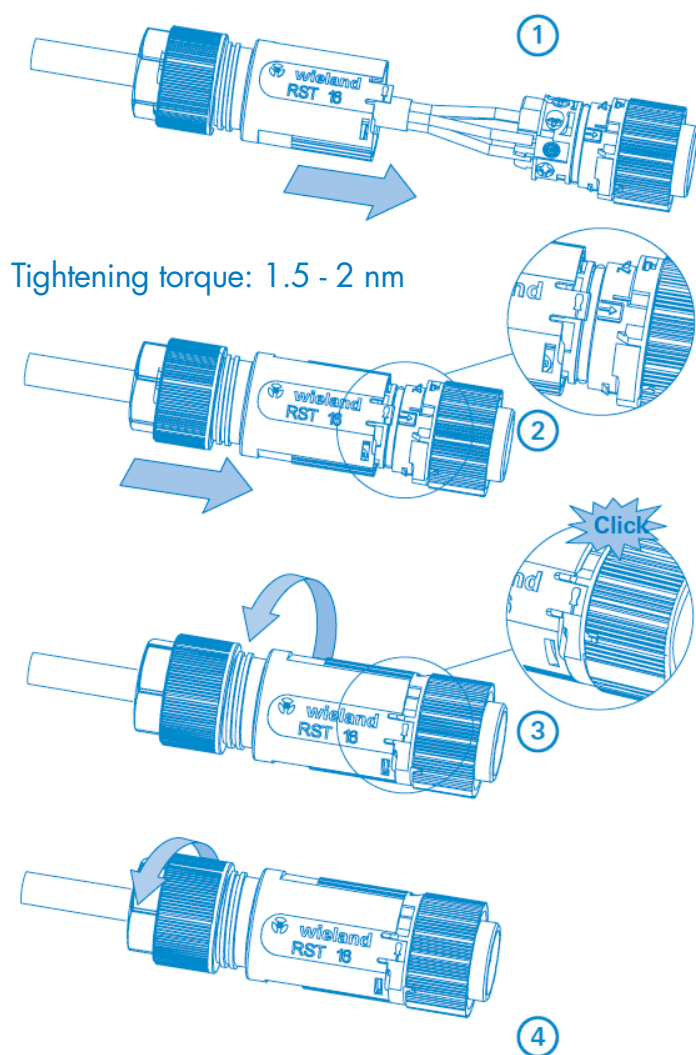
	Connector	
Conductor	PE	N, L, 1, 2, 3
Disassembly length y (mm)	33	25
Stripping length x (mm)	8	8



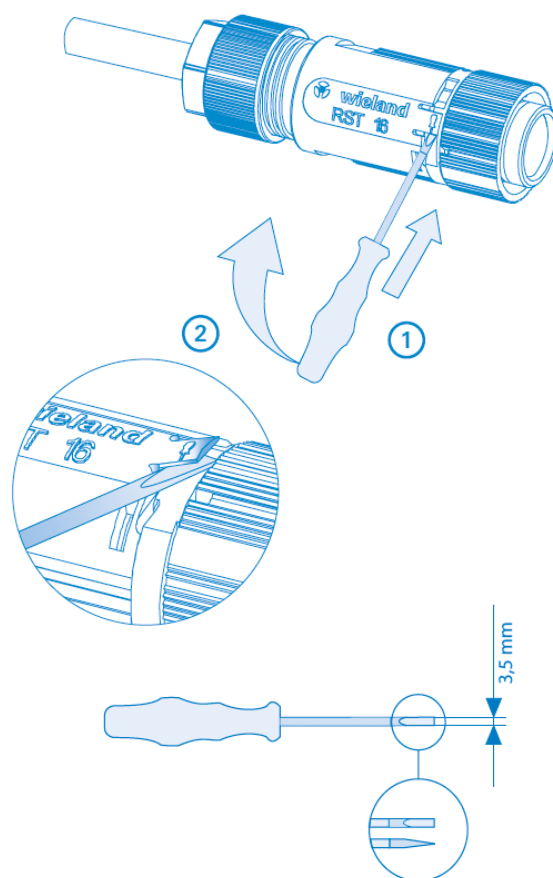
## Assembling the connector



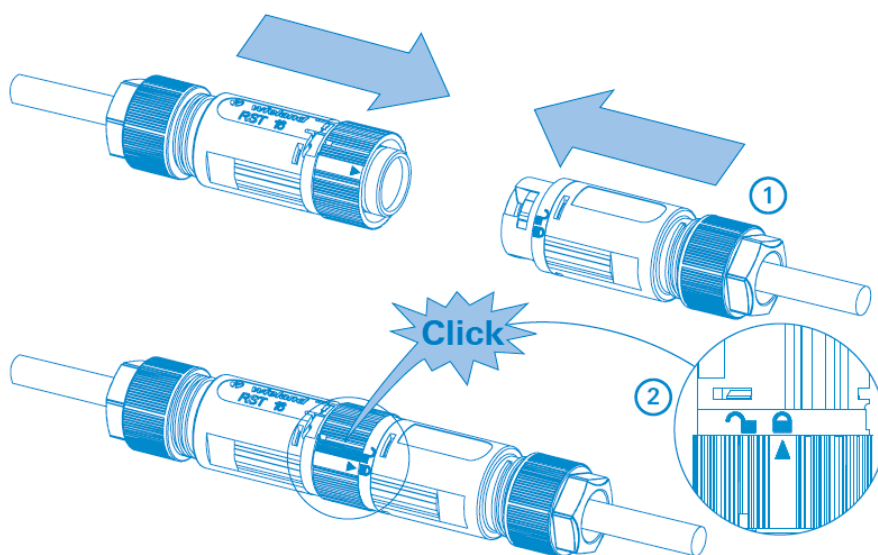
## Closing the connector



## Opening the connector

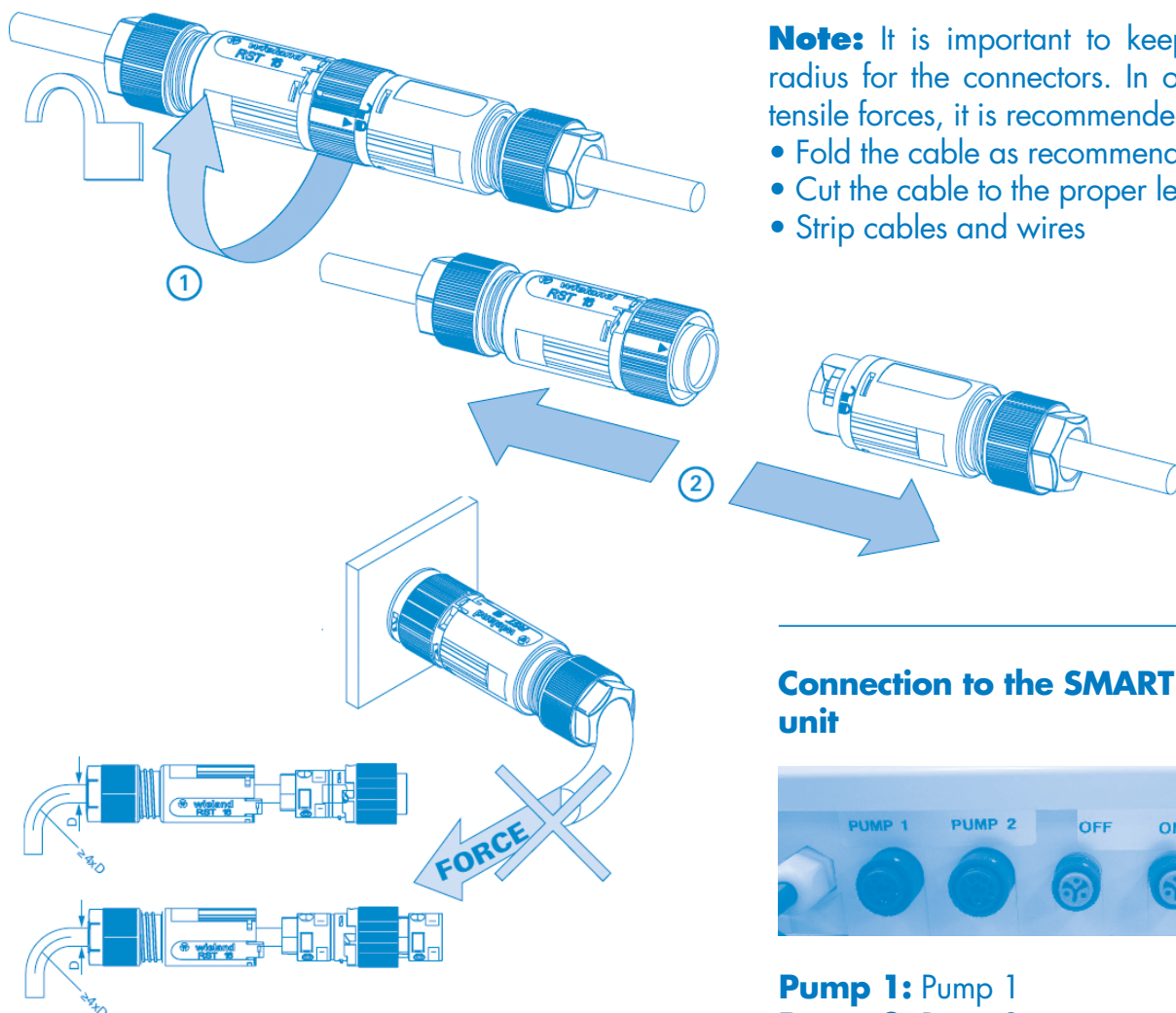


## Connection and connector lock



The right-hand part is already mounted on the SMART control box.

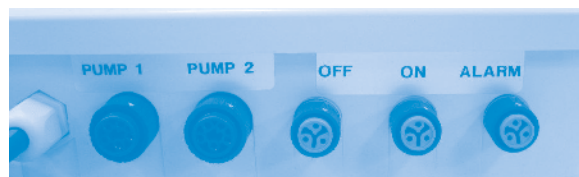
## Unlocking and disconnecting the connector



**Note:** It is important to keep a minimum radius for the connectors. In order to avoid tensile forces, it is recommended to:

- Fold the cable as recommended opposite
- Cut the cable to the proper length
- Strip cables and wires

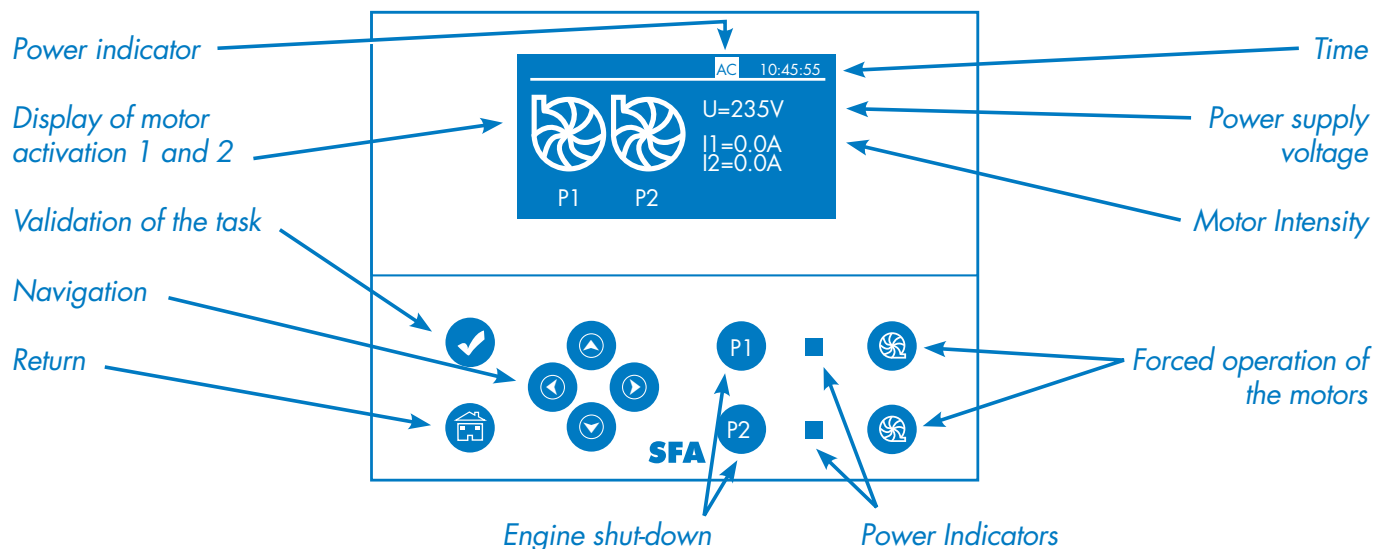
## Connection to the SMART control unit



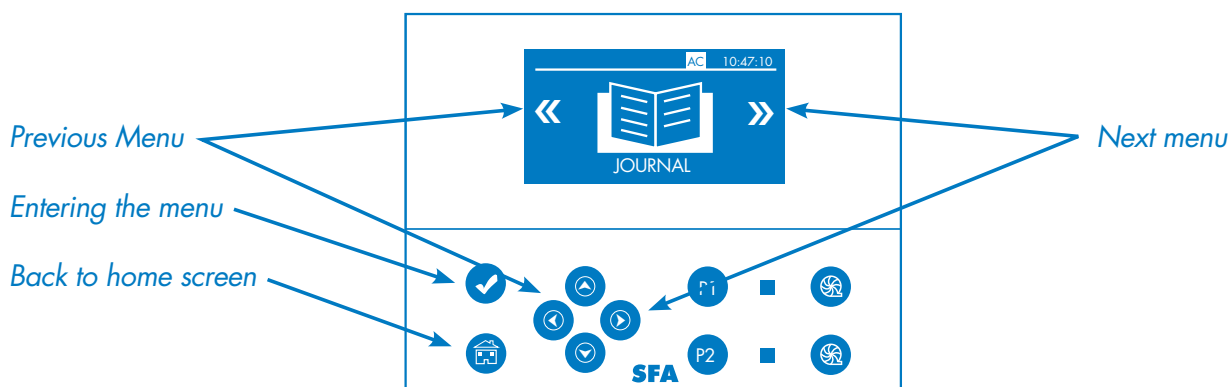
**Pump 1:** Pump 1  
**Pump 2:** Pump 2  
**OFF:** Low level float  
**ON:** High level float  
**ALARM:** Alarm float

## 6.6 Using the SMART Control unit

### Overview



### Navigating the menu

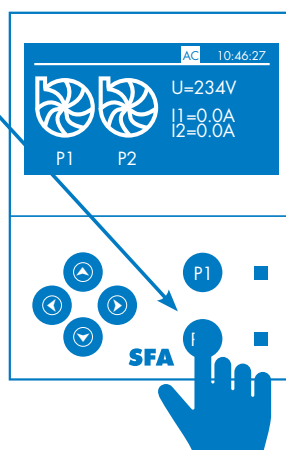


### Motor activation/deactivation

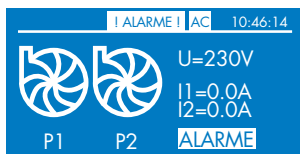
In the case of maintenance or replacement of a motor, it is possible to deactivate each motor independently.

Press and hold for 5 seconds to deactivate the motor. The LED turns red and a cross is displayed on the shut-down engine.

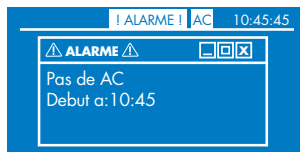
Press again for 5 seconds to reactivate the motor, the led will turn green and the cross will turn off.



## Checking the alarms

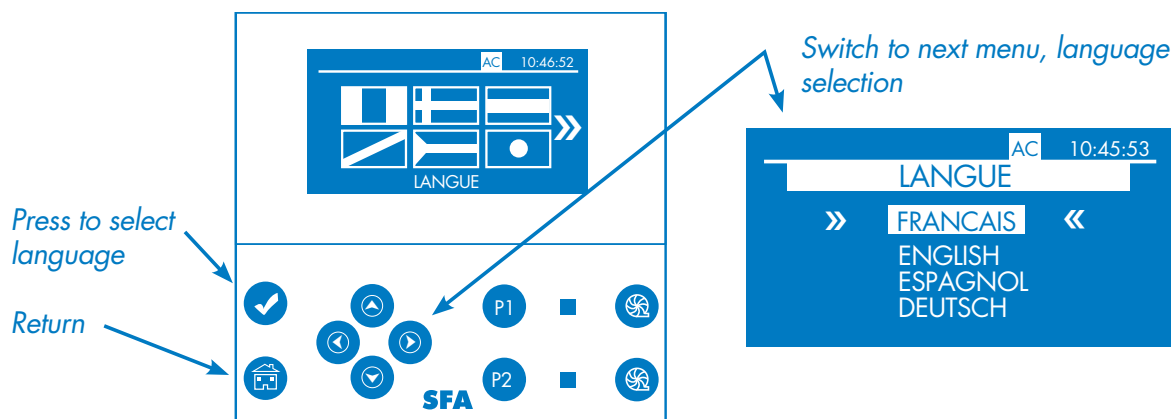


A special window giving the alarm type and the alarm time remains open as long as the fault that generated the alarm is present.

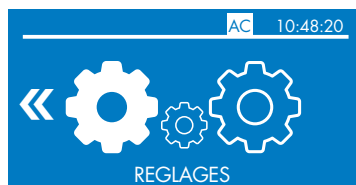


As soon as the fault disappears, return to the general screen on which an alarm notification appears. To remove the alarm notification, simply press one of the two forced-on buttons. Details of the alarms can be consulted in the alarm log.

## 1. Choice of languages



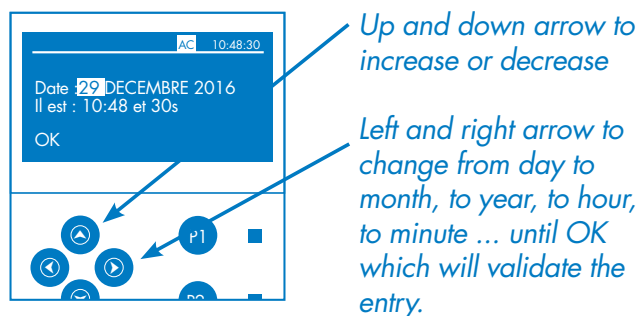
## 2. Setting parameters



Allows certain parameters to be modified to optimise the operation of the pumping station.

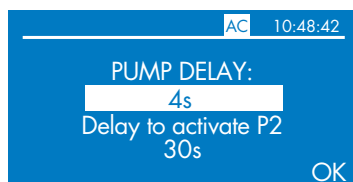
### 2.1 Setting the date and time

Parameter required for alarm management, history and maintenance periods. The date and time will be saved as soon as they are validated with OK.



### 2.2 Setting the time delay

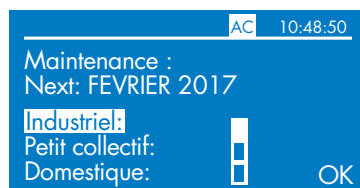
Allows optimised pumping times as a function of the total dynamic head



In order to empty the tank as much as possible and optimise the pumping of the materials on the surface, we can increase the engine shut-down time. Pre-set to 4 seconds after float OFF. The higher the pump, the longer the time delay will be.

The motor activation time is pre-set to 30 seconds. After thirty seconds of continuous operation, the second motor is activated to reinforce the first one. If this parameter is too long (for the client), it is possible to decrease the delay.

## 2.3 Indication of the next maintenance procedure



Gives the date of the next maintenance procedure, a reminder on the screen will be displayed on the scheduled date.

Maintenance frequencies are different depending on the area of use of the station (according to EN12056-4).

For:

- Industrial use: 3 months
- Small collective use: 6 months
- Domestic use: 12 months

Press OK to confirm the type of use.

## 3. Consulting the log

### 3.1 List of alarms

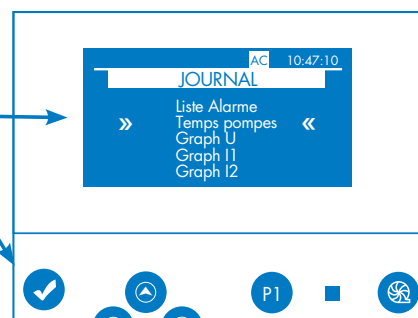
Alarm indicator in real time, with identification of the problem detected for quick maintenance. Option to view alarm history.

Indication of the type of alarm

Date and time of last alarm

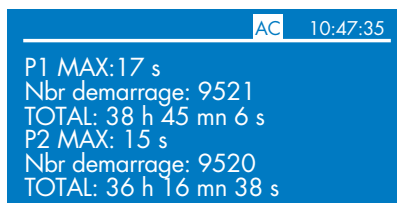


Enter the history



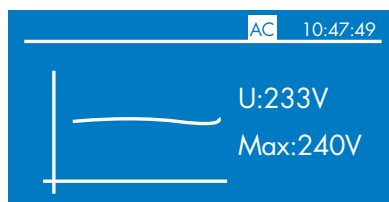
History check

### 3.2 Running time of engines



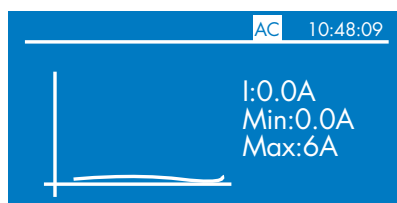
Quantifies the running time of the motors since their first use (TOTAL), the number of starts and the maximum operating time (PMAX).

### 3.3 Checking the voltage



Controls the voltage of the electrical network

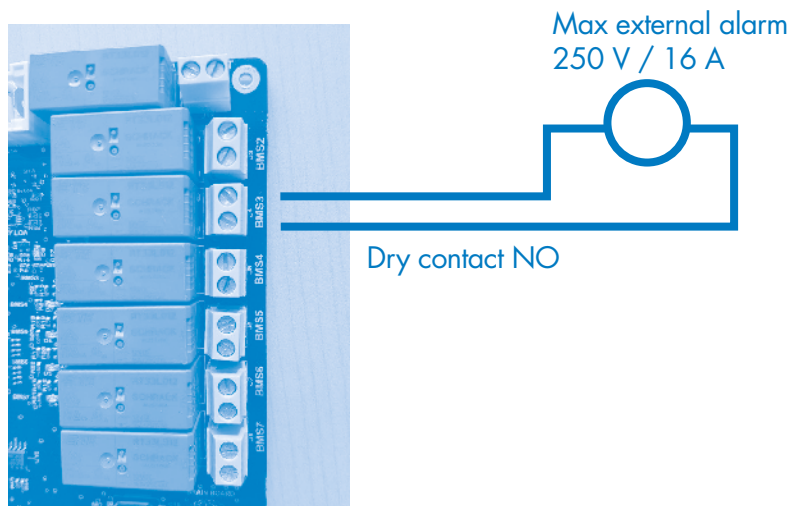
### 3.4 Intensity control



Controls the power consumption of the motors. To be checked during engine maintenance, for example.



## 6.7 Option of connection to an external alarm



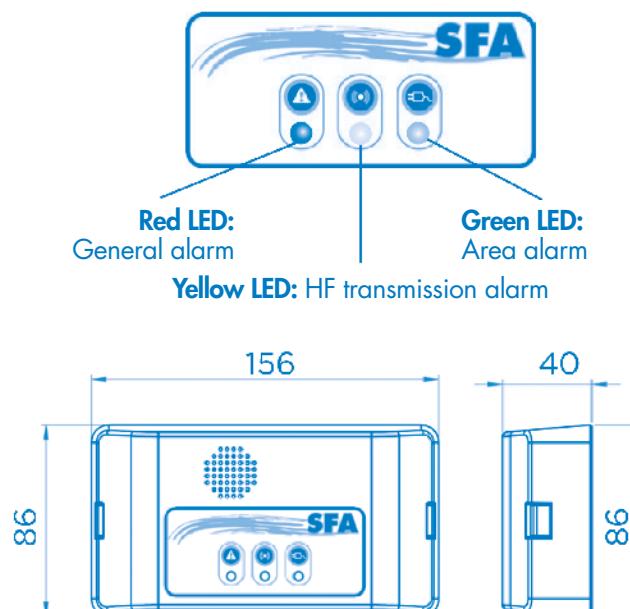
Option of externalising the alarm signal (depending on the model). Dry contact **(no voltage)** NO (normally open).

The lugs can be connected to a BMS (Building Management System) system or to a live system (max. 250 V / 16 A.).

This contact closes as soon as the station is in alarm mode (except in the case of area alarm) and remains closed as long as the alarm sounds.

## 6.8 Remote wireless alarm box (included with SANIFOS® 500)

The alarm box must be installed indoors, in a damp-free location and close to an electrical outlet.



### Technical characteristics of the alarm device

HF alarm unit 868 MHz (radio)

Unobstructed range: 100 m

Audio and visual information

Protection index: IP20



## 7. ACTIVATION

### 7.1 Prerequisites for commissioning

Before commissioning the pumping station, make sure that the electrical connection for the pumping station and all protective devices has been correctly performed.

The pump unit and all protective devices are connected correctly.

- The safety instructions have been followed.
- The operating characteristics have been checked.
- The regulations in force at the place of installation are complied with.

### 7.2 Application limit

- Avoid running the pump with the valve closed.
- Observe the type of fluids permitted (see section 3.5).
- Dry running, without pumped fluid, must be avoided.

When in use, observe the following parameters and values:

Parameter	Value
Max. allowed temperature.	40°C
Permitted fluid	up to 70°C for max. 5 minutes per hour
Max. room temperature.	50°C
Operating mode	Intermittent service SANIFOS® 110 and SANIFOS® 250: S3 30 % Intermittent service SANIFOS® 500: S3 50%

### 7.3 Starting and stopping

The pump / pump unit must be properly connected electrically.

The automatic control starts and stops the pump when a defined level is reached.

The position of each float is set at the factory.

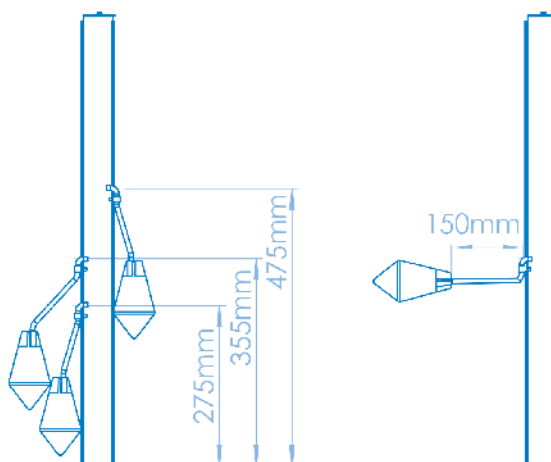
Never change this setting.

In the event of replacement of one or more float switches for maintenance operations, position them as shown in the illustration opposite.

The free length of the floats shall be 150 mm  $\pm$  5 from the point of attachment of the cable to the base of the float.

Ensure that the floats move freely.

*SANIFOS® 500 floats*



## 7.4 Starting frequency

To prevent engine overheating and excessive stress on the engine, seals and bearings, limit the number of starts to 10 per hour.

## 7.5 Commissioning with the control box

### DANGER



- The control box cover is not properly closed. Risk of electric shock!
- Properly close the control box cover.
- Then reconnect the power plug.

## 7.6 Operations required for commissioning

1. Perform a functional and sealing test of the pumping station: once the hydraulic and electrical connections are made, check the connections for leaks by running water successively through each inlet used. Ensure the device is operating properly and there are no leaks by performing a water test and observing several start cycles.
2. Check the various points on the checklist (section 9.1, page 34).
3. **WARNING:** Do not run the engine in forced mode (by pressing the key on the keypad) before putting the pump in water. Dry running damages the grinding system.

## 7.7 Decommissioning

1. Close the valves on the supply pipes.
2. Drain the tank by pressing the forced mode button on the pump.
3. Close the discharge valve
4. Switch off the electrical power supply and record the installation.

### DANGER



- The current is not cut. Risk of electric shock!
- Disconnect the plug or disconnect the electrical conductors and take measurements

5. Inspect the hydraulic parts and shredding blades. Clean them if necessary.
6. Clean the tank

### WARNING



- Pumped fluids harmful to health. Dangerous for people and the environment!
  - Pumping stations used to discharge fluids that may be harmful to health must be decontaminated.
- If necessary, wear a mask and protective clothing.

## 8. MAINTENANCE

### 8.1 General information / Safety instructions

#### WARNING



**Work performed on the pumping station by unqualified staff. Risk of injury!**

- Repairs and maintenance must be performed by specially trained staff.
- Observe the safety and basic instructions.

#### WARNING



**Pumped fluids harmful to health. Dangerous for people and the environment!**

- Pumping stations used to discharge fluids that may be harmful to health must be decontaminated.
- If necessary, wear a mask and protective clothing.

### 8.2 Maintenance and inspection operations

#### WARNING



**Work on the pumping station without adequate preparation. Risk of injury!**

- Properly stop the pumping station and secure it against inadvertent operation.
- Close the inlet and discharge valves.
- Drain the pumping station.
- Close any auxiliary connections.
- Allow the pumping station to cool to room temperature.

In accordance with EN 12056-4, pumping stations must be maintained and repaired to ensure the proper disposal of wastewater and to detect and eliminate malfunctions at an early stage.

The proper functioning of pumping stations must be checked by the user once a month by observing at least two operating cycles.

The inside of the tank should be checked from time to time and deposits, especially around the level sensor, should be removed, if necessary

In accordance with EN 12056-4, maintenance of the pumping station must be performed by qualified staff. The following intervals should not be exceeded:

- 3 months for pumping stations for industrial use
- 6 months for pumping stations for small communities
- 1 year for domestic pumping stations

## 8.3 Maintenance contract

As with any technical, high-performance equipment, SANIFOS® pumping stations must be maintained to ensure a sustainable level of performance. We recommend you take out a maintenance contract with a qualified company to carry out regular inspection and maintenance work. For more information, please contact us.



### **Clogged ventilation port**

**Risk that the pumping station will not work**

**→ Check the ventilation piping regularly. The passage should never be blocked.**



### **NOTE:**

Setting up a maintenance plan avoids costly repairs, minimizes maintenance work and achieves correct and reliable operation.

## 9. CHECKLIST FOR COMMISSIONING/ INSPECTION (1) AND MAINTENANCE (2)

### 9.1 Checklist for commissioning SANIFOS pumping stations®

- Check that the system is switched off.
- Unscrew the cover (SANIFOS® 110) or the cover bolts (SANIFOS® 250 and SANIFOS® 500)
- Check that the tank is level
- Check that there is no deformation, crushing or cracking of the tank
- Check the internal cleanliness of the tank (no soil, no sand...)
- Check the tightness of the valve connections
- Check that the discharge diameter is appropriate for the installation
- Check that the installation location of the SANIFOS station® respects a slope of gravity discharge of the effluents to the tank (and that the FEA makes it possible to have the cover of the tank at the level of the ground)
- Check the tightness of the clamps of the inlet and outlet connections
- Check the presence of the tank ventilation (diameter 75). Air must flow in both directions.
- Check the tightness of the electrical casing (underground tank) or the glands (floor-standing tank)
- Check that the voltage and frequency of the power supply correspond to those indicated on the rating plate of the appliance
- Check the size of the power supply cable (3G 1.5 mm<sup>2</sup>)
- Check that the power supply circuit is earthed and protected by a 30 mA differential circuit breaker
- Check that the power cable is not damaged
- Check that the connection is only used for the power supply of the pumping station
- Check that the connectors are in the correct locations
- Check the tightness of the waterproof connectors (SANIFOS® 250 and SANIFOS® 500)

- Screw the cover (SANIFOS® 110) or the cover bolts (SANIFOS® 250 and SANIFOS® 500)
- Switch the system back on
- Carrying out some pump operation tests (switching on / off) using each sanitary fixture connected to the pump
- Check the alternating operation of the pumps (on SANIFOS® 500)
- Check the freedom of movement of the float(s)
- Check for the correct functioning of the non-return valve
- Check the general sealing and tighten the connections if necessary.
- Check the correct functioning and ease of operation of the shut-off valves
- Check the flow at the discharge outlet

### **Power-on checks to be performed on the SMART unit**

- Set the language, date and time
- Define the use of the station: Industrial, small collective or domestic
- Check that the quick connectors are correctly connected to the SMART unit
- Check that the lights on both pumps are green
- Check the power supply voltage
- Check that the motors are operating correctly
- Check that the forced current is between 4 and 6 A
- Check that the remote alarm box is switched on
- Check that the level of water in the tank at the end of the cycle is at +/- 10 cm from the bottom of the tank
- Set the delay time accordingly
- Check that the data has been correctly recorded by the SMART box (log, pumping time...)

## **9.2 Checklist for commissioning SANIFOS pumping stations®**

Any maintenance performed on the SANIFOS pumping station® must be carried out by qualified personnel.

It is advisable for the user of the SANIFOS® pumping station to enter into a maintenance contract at the time of commissioning.

If this is not the case, contact the SFA technical service for any maintenance work on the SANIFOS pumping station®.

**SFA Technical service: 01 44 82 25 55**

- Remove the cover from the station
- Check the seal on the tank
- Clean the tank, motor and float with a high-pressure cleaner
- Fill the tank until the pump starts
- Once the pump starts, part of the water is drained
- After the pump stops, switch off the system
- Close the supply valves and the shut-off valve (not supplied on SANIFOS® 110)
- Drain the rest of the water in the tank by means of a water suction device or other pumping method
- With the valve closed, unscrew the fitting (bottom of tank on SANIFOS® 110) which connects the pipework to the pump body
- Remove the pump from the tank (using the cable on SANIFOS® 250 and SANIFOS® 500)

- Check the general condition of the pump, electrical cables, float (switching on, tripping) and the blade. Contact SFA Technical Service if a replacement element is faulty.
  - Clean and check for the correct functioning of the non-return valve.
  - Lower the pump back into the tank
  - Screw the fitting back onto the pipe
  - Open the valves
  - Power on again
  - Perform several switching on/switching off tests using the water points
  - Close the cover and tighten the bolts after greasing them (on SANIFOS® 250 and SANIFOS® 500)
- 





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