

Automatic Pool Water Care system

# ASIN Aqua PROFI

User's Manual



# General safety information



This user manual has basic information that should be observed during assembly, start-up, operation, and maintenance. Therefore, this user manual must be read by installers and operators prior to assembly and start-up, and must be accessible to every user of this unit. Additionally, all further safety information in this document absolutely must be observed. Read and follow all instructions. In order to minimise the danger of injury, do not allow children to use this product.

## Hazards from non-compliance with safety information.

Non-compliance with safety information can result in hazards to persons, the environment, and the equipment. Non-compliance with safety information will result in a forfeit of any potential right to damage compensation.

## Insufficient personnel qualification

Hazards in the event of insufficiently qualified personnel, potential consequence: gravest degree of injury, heavy material damage.

- The system operator must ensure compliance with the required qualification level.
- Any and all work may only be performed by correspondingly qualified personnel.
- Access to the system must be prevented for insufficiently qualified persons, e.g. via access codes and passwords.

## Potential overdosing of chemical agents

Despite ASIN Aqua® comprehensive safety functions, it is possible that a sensor failure and other errors could lead to an overdosing of chemical agents.

Potential consequence: Death or the gravest degree of injury, heavy material damage.

- Design your installation such that uncontrolled dosage is not possible in the event of a sensor failure or other errors, and/or such that uncontrolled dosage is recognised and halted before damage is incurred.
- Uncontrolled overdose of chemicals can cause harm to health and property. Even though the device contains a number of security elements can not be ruled out that in case of failure of the measuring probes, or the whole device may result in overdose of chemical agents. Install the equipment so that uncontrolled overdose of chemicals was not possible and that uncontrolled overdose has been detected in time before causing any harm. It is necessary to use chemicals in such quantities that an overdose will not cause dangerous concentration of chemical agents. Do not use chemicals in too large packages or with too high concentration.

## **Gaseous chlorine produced from dosing in standing water if dosing outputs are not locked via the filter pump**

If the flow switch is stuck or experiences another error, there is a risk of dosing into standing water. Poisonous chlorine gas can be yielded when sodium hypochlorite and pH minus come together. Potential consequence: Death or the gravest degree of injury, heavy material damage.

## **Non-compliance with informational text**

There is a great deal of informational text indicating hazards and their avoidance. Not observing informational text may lead to hazards. Potential consequence: Death or the gravest degree of injury, heavy material damage.

- Read all informational text carefully.
- Cancel the process if you are unable to exclude all potential hazards.

## **Use of new functions**

Because of the continued development, a ASIN Aqua® unit may contain functions, which are not completely described in this version of the user manual. The use of such new or extended functions without a profound and secure understanding by the operator may result in malfunctions and severe problems. Potential consequence: Death or the gravest degree of injury, heavy material damage.

- Make sure to get a profound and secure understanding of a function and relevant boundary conditions, before you start to use it.
- 
- Check for an updated version of the user manual or additional documentation available for the relevant functions.
- Make use of the integrated help function of the ASIN Aqua® to get detailed information on functions and their parameter settings.
- In case it should not be possible to get a profound and secure understanding of a function based on the available documentation, do not use this function.

## **Overdosing if pH value is wrong**

If disinfection is enabled before the pH value is stable in the ideal range of 7.0 to 7.4, then it may lead to heavy overdosing of chlorine. Potential consequence: Death or the gravest degree of injury, heavy material damage.

- Do not start disinfection with chlorine or until the pH value is stable in the ideal range between 7.0 and 7.4.

## Conditions before using

Make sure you have a newest and updated version of the user manual and other documentation for all functions of the unit. Use and read the integrated help features. In case of not understanding the information about certain features of the unit, do not use these features.

Install your ASIN Aqua indoor away from dust and high humidity and make sure all electrical connections are secure. Do not open your ASIN Aqua or exchange any of the internal parts. This will damage the electrical integrity of ASIN Aqua.

## Handling chemicals for pool water treatment.

The chemicals used with the ASIN Aqua must be handled in a safe manner to prevent damage or personal harm. Aseko recommends you always use personal protective safety equipment when handling the pH and chlorine agents. Refer to the Materials Safety Data Sheet (MSDS).

### **WARNING:**

**Never mix the pH agent with the chlorine agent. When carrying out maintenance on the clear plastic tubes or valves always rinse with clean water to prevent mixing of the pH and chlorine agents.**

All chemicals used for the water treatment are very aggressive. At the manipulation with them obey the safety guidelines in MSDS for particular agents.



ASIN Aqua PROFI is our top-of-the-line device for professional use which automatically measures and controls your pool. ASIN Aqua PROFI Measure and control pH, free and total chlorine, REDOX potential, temperature, water level. ASIN Aqua PROFI is a compact device consisting of the control unit, measuring probes and terminal box for connection of all externals.

## MAIN FUNCTIONS

### Disinfection

ASIN Aqua PROFI enables to control one of the following disinfection processes:

- Dosage of the hypochlorite solution
- Control of the salt water electrolysis
- Dosage of gaseous chlorine

Aseko's own amperometric membrane CLF probe is used for measuring of chlorine content. The disinfection control works on the measuring of the difference between the required and real value of free chlorine concentration. With considerations of pool volume, performance of dosing pumps and concentration of disinfection agent ASIN Aqua PROFI calculate precise amount of disinfection and correct dosing time.

### pH

ASIN Aqua PROFI is able to dose both, pH+ and pH- agents:

- pH reduction (dosing of acid)
- pH increase (dosing of alkali)

### Flocculant / Algicide

ASIN Aqua PROFI enables flocculant or algicide dose in the range from 0,0 to 99,9 ml/hour.

### Filtration time

ASIN Aqua PROFI can switch filtration pump in two intervals.

### Water temperature

Temperature is controlled by switching on and off the heat source (electric heating, gas boiler etc.). The temperature control take precedence over the time control. The temperature control works with the accuracy of 0.1°C.

### Water level

Water level is measured by submersible level transmitter. ASIN Aqua PROFI can control four water levels. Level to high, Level OK (where filling stops), Filling level (where filling starts), Level to low.

### Filter backwash

The system can control the filter backwashing time interval (this requires an optional Besgo valve for automatic backwashing).

### Aseko Web Services

App iPool LIVE and [ipool.aseko.com](http://ipool.aseko.com) connection to the internet can take advantage of our mobile app iPool live or our web page [ipool.aseko.com](http://ipool.aseko.com) for monitoring of your pool on your mobile device anywhere you are.



### Technical description

Power supply	230 V, 50 Hz
Power demand	35 VA
Fuse	T32 mA T80 mA
Overvoltage category	II
Ingress protection	IP50
Operating temperature	5 - 40°C
Weight	5500 g
Measured values	free and total chlorine, redox, pH, temperature, level
Controlled values	free chlorine, pH, temperature, level
Output	Display, RS485
Relay output contacts	max. 230 / 1A

### What do you receive in your box:

ASIN Aqua PROFI	1 pc
Water flow control	1 pc
Free chlorine probe	1 pc
pH probe	1 pc
Redox probe	1 pc

You can also order a total chlorine probe and other accessories as fittings, dosing valves etc.



## Installation

The installation and first start should be performed by a trained technician.

- First the probes must be installed to the device. Screw in install the probes to the probe housing and then connect appropriate cable to each probe. All tighten only by hand, without pliers or spanners.
- Connect flowmeter to the clear-plastic tube (without closing valve).



Next step:

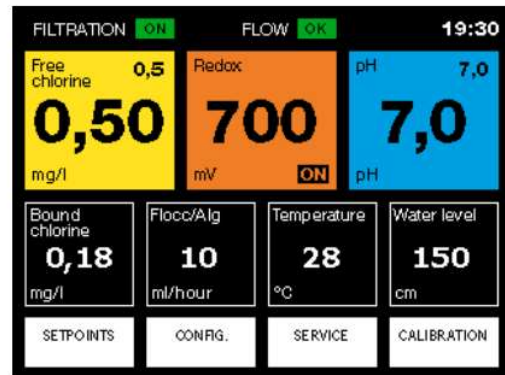
- connect the device according to the piping scheme (fig. 1)
- If you want to control filtration pump by ASIN Aqua PROFI make the electric connection by the diagram fig. 2, 3 and 4. Otherwise connect the power supply.
- The free chlorine probe is very sensitive to the pressure changes in the pipe system. The pressure may never exceed 0.5 bar. Underpressure causes destruction of the membrane!! It is recommended to drain the water from probes to buffer tank, scimmer or outlet.

## First start

1, At first start pool should contain clean new water without any chemicals. All valves must be open, water must flow to the probes.

Test measuring the pH, value of pH in the pool water should be in the range 6.8 – 7.2. If its not, adjust it by addition of a proper chemical agent and let the water mix well.

2, Manually dose the Superchlor agent in amount of 5g/m<sup>3</sup> into the pool. The concentrated Superchlor solution should never get to the probes!! Superchlor must be manually dose into the pool as far as possible from the skimmer or any other intake to the filtration plant.



When you switch on the ASIN Aqua PROFI with the main switch on the front side. You will see main screen. Measured values are displayed together with some other parameters. The mark “house” in the upper row indicates the flow to the probes. When flow of water to the probes is **OK**, the “house” is blue, otherwise it is red. The red exclamation mark indicates errors. Blue mark indicates filtration plant function.

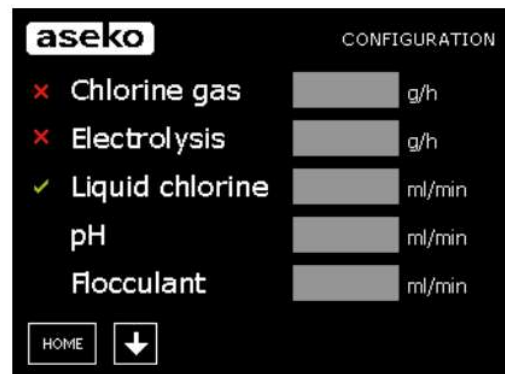
At the home screen are displayed two values separated by arrow. The current-value one on the left and the setup-value one on the right. When ASIN Aqua PROFI operating white arrows changes color into green. The red color of the currently regulated value indicates error.

Press the button

## CONFIG.

Choose used chlorination method by pressing on **X** which changes to **✓**.

In the options **Liquid chlorine**, **pH** and **Flocculant** select the performance of the pumps (60 ml/min as default). At **Electrolysis** select the performance of the electrolyser, at **Gaseous chlorine** the actual dosed amount. Next enter the pool volume. Finally by pressing the **Home** button you return to the opening window and press the button



## Automatic Filter back wash

The automatic back wash function ensures the filter back wash on a regular basis in the preselected intervals.

To enable this function, it is necessary to use the automatic 5-way valve. Its moving is enabled by the relay No. 25 switching on.



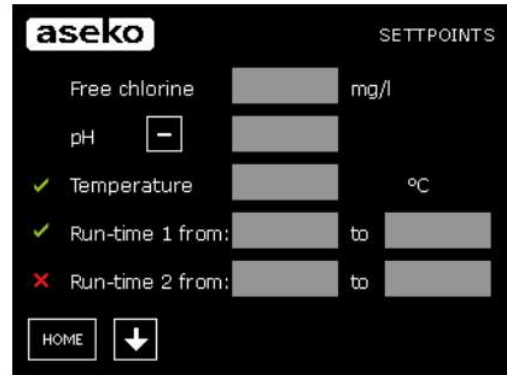


## SETPOINTS

Here enter 0 at **Chlorine** and 7.0 at **pH**, select the required **Temperature** and non-stop operation of the filtration plant (e.g. **Time 1** from 00:00 to 24:00).

In the second window **Level 0** the buffer tank is empty, filling pump shuts down. **Level ON** is the level when the water filling should start. **Level OFF** is the level when the water filling should stop. **Level over** is the warning value.

Parameters that you want to control should be marked by ✓ and in the gray field, fill in the required value and confirm it by pressing **OK**. Finally enter the required dose of the flocculant and return by **Home** button.



**aseko** SETPOINTS

Free chlorine  mg/l

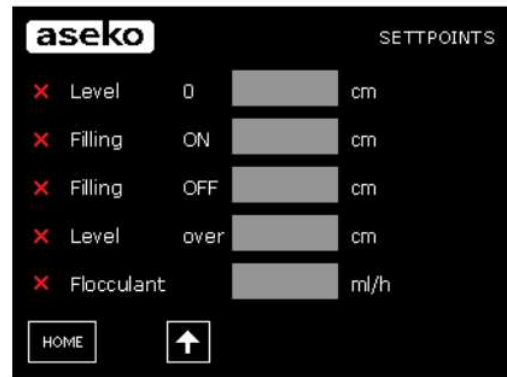
pH  -

✓ Temperature  °C

✓ Run-time 1 from:  to

✗ Run-time 2 from:  to

HOME



**aseko** SETPOINTS

✗ Level 0  cm

✗ Filling ON  cm

✗ Filling OFF  cm

✗ Level over  cm

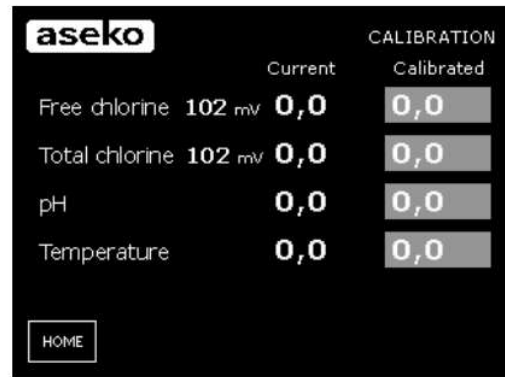
✗ Flocculant  ml/h

HOME

Now In the home screen you see values that are controlled. Next is important to leave pool system work for 24 hours. Afterwards start the calibration of the probes. Press the button

## CALIBRATION

to enter the calibration menu. In the column **CURRENT** you see actual measured values and to the column **CALIBRATED** enter hand measured values. Press **OK** to finish calibration. In most cases it is not necessary to calibrate the pH probe. But if you really want to calibrate the pH probe remove the probe from the housing, dip it into the buffer solution with the exact pH value and correct the measured value. In case the pH value is between 6.8 and 7.5, you can proceed to the calibration of free chlorine. Manually measure the free chlorine concentration and if it is over the required value, make the correction. If the measured concentration is lower, add exact dose of Superchlor, let water to mix well and repeat the procedure.



The system allows the setting of pH in the range 6.4 – 7.2, water temperature 0 – 45°C, free chlorine concentration 0 – 1.5 mg/l and flocculant dose up to 99 ml/m<sup>3</sup>/24 hrs.

## SERVICE

is used for some other system settings.

**Max. Chlorine/hr** - limits the amount of the disinfection dosed per hour.

**Delay time** - is the time between doses in which ASIN Aqua PROFi does not regulate. The recommended time is 4 – 6 minutes.

**Max. time of filling** - will limit the time for which the water supply will run.

**Into pH and Cl concentration** insert the concentrations featured on the labels of chemicals.

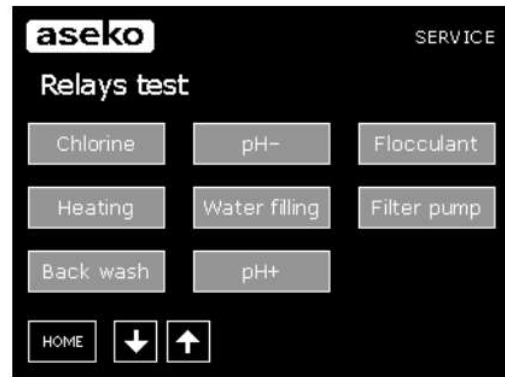
**Flowmeter** - select if the system is equipped with the Flowmeter.

**Date and time** - serves for setting the actual time and date.

**Demo** - mode for use in showrooms.



Menu **SERVICE** is used to check the system.  
By pressing particular items you can activate the relays.



## ASIN Aqua PROFI error messaging

### The agent has run out.

- Check the chlorine and pH agents regularly so that they do not run out. Chlorine agent concentration is 15-20%. This degrades over time and if exposed to direct sunlight.

### The dosing pump does not work.

- Check that your dosing pumps are securely fitted and not loose.
- Check the connections to your dosing pumps are secure and not leaking.
- Check the clear plastic tubes inside the dosing pumps are not damaged or broken.
- To remove your dosing pumps from your ASIN Aqua, disconnect the clear plastic tubes, turn your dosing pump anti clockwise and pull away from your ASIN Aqua.

### The dosing valve is not working.

- Check your dosing valves regularly for the build up of limescale.
- Make sure dust and dirt does not get into the containers of the chlorine and pH agent to avoid blockages and damage to the valves.
- Check the rubber seals of your valves regularly to prevent leaking.

### Water does not flow to the probes.

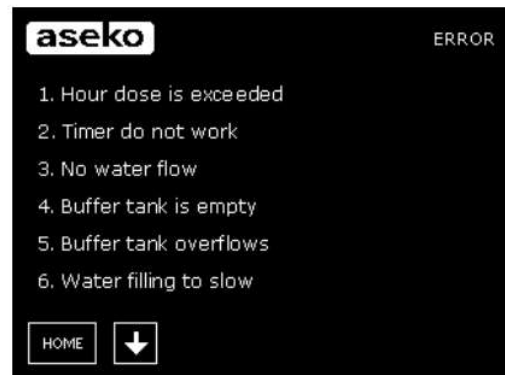
- Check the clear plastic tubes connection to your ASIN Aqua Redox for damage and leaks.
- Check the connection of the clear plastic tubes to the valves for damage and leaks.
- Check the valves are properly connected to the water supply and that they are not damaged, blocked or in the closed position.

### The probe does not work.

- Replace the pH probe each year.
- Ensure your probes are clean and free from dirt.
- Exposure to below 0° C conditions damages the probes.
- Regular cleaning of the probes maintains system accuracy.

### pH and Chlorine display ERROR messages

- Press the red ERROR box to see the faults.
- Ensure the chlorine pump is connected to the chlorine agent and pH pump to pH agent.



## Operation

For best possible results with ASIN Aqua PROFI it is necessary to let it operate at least 8 hours a day. The operation with frequent interruptions disables the exact measuring of the chlorine content. In the automatic mode the pool system is controlled according to your SETPOINTS. In this mode during the dosing of chemical agents the filtration plant must be in operation. If the filtration plant is controlled by the ASIN Aqua PROFI, this is ensured automatically.

### It is prohibited:

- to dose any chemical agents directly into the scimmer (they would destroy the probes).
- to dose any agents for lowering the chlorine content
- to dose any agents based on the oxygen disinfection
- to use common detergents for cleaning the pool

### WARNING:

The correct function of the system can be affected by the use of low quality agents. Strictly prohibited to use the organic chlorine agents.



**Maintaining ASIN Aqua PROFI**

The ASIN Aqua requires regular visual inspection and maintenance to ensure optimal performance. The table below gives a list of areas to be regularly checked and recommendations for replacement time.

**Dosing valves of the chlorine disinfection:** Check your valves regularly for blockages, damaged rubber seals and the build up of limescale. Check the clear plastic tube for any damages.

**Spare part list**

# 12005 Injection valve



# 13087 Replacement tube for injection valve



# 12071 CLF electrolyte



# 12029 CLF membrane



# 12065 Buffer pH 7,00



# 12052 CLF probe



# 12015 Redox probe



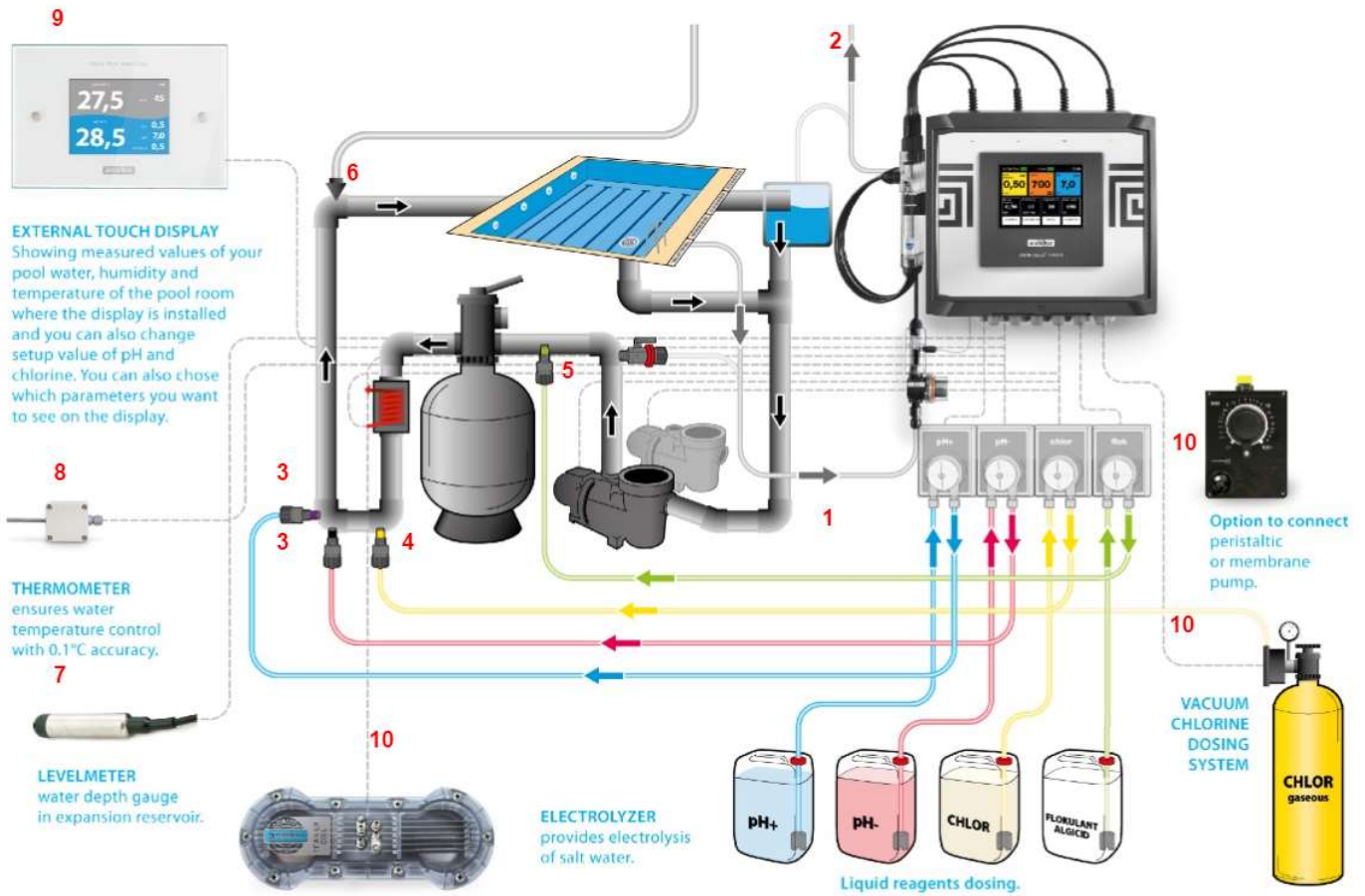
# 12014 pH probe



Item	Maintenance Procedure	Recommendation
pH and Chlorine Dosing Valves	<p>Check your valves regularly for blockages, damaged rubber seals and the build up of limescale.</p> <p>Check for damage to the clear plastic tubes. In case of very hard water, swop the clear plastic tube connecting the pH and chlorine to the valves every 2 weeks. This prevents the build up of limescale.</p> <p>WARNING: Mixing the pH and chlorine agents is extremely dangerous. Always wear personal protective safety equipment, gloves glasses and mask. After disconnecting tubes rinse in clean water before reconnecting.</p>	<p>Change your injection valves every 2 years for private pool use or every 1 year for public pools. # 12005</p>
Chlorine and pH Agent	<p>Regularly check the level.</p>	<p>Chlorine agent decomposes with time. Replace every 6 months</p>
PH and Chlorine Pumps	<p>Check inside the pumps for damage. The clear plastic tubes wear out during operation.</p>	<p>Replace tubes every 12 months. # 12073</p>
CLF Probe	<p>Remove your CLF probe from your ASIN Aqua and clean off any dust and debris. Clean your probe with fresh water and wipe with a clean soft material. Check the sensitivity in mV in CALIBRATION MENU. If this is at 0,5 mg/l under 10 mV change the electrolyte or membrane module.</p>	<p>Change the electrolyte every 6 months. # 12071 Change the membrane module every 1 years. # 12029</p>
Redox Probe	<p>Remove your Redox probe from your ASIN Aqua and clean off any dust and debris. Clean your probe with fresh water and wipe with a clean soft material.</p>	<p>Change your Redox probe every 1 – 2 years. # 12015</p>
pH Probe	<p>Remove your pH probe from your ASIN Aqua and clean off any dust and debris. Clean your probe with fresh water and wipe with a clean soft material.</p>	<p>Change the pH probes every 1 – 2 years. # 12014</p>



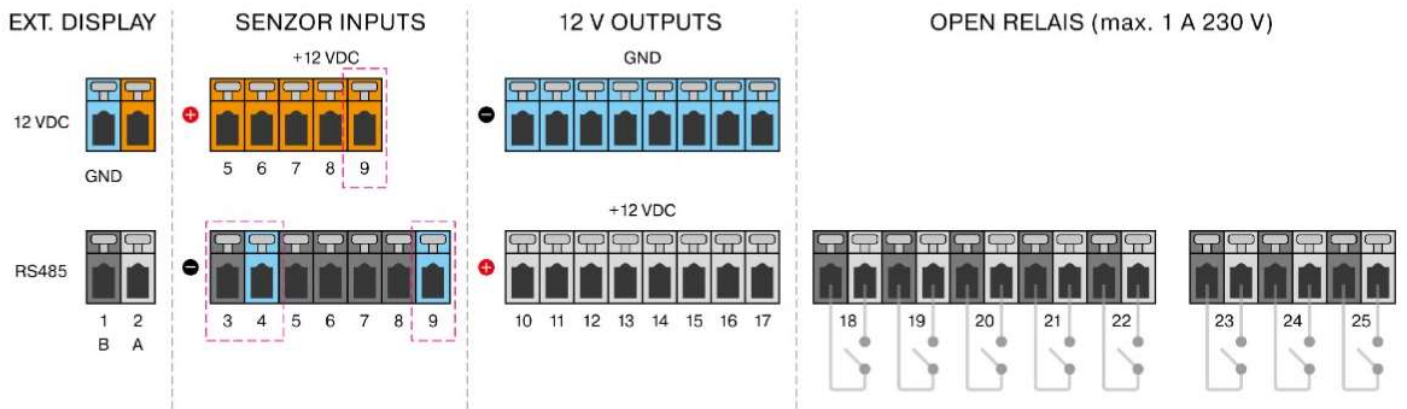
Fig. 1. Connection



- |                                     |                                       |                                 |
|-------------------------------------|---------------------------------------|---------------------------------|
| <b>1</b> Water intake to the probes | <b>6</b> Automatic pool water filling | <b>10</b> Membrane pumps        |
| <b>2</b> Water output               | <b>7</b> Level meter                  | Alternatively:                  |
| <b>3</b> pH liquid injection        | <b>8</b> Thermometer                  | • Peristaltic pumps             |
| <b>4</b> Disinfection injection     | <b>9</b> External display             | • Vacuum chlorine dosing system |
| <b>5</b> Flocculant injection       |                                       | • Electrolysis                  |



Fig. 2. The terminal box



### Inputs

- 3 Pulse flowmeter
- 4 GND
- 5 Thermometer
- 6 Flowmeter
- 7 Level meter
- 8 — — —
- 9 GND
- 9 +12 V

### Outputs 12 V

- 10 pH- pump
- 11 Disinfection pump
- 12 Flocculant pump
- 13 pH+ pump
- 14 Filtration pump
- 15 Heating
- 16 Water filling solenoid
- 17 Backwash valve

### Open relais (max. 1 A 230 V)

- 18 pH- pump
- 19 Disinfection pump
- 20 Flocculant pump
- 21 pH+ pump
- 22 Filtration pump
- 23 Heating
- 24 Water filling solenoid
- 25 Backwash valve