MembraSAL — Complete station

User guide · installation, operation and maintenance

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1. Welcome

Thank you for choosing the Complete station. Everything is in one cabinet: pre-filter, membranes, pumps, storage tank and controls. In this guide you will read how the Complete station is installed, how to operate it and how to maintain it properly. The guide is made to be read on screen; there is no need to print it.

Have the Complete station installed by a qualified installer, who knows your situation and the regulations that apply where you are. Installation is not included in the price.

2. Your Complete station

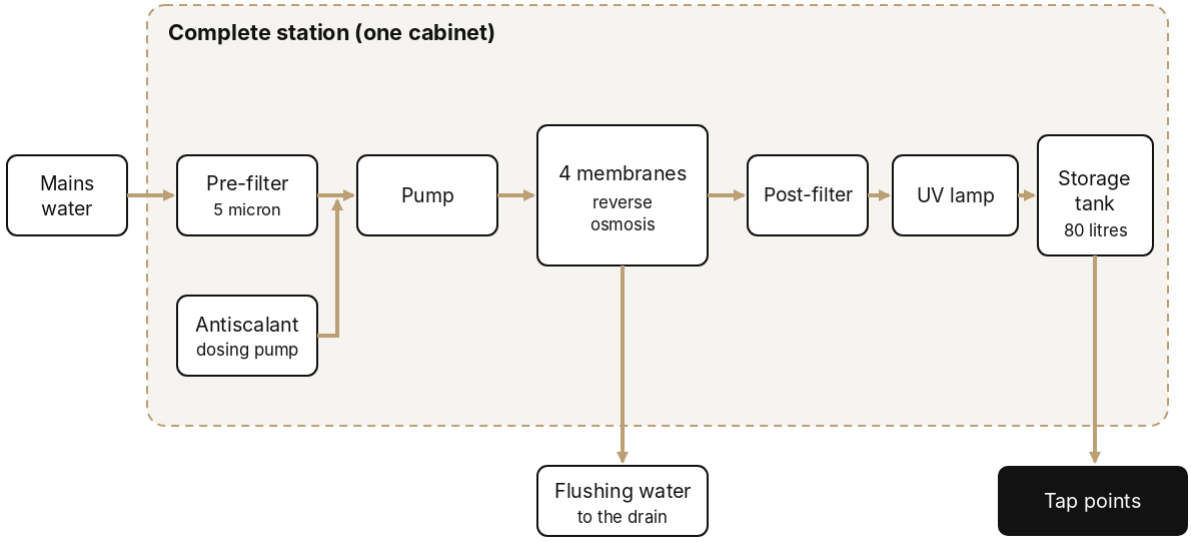
The Complete station purifies water using reverse osmosis. First a pre-filter stops dirt particles, down to 5 micron. A dosing pump adds an agent that prevents scaling on the membranes (antiscalant). A pump then forces the water through the membranes. These remove up to 95% of dissolved salts, including limescale. The flushing water with the substances held back goes to the drain.

The purified water passes through a post-filter and a UV lamp to the storage tank in the cabinet. When the tank is full, the Complete station goes to rest and briefly flushes the membranes. As soon as you use water, it starts again.

Component	Specifications
Dimensions (l × w × h)	80 × 60 × 170 cm
Weight	202 kg
Capacity	1,000 litres per hour at 25 °C water temperature; 700 litres per hour at 10 °C
Dissolved salts	removes up to 90 to 95%
Membranes	four
Pre-filter	filter cartridge down to 5 micron
After the membranes	post-filter, UV lamp and 80-litre storage tank
Pump operating pressure	7 to 10 bar
Connections	supply 1"; purified water 1/2"; drain (flushing water) 1/2"
Power	230 V, 50 Hz, earthed connection (1/N/PE); 10 A
Power consumption	1.2 kW; controller 10 W
Operation	control panel with display and rotary knob

Cold water gives fewer litres per hour. That is normal with reverse osmosis.

Remineralisation is not included as standard. If you want minerals back in your water, H2Ot can supply this as an option.



3. Before you start

The right location

- Indoors, out of the sun, wind and rain.
- A dry, frost-free room between 5 and 40 °C. A cold room gives less water.
- Well lit (at least 150 lux) and well ventilated.
- Enough space around the cabinet for maintenance. Leave at least 4 cm free below the pre-filter to be able to change the cartridge.
- An open drain and an earthed circuit nearby.

Water, connections and power

Component	Requirement
Supply water temperature	5 to 30 °C; above 25 °C the membranes work slightly less well
Supply water pressure	2.5 to 6 bar; fluctuations at most 1 bar
Dissolved salts	less than 2,000 ppm
Hardness	0 to 15 °dH
Acidity (pH)	6.5 to 9 in normal use
Turbidity	less than 1 NTU; silt density index (SDI) less than 3
Iron and manganese	each less than 0.1 mg/l
Free chlorine and oil	none
Odour	odourless
Supply pipes	copper or plastic; no iron or steel pipes
Flushing water drain	open drain without narrowing, in accordance with the regulations that apply where you are
Power	230 V, 50 Hz, earthed; 10 A

You can find your water hardness by entering your postcode on your water company's website. With well water or if in doubt, have a water analysis done first. Sometimes extra pre-treatment is needed.

Chlorine. The requirement "no free chlorine" applies to the water before the pre-filter. Dutch mains water normally meets this; an extra carbon filter is then not needed. If there is free chlorine in your water, have an extra activated carbon cartridge fitted before the Complete station.

4. Installation

These steps are for the installer.

1. **Check.** Check all couplings. They may have come loose during transport.
2. **Position.** Place the cabinet level in the chosen spot, with space around it for maintenance.
3. **Supply.** Connect the water pipe to the supply (1"). The pump needs a constant, ample supply.
4. **Drain.** Run the drain hose for the flushing water to an open drain, without narrowing. Let it hang 10 to 15 cm above the drain (air gap). Follow local regulations.
5. **Flush the membranes.** At the first start, run the purified water to the drain for 30 to 60 minutes to flush the new membranes. Do not put the hose into the drain, but let the water run in from above, with a generous air gap (at least twice the diameter of the drain pipe).
6. **Connect the outlet.** Then connect the outlet (1/2") to the pipe to the tap points. A non-return valve is already fitted.
7. **Antiscalant.** Fill the dosing pump's jerrycan with antiscalant and bleed the dosing pump (see chapter 7).
8. **Power.** Connect the Complete station to an earthed 230 V circuit.
9. **Mind the pump.** The pumps are not self-priming. Never let them run dry: this damages the pump and voids the warranty.

Ordering antiscalant. Antiscalant is not included as standard. You order it from H2Ot (Antiscalant 25 kg).

Connection to a building management system is possible. Your installer arranges this.

5. Commissioning

The control panel

Button	What it does
Reset	stops the running programme and returns to the start screen
Rotary knob OFF	the Complete station is on standby and does not purify
Rotary knob AUTO	the Complete station purifies and flushes automatically; this is the normal position
Rotary knob CIP	maintenance position, for cleaning the membranes (installer)
OK ■, up ▲, down ▼	scroll through the screens and confirm settings

First start

1. **Power on.** The Complete station starts in the OFF position. The display shows the time and date, and whether the system is ready to start. Any fault is also shown.
2. **Basic settings.** The installer sets the time and date and checks the settings. They keep the factory start values of the filter counters.
3. **Start.** Turn the rotary knob to AUTO. The Complete station first flushes briefly and then starts purifying.

4. **View statistics.** Hold OK ■ for 2 seconds. The system data is then shown for 4 seconds. Useful to see when maintenance is needed.

Your system comes with a phone app; you will receive it on delivery.

6. Daily use

Leave the rotary knob on **AUTO**. The Complete station then works by itself. Use ▲ and ▼ to scroll through the screens:

Screen	What you see
General	conductivity of the purified water, how much water is being produced now (litres per minute), messages and flushing
Flow	purified water, flushing water and supply in litres per minute, and what share of the water is purified (in %)
Conductivity	conductivity and temperature of the purified water and of your mains water. The lower the number for the purified water, the fewer dissolved salts.
Pressure	pressure of the supply, before the membranes and of the purified water
Pre-filter	how much water the filter cartridge can still handle (in m^3) and the pressure difference across the filter

- **Rest is normal.** When the storage tank is full, the Complete station stops. At rest it briefly flushes the membranes every 3 hours.
- **Check the display now and then.** If there is a message, see chapter 8.
- **Check now and then** whether the jerrycan still contains enough antiscalant and whether everything is dry. You order new antiscalant from H2Ot.
- **Off for more than 48 hours?** Do not simply switch the Complete station off. Have the installer preserve the membranes (see chapter 7).

7. Maintenance and replacement

These intervals come from the manufacturer. Stick to them, even if the water still seems fine.

When	What	Who
Every 3 months (after 6 months at the latest), or when the display asks for it	Replace the cartridge in the pre-filter	You or your installer
When the jerrycan is almost empty	Top up antiscalant; then bleed the dosing pump	You or your installer
When the display indicates it (message 06, 08 or 09)	Clean (CIP) or replace the membranes	Installer
After cleaning a sensor	Calibrate the conductivity sensors	Installer
About every 2 years	Replace the membranes	Installer
At least once a year, or sooner depending on the number of operating hours	Replace the UV lamp	Installer
Every 6 months	Replace the cartridge in the post-filter (after the membranes)	You or your installer

When	What	Who
Every year	Service check. What your installer checks every year is described in the service manual supplied on delivery.	Installer
When idle for more than 48 hours	Preserve the membranes; keep frost-free and no warmer than 45 °C	Installer

Replacing the pre-filter

The display shows how much water the cartridge can still handle (factory setting 600 m^3). When it is used up, or the pressure difference across the filter rises to 1.5 bar, the display tells you to replace the cartridge. The Complete station then stops until the cartridge has been replaced.

1. **Water off.** Turn the rotary knob to OFF. Close the water supply and release the pressure.
2. **Old cartridge out.** Open the filter housing and take out the old cartridge.
3. **New cartridge in.** Fit the new cartridge and close the housing again. Note the arrows on the lid: they point in the flow direction. Do not swap inlet and outlet.
4. **Water on.** Open the water supply and check that everything stays dry.
5. **Reset the counter.** Hold RESET for 5 seconds.
6. **Start.** Turn the rotary knob back to AUTO.

Bleeding the dosing pump (after topping up antiscalant)

1. Make sure the Complete station is switched on.
2. Open the bleed valve on the dosing head about half a turn.
3. Set the dosing pump knob to 100% and wait until liquid without bubbles comes out of the bleed hose.
4. Set the knob back to its previous position (0.1 to 1%, depending on your water and the agent) and close the bleed valve.

Cleaning and preserving the membranes

Over time the membranes become fouled with limescale or organic material. You notice this from less water or a higher conductivity. The installer then cleans them with a separate cleaning set (CIP), using an acidic agent against limescale or an alkaline agent against organic fouling. If the Complete station is idle for more than 48 hours, the installer preserves the membranes with a preservation fluid. This must be renewed every month.

Only use original parts from H2Ot: the pre-filter cartridge (5 micron), the post-filter cartridge, the UV lamp, Antiscalant 25 kg and the Replacement membrane — MembraSAL 500 l/h, Large household, Villa and Complete station (four per system).

8. Troubleshooting

In the event of a fault, the display shows a message with a number.

What do you see?	Possible cause	Solution
03 Antiscalant low	The antiscalant jerrycan is (almost) empty	Top up antiscalant and bleed the dosing pump.
04 Low supply pressure	No or too little water coming in	Check that the main tap is open. If the message remains, contact your installer.
05 Low pressure before the pump	Pre-filter blocked or valve in the supply not working	Replace the pre-filter cartridge. If the message remains, contact your installer.

What do you see?	Possible cause	Solution
06 High pressure at the membranes	Membranes fouled	The installer has the membranes cleaned or replaced.
07 Pump overloaded	The pump protection has tripped	Contact your installer.
08 High conductivity of purified water	Sensor needs calibrating or membranes are fouled	The installer calibrates the sensor, cleans or replaces the membranes.
09 Too little purified water	Membranes fouled or flow meter not working	Contact your installer.
10 Too little flushing water	Flushing water sensor or valve not working	Contact your installer.
12 High conductivity of mains water	Your mains water contains more dissolved salts than allowed	Have your water and the sensor checked by your installer.
14 to 17 Pressure sensor	A pressure sensor or cable is not working properly	Contact your installer.
"Please replace a cartridge"	The pre-filter cartridge is used up	Replace the cartridge and hold RESET for 5 seconds.
Display stays blank	No power	Check the power and the circuit breaker in the meter cupboard.

Messages 01, 02 and 11 relate to extra components, such as a separate storage tank or pre-treatment. If you have these, your installer will explain them.

Not working? First contact your installer. If something is broken within the warranty, email info@h2ot.nl with your order number and a photo. You will hear from us within 4 working days.

9. Safety

- Leave installation, cleaning and electrical work to a qualified installer.
- Turn the rotary knob to OFF and switch off the power before cleaning or inspecting anything. Do not open the control cabinet yourself.
- Make sure the water and pipes are depressurised before disconnecting anything.
- Never let the pumps run dry.
- Wear gloves and safety glasses when working with antiscalant or cleaning agent. Keep it out of the reach of children and follow the instructions on the packaging.
- Protect the Complete station against frost, sun and rain.
- Follow the water, electrical and drainage regulations that apply where you are.

10. Warranty and disclaimer

Warranty. Your Complete station comes with a **2-year warranty** on the main components. Filter cartridges, membranes, the UV lamp and antiscalant are consumables and are not covered. If the product does not work when connected and you report this within 24 hours of installation, we will replace it free of charge, provided it was installed within 3 months of delivery. The installer's costs are your own. Is something broken within the warranty? Email info@h2ot.nl with your order number and a photo; you will hear from us within 4 working days.

Sealed. Membranes and cartridges are supplied factory-sealed. Once the seal is broken, we cannot take them back for hygiene reasons.

No medical advice. This guide is a user manual and not medical advice. Our products are not medicines or medical devices and are not intended to diagnose, treat, cure or prevent any disease. If you have questions about your health, please contact your doctor.

What a filter does. How much a system removes depends on the composition of your water, the flow rate and proper maintenance.

Liability. To the extent permitted by law, H2Ot is not liable for damage caused by incorrect installation, use that deviates from this guide, or failure to replace consumables in time. Your statutory consumer rights always apply. Please also read our general terms and conditions at h2ot.nl.

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