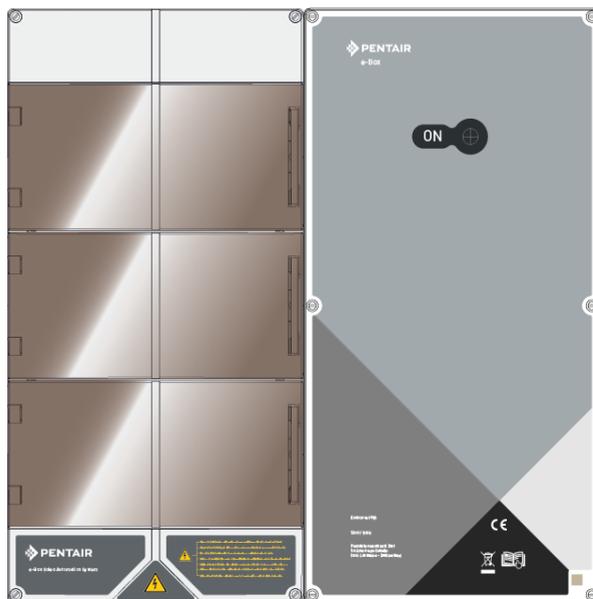


# Version E-Box SOLEO Connect



## IMPORTANT SAFETY INSTRUCTIONS

Read and follow all the instructions

Keep these instructions

[WWW.PENTAIRPOOLEUROPE.COM](http://WWW.PENTAIRPOOLEUROPE.COM)

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# 1 General

## 1.1 Scope of this document

This document contains the information necessary for proper use of the product. It informs the user in order to guarantee the proper execution of the installation, use and maintenance procedures.

The content of this document is based on information available at the time of publication.

The original version of this document was written in French.

For reasons of safety and environmental protection, the safety instructions contained in this document must be strictly adhered to.

This document is provided for reference only and does not include all possible installation situations. The person responsible for installing this equipment must have:

- Followed adequate training for the installation of swimming pools.
- A good knowledge of the pool equipment as well as their settings.

This document is available in other languages on the page [www.pentairpooleurope.com](http://www.pentairpooleurope.com)

## 1.2 Version Management

Review	Date	Authors	Description
A	12.05.2023	STF/YML	First edition.

## 1.3 Manufacturer identification (ID), product

Manufacturer: Pentair International LLC  
 Avenue de Sevelin 20  
 1004 Lausanne  
 Suisse

Product: SOLEO Connect

## 1.4 Technical assistance procedure

Procedure to follow for any request for technical assistance:

1. Collect the information that is necessary for a technical assistance request.
  - ⇒ Product identification (see Series label locations [→Page 8]).
  - ⇒ Description of the problem that the device has.
2. Contact your supplier.

## 1.5 Copyright and Trademarks

All trademarks and logos Pentair are the property of Pentair. The brands, trademarks and logos of third parties are the property of their respective owners.

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## 1.6 Limitation of Liability

As part of the quality system Pentair, the products benefit, under certain conditions, from a manufacturer's guarantee, which the direct customers of Pentair can access. Users must contact the reseller of this product for the applicable conditions and in the event of a possible warranty claim.

With the exception of probes and consumables, the warranty is 2 years.

Any warranty provided by Pentair regarding the product will be annulled in the following cases:

- Installation carried out by a person not specialised in the installation of swimming pool;
- Non-compliant installation, programming, use, operation and/or maintenance causing any damage to the product;
- Non-compliant or unauthorised work on components;
- Incorrect, inappropriate or incorrect connection/assembly of systems or products in connection with this product and vice versa;
- Use of a lubricant, grease or chemical of any type not compatible with the product and not listed as compatible with the product by the manufacturer;
- Failure due to incorrect configuration and/or measurements.

Pentair declines all liability for equipment installed by the user contrary to the instructions given for the products Pentair, as well as for any production procedure or process, installed and connected around the installation, indeed related to this. All direct or indirect malfunction or failure and any damage caused by such equipment or process are also excluded from the guarantee. Pentair does not accept any liability for any loss or any prejudice as regards profits, revenue, usage, production or contracts, or for any indirect, special or consecutive loss or damage, whatever the nature may be.

## 1.7 Declaration of conformity

### Guidelines – Harmonised standards

Pentair International LLC - Avenue de Sevelin 20 - 1004 Lausanne - Suisse

We declare that the product meets the guidelines and take responsibility for it:

#### RED

- 2014/53/EU.

#### SAFETY

- EN 62368-1:2014;
- EN 62311: 2008.

#### EMC

- EN 301 489-1 V2.2.0;
- EN 301 489-3 V2.1.1;
- EN 55024: 2010 / A1: 2015.

#### RADIO

- EN 300 220-2 V3.1.1.

#### SOLEO CONNECT (+ PARTS)

- SB-PF-ENS-005E.

#### PART NUMBERS

- SB-SE-SOL-003C;
- SB-SE-TEC-003C;
- INTP-5220;
- INTP-5210;
- SB-PD-PRO-004B;
- INTP-HOLD-2.

#### Other normative documents

- 2002/95/EC (RoHS)
- 2002/96/EC (WEEE)



## 1.8 Pentair Scan Application

The mobile application Pentair Scan is an ideal tool for the daily work of the maintenance technician. The simple reading of the identification label present on the product, with a smart phone, gives instant access to all its information.

1. Download the Pentair Scan application from  or  on a smart phone.
2. Open the Pentair Scan application.
3. Scan the label affixed to the product.
4. Navigate through the information.

## 1.9 Home automation control application

The Intellipool is a necessary application for controlling your installation remotely. It is not limiting and can be installed on several media (phone and tablet) with the same identifiers.

The use of an internal connection via a computer is necessary to configure the E-Box.

It is free, no subscription necessary, you just need to:

1. Download the Pentair Home from  or  on a smart phone or a table (not supplied).
2. Open the Pentair Home application.
3. Fill in your Login and your password.
4. Navigate within the application to pair your devices and control your installation.

## 1.10 Website and notices additional to the installation

We advise you to read and download the instructions for the various equipment available on the website: [www.pentairpooleurope.com](http://www.pentairpooleurope.com)

Access is free, no subscription required.

As a professional a section is dedicated to you and you just have to register on this same site and make a request for access.

Download the documentation relating to the various products (Boxes SOLEO and SPEEEDO Connect, electrolyser, IntelliFlo filtration pump etc.).

## 2 Security

### 2.1 Definition of safety pictograms

#### DANGER



This combination of symbol and keyword indicates an imminently hazardous situation that will result in serious or fatal injury if not avoided.

#### WARNING



This combination of symbol and keyword indicates a potentially hazardous situation that can result in serious or fatal injury if not avoided.

#### CAUTION



This combination of symbol and keyword indicates a potentially hazardous situation that can result in minimal or minor injury if not avoided.

#### Caution - material



This combination of symbol and keyword indicates a potentially hazardous situation that can entail material damage if not avoided.

#### Prohibition



Mandatory advice to follow.

#### Mandatory



Applicable guideline, measure.

#### Info



Informative comment.

### 2.2 Series label locations

#### Mandatory



**Make sure that the serial and safety labels on the device are perfectly legible and clean!**  
If necessary, replace them with new labels to be placed in the same place.

## 2.3 Risks

All safety and protection instructions contained in this document must be followed in order to avoid injury, property damage or environmental, irremediable or temporary pollution.

Likewise, all other regulations and measures for accident prevention and environmental protection, as well as any recognised technical regulations relating to safe and appropriate working methods applicable in the country and at the place of use of the device must be complied with.

Any violation of safety and protection rules or any existing legal and technical regulations may result in irreparable or temporary injury, property damage or environmental pollution.

### 2.3.1 Personnel

#### DANGER



#### **Risk of electric shock or electrocution:**

Before working on the E-Box SOLEO Connect:

- Always turn off the power to the controller SOLEO and SPEEDED Connect to the circuit breaker before the maintenance. Failure to do so could result in death or serious injury to the technician, pool users or others due to electric shock.
- Please disconnect the connections before working on the SOLEO and SPEEDED Connect; the AC power can be supplied to the relay terminals close to other sources.

#### DANGER



#### **Chemical burn hazard!**

Be sure to shut off all pumps at the main circuit breakers on the home switchboard before drilling in any line. Properly fix all electrical, water and chemical lines. Consolidate feed pumps and chemical tanks in a safe and secure area.

#### WARNING



#### **Safety tips on the standard solution!**

The standard solution pH 4 is acidic. It must be kept away from children and securely close it to the right of the bottle. Store in a dry, ventilated place. Do not expose to frost.


**WARNING**

**Water temperatures above 37.7°C are a health hazard!**

Prolonged immersion in hot water can cause hyperthermia. Taking alcohol, drugs or medication is a factor aggravating the risk of hyperthermia in hot water baths and spas.

Hyperthermia occurs when the internal temperature of the body exceeds by several degrees the normal temperature of 37°C. Hyperthermia can produce the following effects:

- Inability to perceive imminent danger.
- Insensitivity to heat.
- Inability to perceive the need to leave the pool.
- Physical inability to leave the pool.
- Foetal injury in pregnant women.
- Syncope resulting in danger of drowning.


**CAUTION**

**Risk of injury due to improper handling!**

Only qualified personnel and duly trained professionals are authorised to carry out the required work, according to their training, experience, instructions received and their knowledge of the safety rules as well as the operations to be carried out.

**Prohibition**

**Do not allow children to operate this equipment!**

Risk of injury.

**Prohibition**

**Do not use this product to control an automatic pool shutter!**

Swimmers may find themselves trapped under the shutter.

**Mandatory**

**Strictly follow the safety and handling procedures of the acid manufacturers!**

Including protective measures for hands, body and eyes during transfer and handling of acid. Also observe the safety precautions prescribed for handling muriatic acid intended to control the pH of the water. Muriatic acid can cause serious bodily harm and damage to swimming pool equipment.

**Mandatory**

**Check the pH and disinfectant levels of the water before using the pool and make sure the water filtration device is not clogged!**

Use an independent pH and chlorine test kit very periodically to ensure that the pH and chlorine level meet safety requirements. PH, RedOx, or conductivity sensors that are degraded, discharged, or clogged by oils, lotions, or other contaminants are likely to return incorrect results in the system and induce improper chemical treatment of the water, thereby creating a hazard to people and equipment.

**Mandatory**


**This installation and operation guide contains important information about the installation, operation and safety of this product!**

This guide should be provided to the owner and / or operator of this product.

**2.3.2 Hardware**

**DANGER**


**Risk of electric shock or electrocution!**

Connect the E-Box SOLEO Connect to a differential circuit breaker.

Reminder: the power cables of the pool lights must not be routed to the pool by means of sheaths containing other electrical cables.

Refer to local standards for details.

**Mandatory**


**Comply with regulations!**

Most countries regulate the construction, installation and operation of public swimming pools, spas and residential pools. It is important to comply with these rules, many of which directly regulate the installation and use of this product. Check your building and local health codes for more information.

**Mandatory**


**When mixing acid and water, always add the acid to the water!**

Never add water to the acid. When adding a chemical to the pool, be sure to follow the manufacturer's instructions and be equipped with appropriate protective equipment.

**Mandatory**


**Observe special precautions when installing, servicing and operating acid supply pump systems!**

The acid is dangerous to handle and requires the application of appropriate special measures with regard to its containers, transport, filling, storage, distribution and handling procedures.

**Mandatory**


**Check the daily display SOLEO!**

Make sure that no alarm message is active.

**Mandatory**


**For all components other than remote controls, observe a distance of at least 1.5 m from the inner wall of the pool or spa!**

**Mandatory**


**Sufficient equipotential bonding (min. 4.5 mm<sup>2</sup>), according to local regulations, is mandatory on all metal components of the pool, including the pool pump!**

This is necessary for electrical safety, as well as to reduce the risk of corrosion.

**Prohibition**



**Do not mix sodium hypochlorite and muriatic acid (hydrochloric acid)!**  
**Do not mix out of water, chlorinated product and pH fix!**

**Info**



**Devices intended for any other use than use by a one person family, may require additional safety equipment to comply with local regulations!**

**Info**



**This product is exclusively intended for swimming pool applications.**

## 3 Description

### 3.1 Technical specifications

#### E-Box

Protection rating	IP44
System pre-wiring	SB-PF-ENS-005E
Operating voltage	230V
Input power supply frequency	50 Hz
Power	14 kW max
Number of inputs	-
Number of outputs	8x (230V/16A max) 4x (12V/16A max) 4x dry contacts 8A max

#### Soleo, Speedeo Connect

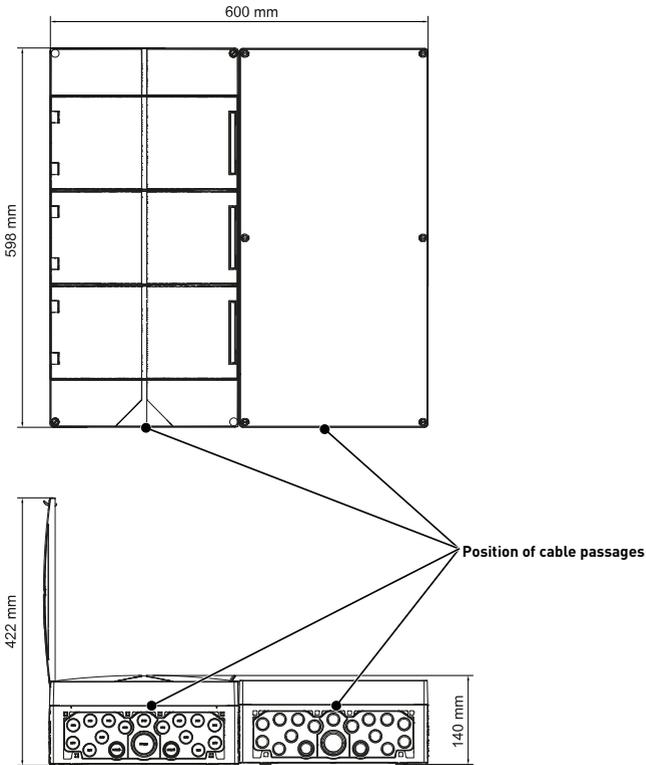
Product specifications	Model SB-PF-ENS-005E
Operating temperature	0° to 40°C
Operating humidity	40 % at 75°C
Maximum operating altitude	2000 m
Weight (excluding probes)	3.5 Kg
Soleo Consumption	16 W
Speedeo Connect Consumption	16 W
Soleo + Speedeo Connect (inner use)	IP 64
Internet Relay mains power supply specifications 230 V/DC Jack 5.5/2.1 mm (external negative)	VEL05US060-EU-JA
Input	100-240 V 50/60 Hz 0.18 A
Output	6.0 V 0.83 A max

#### Environmental conditions

- For inner use only;
- Temperature from 5°C to 40°C;
- Maximum relative humidity of 80 % for temperatures up to 31°C decreasing in a linear manner to 50 % relative humidity at 40°C;
- Mains power supply voltage variations of  $\pm 10$  % of the nominal voltage.

### 3.2 Congestion diagram

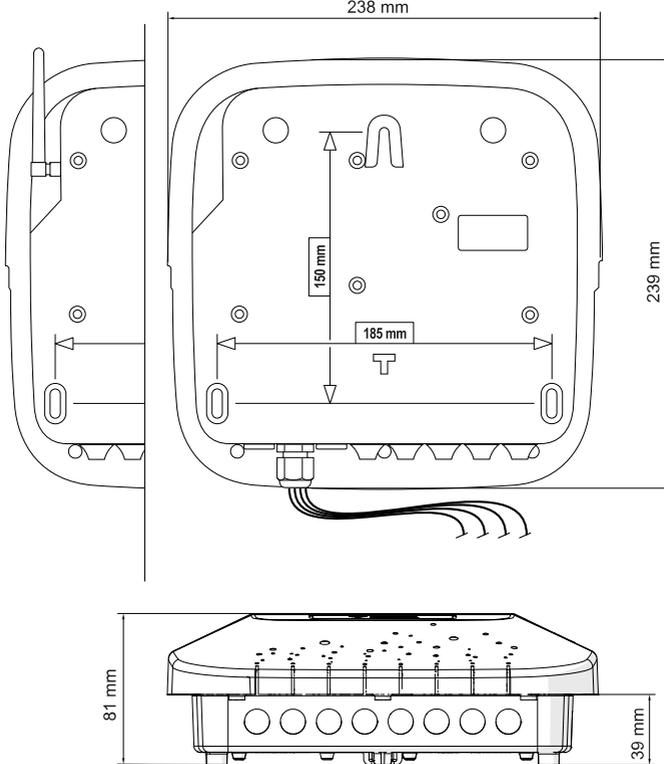
#### E-Box



**Speedeo Connect and Soleo (both boxes have the same measurements)**

**Speedeo Connect**

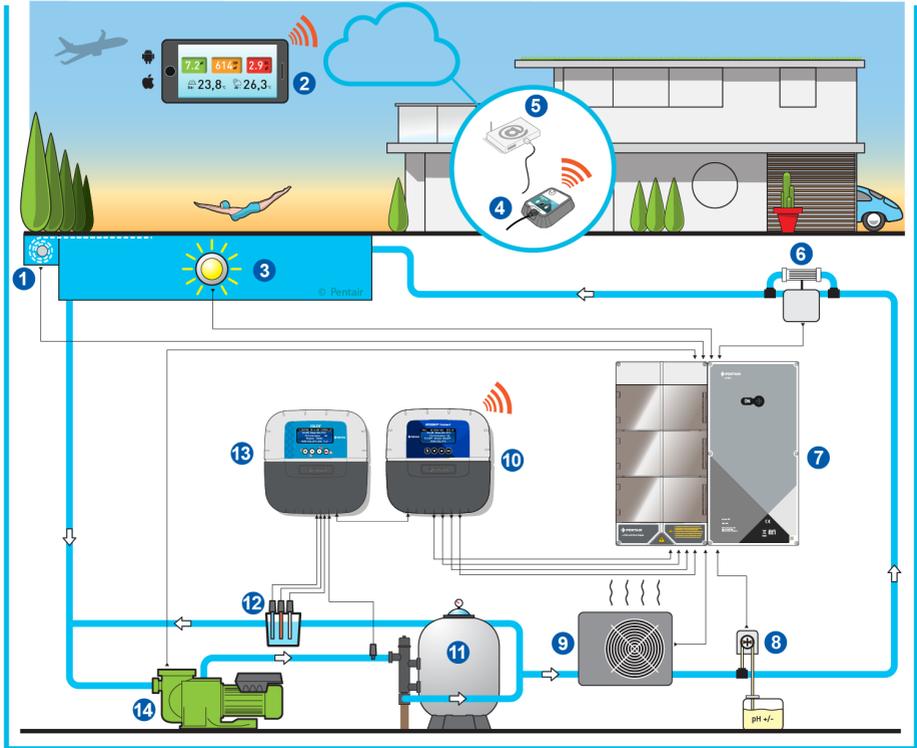
**Soleo**



### 3.3 Product Description

#### 3.3.1 General operation

The diagram below describes an example of a typical installation of a fully automated and remotely controlled swimming pool. Refer to the relevant item for more information about it.



- |                                   |                        |
|-----------------------------------|------------------------|
| 1 Roller shutter                  | 8 Peristaltic pump     |
| 2 Home automation swimming pool   | 9 Heating              |
| 3 Lighting                        | 10 Speedeo Connect     |
| 4 Internet Gateway Relay (option) | 11 Filter              |
| 5 User internet box               | 12 Probes (pH + RedOx) |
| 6 Electrolyser                    | 13 Soleo               |
| 7 E-Box                           | 14 Pump                |

### **3.3.2 The E-Box**

The E-Box is a turnkey system for quickly and simply making all the connections to the various pieces of equipment in the installation.

The connections between the boxes provided (E-Box and the boxes of the SOLEO Connect) are carried out through cables with quick connectors and thus facilitate operation with the possibility of remote control and information (subject to the connection of the installation to the internet through the WiFi network of the user's internet box, or if necessary with the addition of the Gateway box).

Your E-Box SOLEO Connect does not require any additional electrical components.

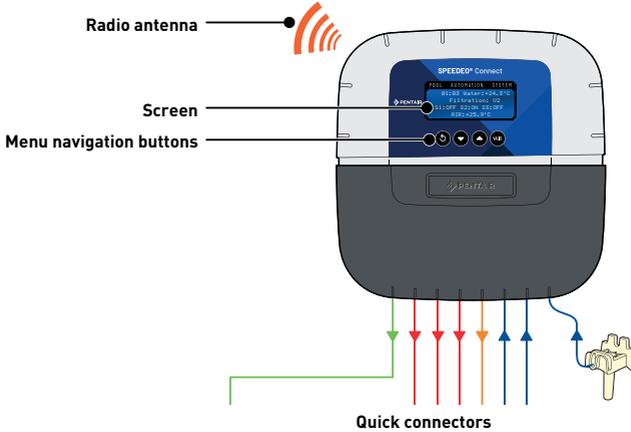
No intervention is necessary inside your E-Box except the connection to the terminal blocks, in order to carry out the connections of the various devices that constitute the installation.

### 3.3.3 The Speedeo Connect box

The SPEEDEO controls and automatically calculates the operating time of the equipment connected to the system, it is the controller of the installation.

It receives the orders transmitted by the remote control device or by the internet and communicates with the device concerned.

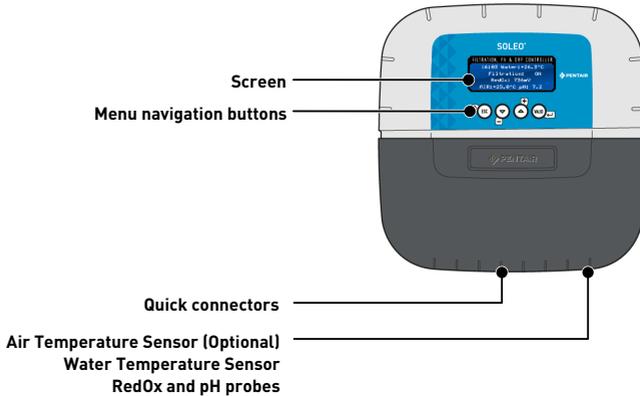
In addition, the activity can be consulted by the user and is stored in memory. It can be queried through the dedicated application (Pentair Home and/or Pentair Pro).



### 3.3.4 Soleo

The device is equipped with three probes that allow it to measure the properties and values of the water.

The information collected is then transmitted to the SPEEDEO Connect to refine the adjustment of the water regulation and allow the control of the various pieces of equipment of the swimming pool.



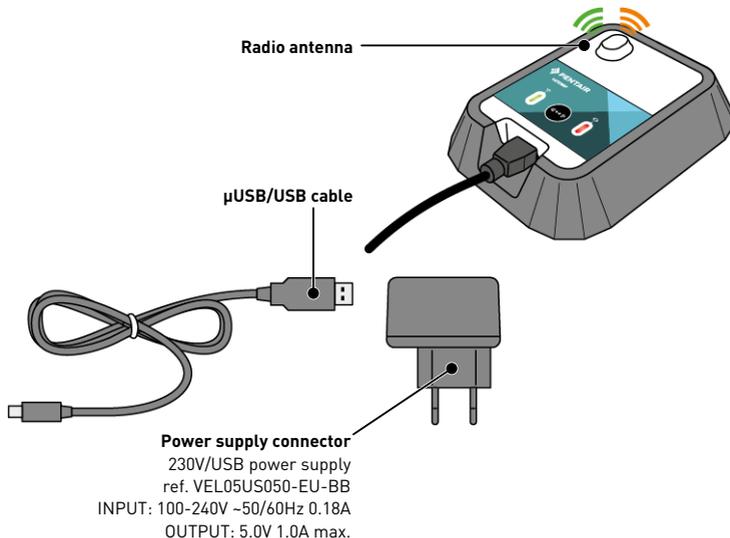
### 3.3.5 Internet Gateway Relay (Option)

The Gateway allows access to your data in real time and you can also intervene on settings and controls from a tablet or smart phone connected to the internet.

You must be connected to the internet through your box in order to be able to control and ask your installation questions.

To be functional, the Gateway must be connected to your internet "box".

It is necessary to download the Pentair Home or Pentair Pro to connect to the installation.



## 4 Installation

### 4.1 Warnings

#### CAUTION



#### **Risk of injury due to electric shock or pressurised elements!**

It is strictly forbidden for any unqualified personnel to access the internal components of the system in order to carry out any technical work whatsoever.

- Check that the power supply is switched off. Close the water inlet and relieve the system of pressure before opening the hood to access the internal components.

#### Mandatory



**The equipment is permanently connected.**

#### Mandatory



**The equipment must be installed by a qualified technician according to the local regulations in force.**

#### Info



**Each output has a normally open dry contact for a maximum voltage of 230 V.**

The manufacturer is not responsible for any personal injury or material damage resulting from improper use of the device or any use that is not in accordance with the following instructions.

In case of any doubt in this manual regarding installation, operation or maintenance, please contact the technical support of the company that installed the device.

The installation of the device must be carried out by a qualified technician in compliance with the standards and regulations in force, using tools compatible with the device for safe use. This same technician must also ensure the maintenance of the device.

In the event of a failure or malfunction, before performing any repair work on the device, ensure that the E-Box SOLEO Connect is disconnected from the power supply:

1. Be careful when unpacking and during subsequent handling, as the weight is likely to cause property and personal injury in the event of an accidental impact.
2. Before any electrical connection, earth the installation.
3. Ensure that the environment in which the appliances are installed does not reach temperatures that may cause the water to freeze, as the valve may be damaged.

## 4.2 Package contents

- 1 E-Box
- 4 cables for box connections to the E-Box
- 1 Intelliflo VSF pump control cable
- Cable glands set for installation of cables in the E-Box
- 1 SOLEO
- 1 SPEEDED Connect
- 3 Probes (pH, RedOx and temperature)
- 2 Chemical solutions for pH probe calibration (pH4 and pH7 solutions)
- 1 Analysis chamber with associated pipes and fasteners
- 1 Peristaltic pump 1.5 l/h for injection of liquid pH correction solution

### **Depending on the options chosen:**

- 1 Peristaltic pump 1.5 l/h for the injection of liquid chlorine or liquid peroxide, special swimming pool
- 1 Intellichlor salt electrolysis cell

## 4.3 Accessories provided depending on the options chosen

### 4.3.1 Analysis chamber



Supplied with the installation kit, it must be installed as close as possible to the Probe Unit box, and receives the measurement probes provided: RedOx, pH and conductivity.

This chamber contains a flow rate detector incorporated therein.

It is necessary during the installation of the analysis chamber, to comply with the direction in which the water in it is passing (see Installation of probes [[->Page 39](#)]).

Analysis chamber kit contents:

- 1 bowl for 3 probes with built-in flow sensor;
- 2 support clamps with a diameter of 50 mm;
- 3 m of 6/12<sup>th</sup> transparent tube;
- 2 DN.15 ¼ turn PVC valves with fittings for the hydraulic tube.

### 4.3.2 Pool water treatment liquid solution injection metering pump

The solution injection metering pump is supplied with the installation kit, it must be installed separately from the electrical box, integral with the wall of the technical room, in accordance with its instructions.

When installing the peristaltic dosing pump, it is necessary to respect the direction of pumping of the product therein and to respect a maximum product suction height of 1.5 m from the ground.

This equipment is designed to inject a water treatment product for swimming pools, in liquid form.

Metering Pump Kit Contents:

- 1 peristaltic pH pump, flow rate 1.5 l/h at 1.5 bar;
- required wall-mounting kit;
- 2 x 2 m injection tube;
- 1 injector with 1/2" adapter;
- 1 product suction strainer.



The connection of this equipment is done at the level of the box E-Box, as described in the section Connections [[→Page 30](#)].

### 4.3.3 Salt electrolysis cell for chlorine production 13 or 27 g/h (optional)



This equipment is intended for the production of chlorine from swimming pool water.

The salt electrolysis cell is provided as an option with the installation kit, it must be installed bypass or online (max accepted flow rate of 18 m<sup>3</sup>/h).

It works with 3.5 g of salt per liter of water.

It must be supplied with low voltage by the box E-Box.

The cell has a built-in control panel.

Refer to the manual for this equipment for installation, adjustments and maintenance.

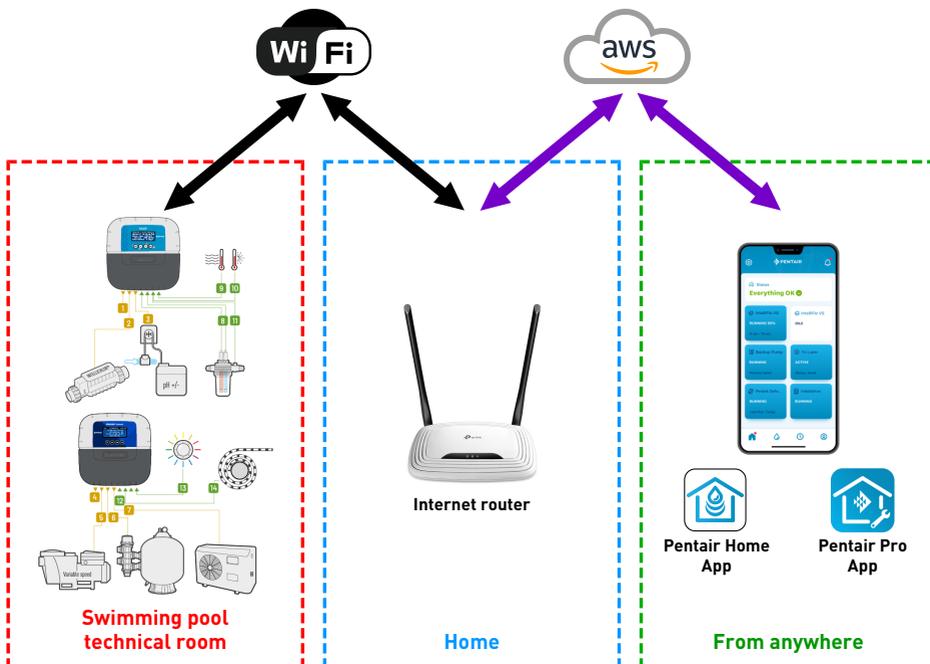
## 4.4 Principle of control through WiFi or LoRa radio

**Info**



Once electrically powered, go to the menu of the Speedeo Connect to establish the connection with the WiFi network of the house or the Gateway (see the manual of the Gateway in case of use of it).

The pairing between the two boxes will be automatic.

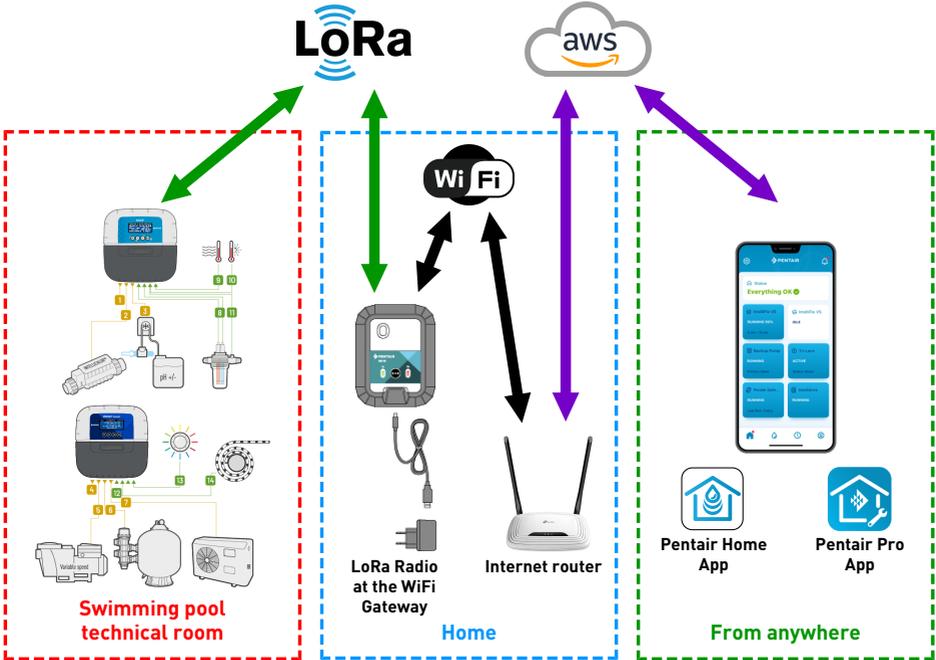


**Info**



**In the event of a connection problem with the technical room, the installation of a WiFi network extension module may also be used.**

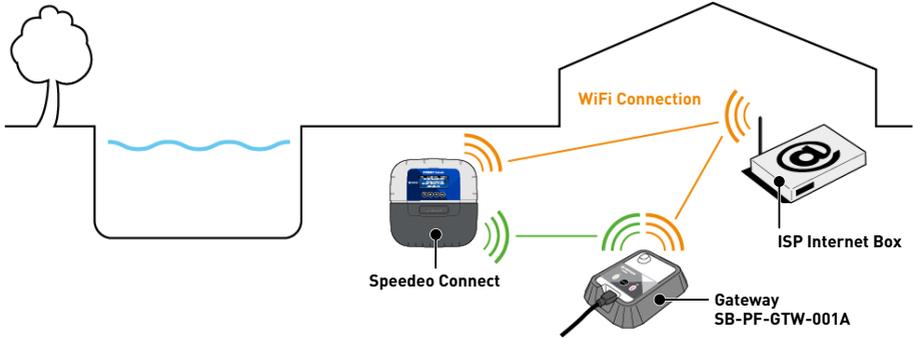
If WiFi is not present in the technical room, the addition of the Gateway box (optional) is then necessary in order to be able to connect the SOLEO and the SPEEDED Connect to the internet.



**Info**



The SPEEDEO Connect will connect, through the Cloud Connection menu, directly to your WiFi router (internet box).



**Info**



If the distance does not allow a stable direct WiFi connection, the addition of a Gateway SB-PF-GTW-001A is required.

1. Make the electrical connections according to your configuration and then start your Speedeo Connect.
2. Open the Pentair Home under your account. In the set-up menu of a new device, choose Speedeo Connect, on the next screen which asks you if you are using a Gateway to connect your SPEEDEO Connect to the WiFi, select "No, I am going to connect SPEEDEO directly to the WiFi".
3. Make sure your smart phone's Bluetooth is turned on. Follow the suggested steps. Your SPEEDEO Connect will be known as "PNRS1SPD00000xxxx". Select it.
4. Continue the continuation of the proposed menus by selecting your WiFi network and fill in the requested credentials and continue until you are connected "Connected". Now your SPEEDEO Connect is connected to your WiFi network.

## 4.5 E-Box

### 4.5.1 Wall mounting

#### Tools Required for Installation

You will need the following tools in order to perform the installation in the best possible conditions:

- Flat Screwdriver Set
- Drill Bit Set
- One tape measure
- One level

#### Caution - material

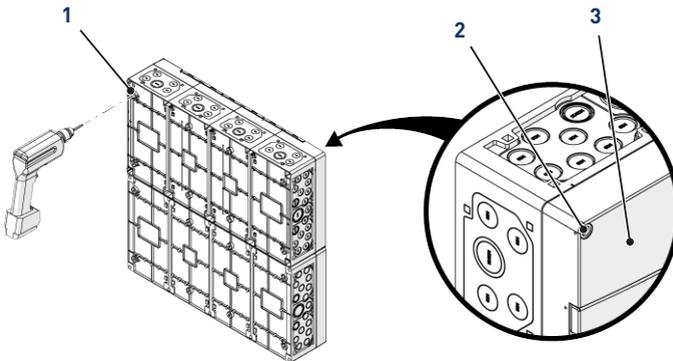


**The device must not be installed outdoors, preferring instead a technical room inaccessible to children.**

- Ensure that the bracket on which the appliance is installed can support a load of 10 kg.
- Use dowels suitable for the bracket on which the enclosure is to be installed.

✓ The casing should rest on a workbench.

1. Unscrew the twelve screws (2).
2. Remove the two covers (3).
3. Use a drill to make four holes (1).



#### Tip

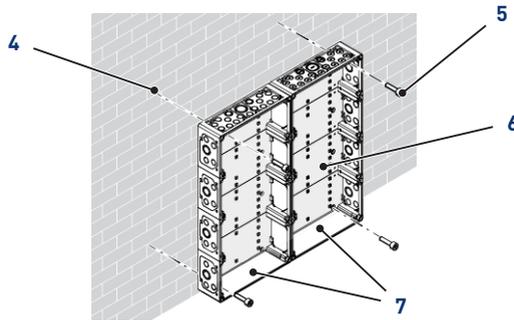


**It is advisable to drill the holes (1) of the four corners of the E-Box (6).**

**Otherwise, take into account the centre of gravity of the E-Box in order to determine the position of the holes.**

4. Mark the four holes (4) to be drilled in the wall.
5. Drill through the wall at the previously marked locations.

6. Insert one dowel into each hole.
7. Secure the E-Box (6) with four screws (5).



#### Info

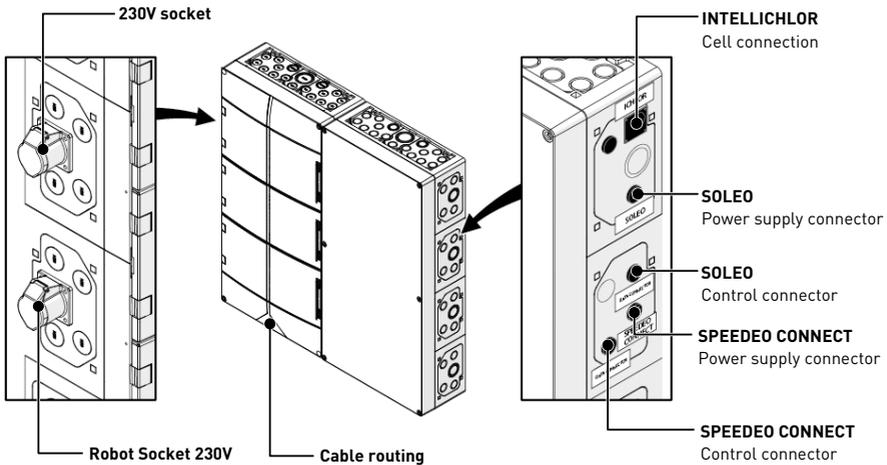
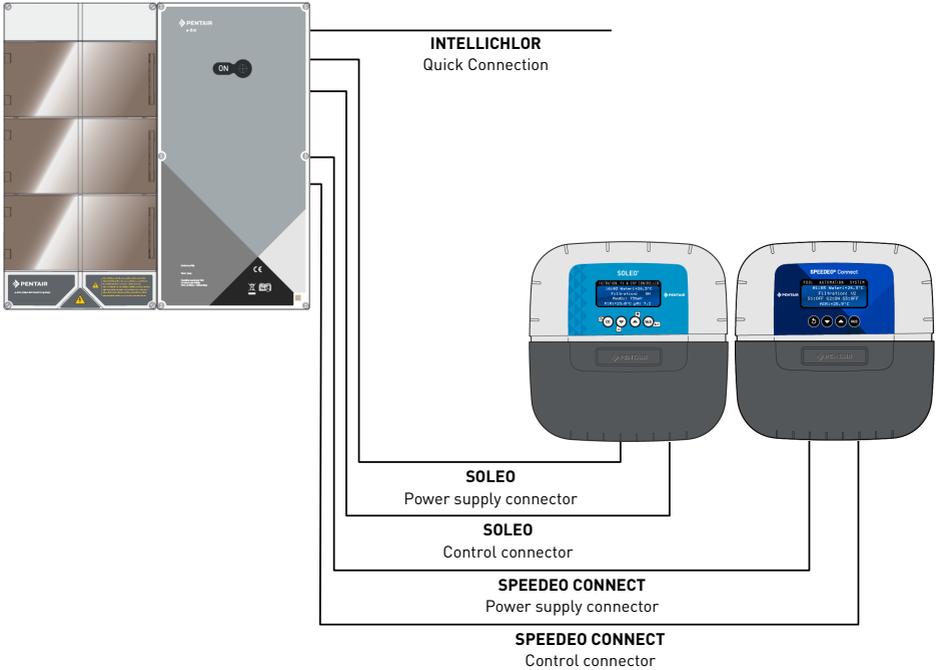


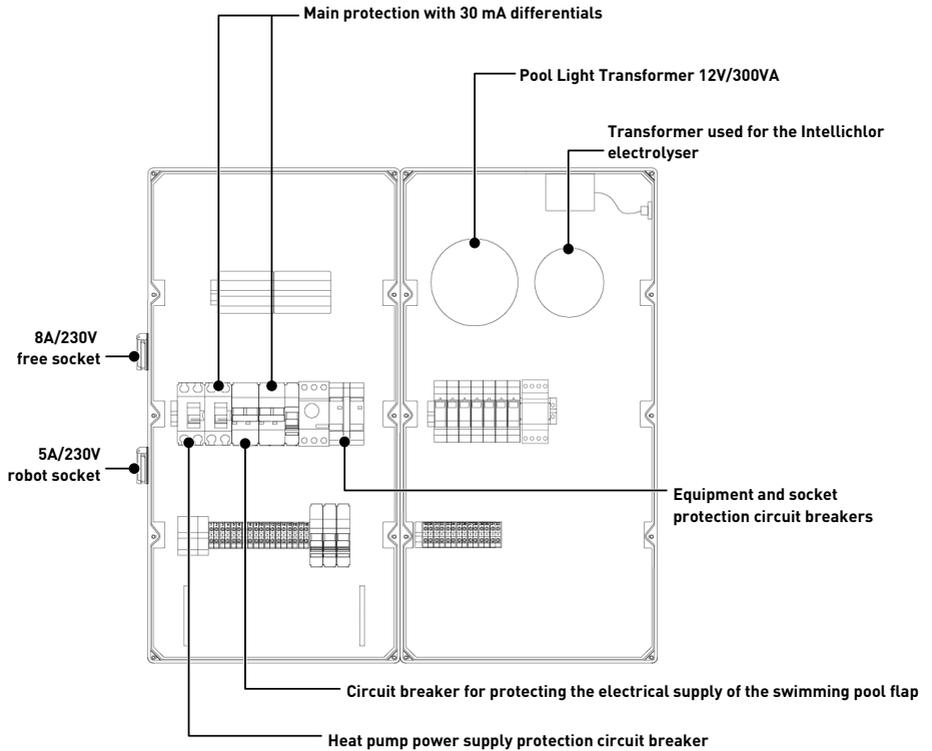
**The quick-connect cables are connected to the bottom of the E-Box (7).**

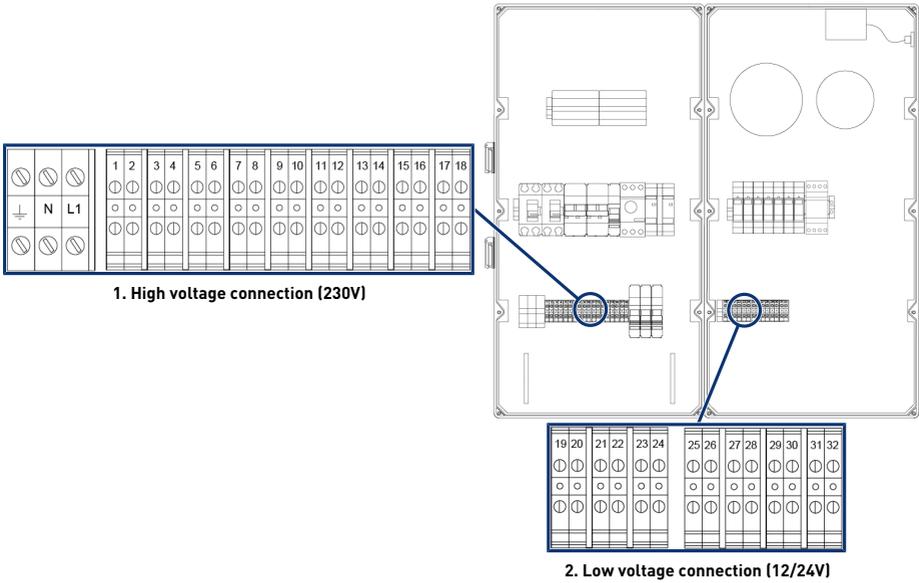
Install the cable ducts provided according to the diameter and number of cables used.

The cable ducts prevent moisture or acid vapour from entering the device. Never leave an empty hole unused without protection. See chapter Connections [→Page 30].

### 4.5.2 Connections







- 1 Terminal block 1: High voltage connection (230V) [→Page 33]
- 2 Terminal block 2: Low voltage connection (12-24 V) [→Page 34]

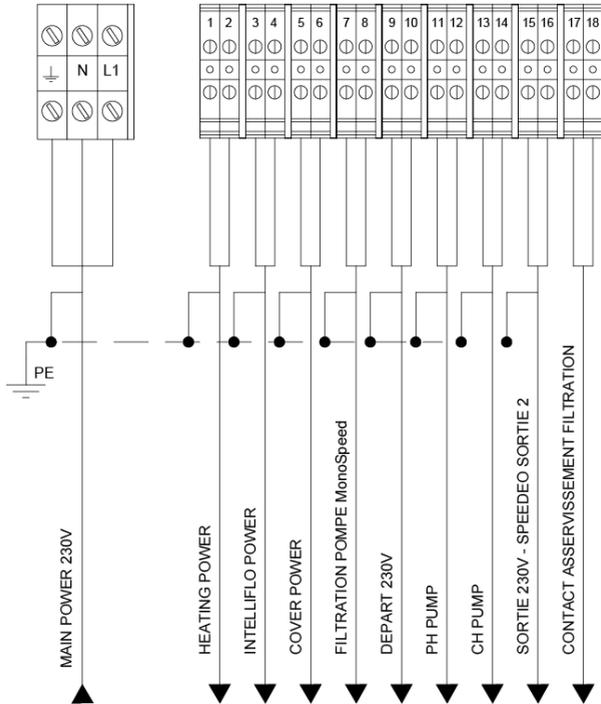
**230V minimum power compatible cables**



**Minimum dry contact compatible cables**



#### 4.5.2.1 Terminal block 1: High voltage connection (230V)

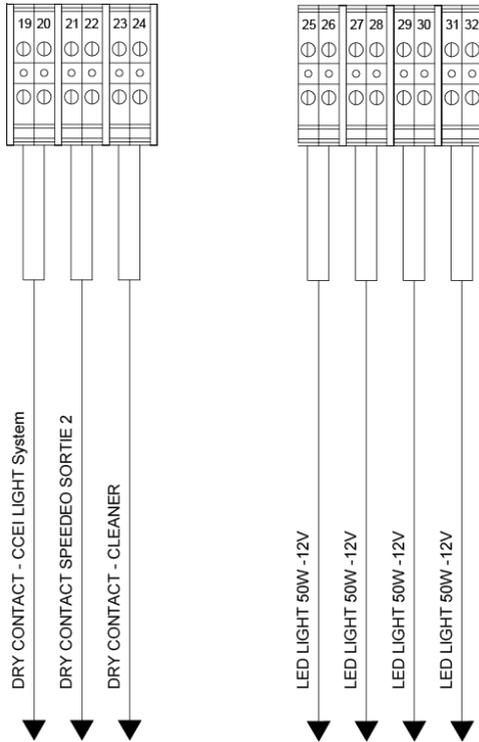


Positions and markings of the connection terminals:

- N-L1** E-Box Main Power Supply (230 V)
- 1-2** Connection of the heat pump power supply (230 V 20A)
- 3-4** Variable Speed Pump Supply Connection (230 V 15A)
- 5-6** Connecting the Pool Automatic Shutter Power Supply (230 V 16A)
- 7-8** Connecting the Single Speed Filter Pump Supply (4/6 3A)
- 9-10** Start (230V 8A) Robot or other. Allocatable Output 1 of SPEEDEO Connect
- 11-12** Connection of the metering pump power supply connection for pH control (230 V 1A)
- 13-14** Connection of the supply of the metering pump for chlorine regulation or of an electrolyser (230 V 2A)
- 15-16** Start (230V 6A) Assignable Output 2 of theSPEEDEO Connect
- 17-18** Dry contact subjected to the operation of the filtration function (max 5A)

In order to operate the outputs correctly, it is necessary to configure them through the SPEEDEO Connect, through the subject menus.

#### 4.5.2.2 Terminal block 2: Low voltage connection (12-24 V)



Positions and markings of the connection terminals:

- 19-20** Dry contact connection (max 8A) for the control of a light network (through Output 3 of the SPEEDEO Connect to be configured in the attributable menu).
- 21-22** Control of a dry contact through Output 2 of the SPEEDEOConnect (the same parameters as the output of Output 2, 6A Max)
- 23-24** Control of a dry contact for a robot blower through Output 2 of SPEEDEO Connect (the same parameters as the output of Output 2, 6A Max)
- 25-32** Connection of swimming pool projectors (12 V/50 W unit)

#### Prohibition



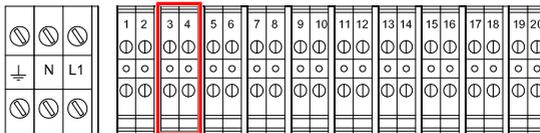
**Never supply voltage (Neutral + Phase) to the outputs of dry contacts under penalty of cancellation of the warranty.**

In order to operate the outputs correctly, it is necessary to configure them on the website.

These settings can be partly carried out on the Intellipool interface, through the related menus.

### 4.5.3 Connection of the " PENTAIR VSF " filter pump

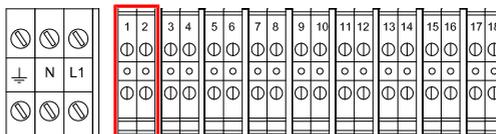
The connection of the supply phase, the neutral and the earth must be made through the connection terminal block according to terminals 3 and 4 (for the earth connection: proceed to the connection on the dedicated terminal block).



The connection of the control cable must be carried out on the terminal blocks 47 and 48.

### 4.5.4 Connection of the heat pump power supply (if installed)

The connection of the supply phase, the neutral and the earth must be made through the connection terminal block according to terminals 1 and 2 (for the earth connection: proceed to the connection on the dedicated terminal block).



The power consumption of the heat pump shall not exceed 20 A in single phase.

The control of the operation of the heat pump must be connected to terminals 21-22 (refer to the instructions for the heat pump used).

The connection of the BUS control cable for a Pentair heat pump (Invertemp) must be carried out on the RS-485 terminal blocks present in the SPEEEO Connect, and **do not use terminal blocks 21-22**.

**Info**



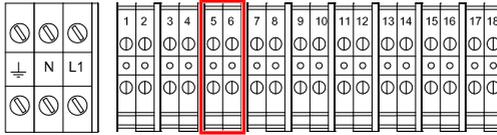
**The connection of the RS-485 control cables (IntelliFlo, InverTemp) must be made in the SPEEEO Connect on the RS-485 connectors.**



**IntelliFlo steering, Pentair PAC,  
Dedicated terminal block (+)/(-)  
Inside the Speedeo Connect box**

### 4.5.5 Connection of the pool automatic shutter power supply (if equipped)

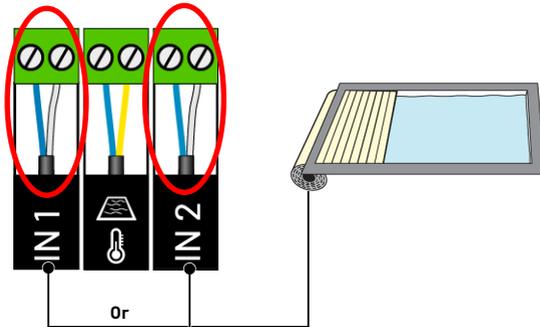
The connection of the supply phase, the neutral and the earth must be made through the connection terminal block according to terminals 5 and 6 (for the earth connection: proceed to the connection on the dedicated terminal block).



The electric consumption of the automatic shutter of the swimming pool must not exceed 16 A in single phase.

This connection allows only the electrical supply of the swimming pool shutter and not its opening or closing control.

If the shutter box is equipped with an “end of travel” contact, it can be connected to the terminal block of the SPEEEDO Connect box on the terminal block IN 1 or IN 2 and set the function in the SPEEEDO Connect.



## 4.6 Soleo and Speedeo Connect

### 4.6.1 Wall mounting

#### Caution - material

- ❗ **The device must not be installed outdoors, preferring instead a technical room inaccessible to children.**
  - Ensure that the bracket on which the appliance is installed can support a load of 5 kg.
  - Use dowels suitable for the bracket on which the enclosure is to be installed.

#### Info



**The installation procedure below is valid for the boxes SOLEO and SPEEDEO Connect.**

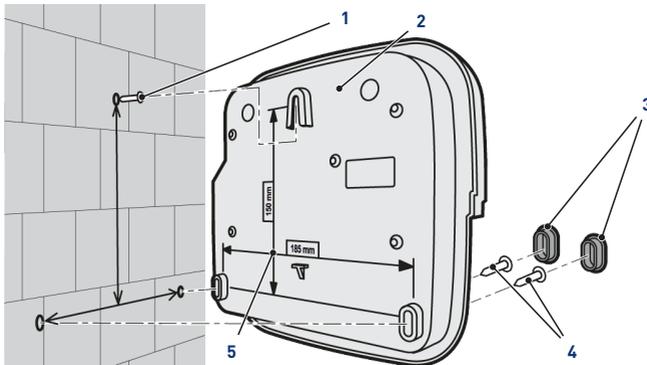
1. Mark the three holes to be drilled in the wall according to the dimension (5) indicated behind the device (2).
2. Drill through the wall at the previously marked locations.
3. Insert one dowel into each hole.
4. Install the upper screw (1) and hang the device (2) in the place provided for this purpose.
5. Secure the appliance (2) using the two bottom screws (4).
6. Install the two covers (3) of the screws in order to ensure the tightness of the device (2).

#### Info



**The quick-connect cables are connected to the bottom of the appliance (2).**

Install the cable ducts and plugs with the supplied silicone grease. Cable ducts and plugs prevent the entry of moisture or acid vapour into the appliance. Never leave an empty hole unused without protection. See Chapter Connections [→Page 42].



### 4.6.2 Hydraulic and electrical installation

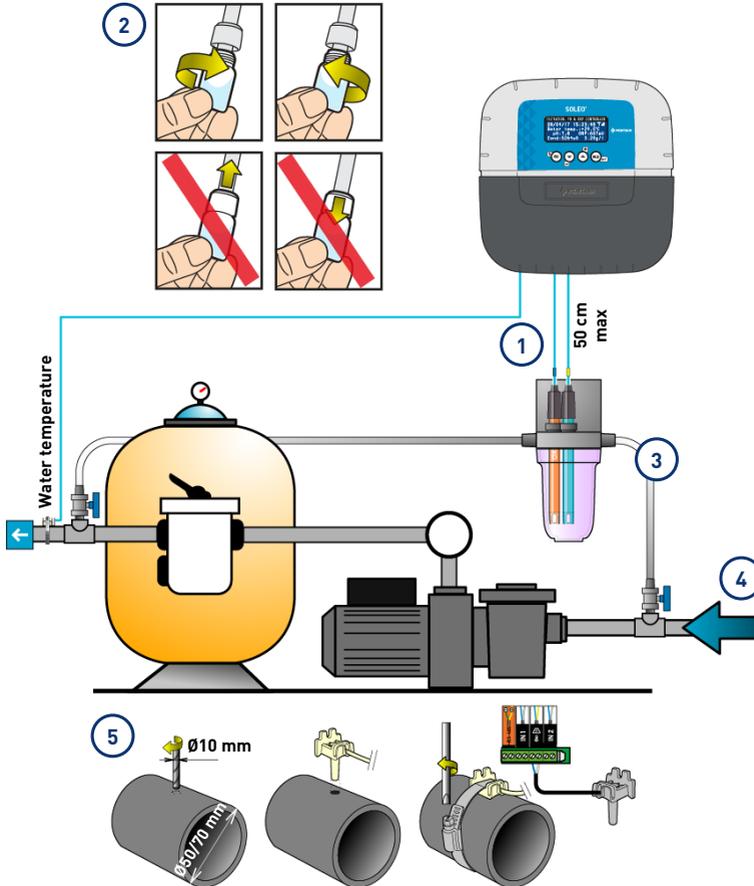
The diagram below illustrates the electrical and hydraulic connections of the Probe Unit with the analysis chamber.

**Mandatory**



**It is imperative to isolate the bypass by closing both valves before changing a probe.**

Risk of flooding.



**1** The probe cables must not cross the power cable (risk of interference) or be wound on themselves.

**4** The hydraulic network must be connected to earth by means of a device validated by an electrician so as not to alter the reading accuracy of the probes.

- 2 Install the probes of the analysis chamber having previously removed the lower part (the transparent bowl).

Installation of probes [→Page 39]

- 3 Install the analysis chamber according to the diagram and limit the flow rate in order to fill it slowly (filling in 1 minute). Then leave this adjustment of the passage of the water in the analysis chamber.

- 5 The SOLEO is delivered with a probe to measure the water temperature. A second probe (optional) can be installed to measure the air temperature. For better accuracy of the water temperature sensor, install it before pump filtration.

For better accuracy of the air temperature probe, install it away from the sun.

Installation of probes [→Page 39]

### 4.6.3 Installation of probes

Installation of measurement probes in the analysis chamber (provided):

 CAUTION



**Filling of the probes with potassium chloride**

Risk of splashing on skin, eyes and clothing

- Handle with care
- Do not ingest

**Mandatory**



**The probe tubes are filled with potassium chloride.**

**If you want to reuse them, fill them again with potassium chloride or in the absence of running water.**

Risk of damage to probes.

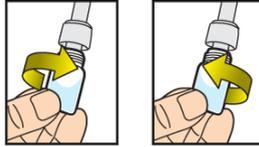
**Mandatory**



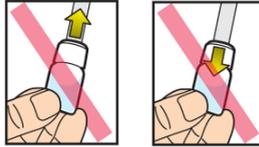
**The conductivity probe pin should not be used for other probes.**

1. Unscrew the spigots.

Screw/unscrew cylinders



Never push or pull the cylinders that have the cap



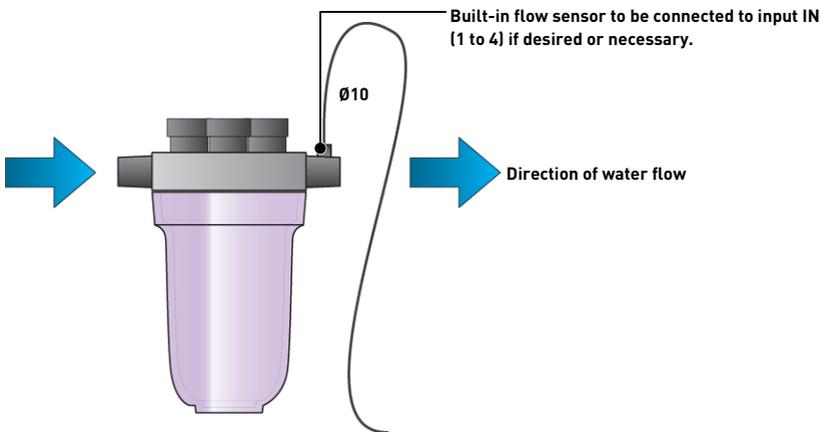
**Prohibition**



**Prohibition of pushing or pulling the cramps.**

Risk of damage to probes.

2. Install the probes in the analysis chamber provided.
3. Connect the probes to the SOLEO, see Soleo Connections [→Page 42].
4. Do not lengthen the probe cables.



**Info**

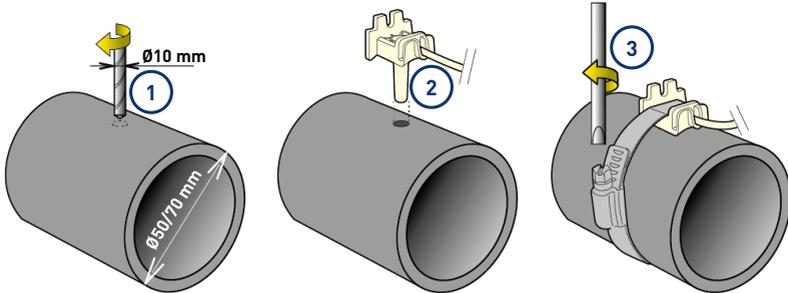


**Only the Pentair probes are compatible and guarantee the correct operation of the device.**

### Installing the water temperature sensor

Install the water temperature probe preferably before the pump filtration system.

1. Drill the PVC pipe (Ø50-70 mm) to make a hole with a diameter of 10 mm.
2. Remove the chips and check for the presence of the O-ring under the sensor.
3. Place the sensor in the hole then place the metal collar in the groove and tighten.
4. Connect the probe cable to SPEEDEO Connect (see diagram Speedeo Connect Connections [→Page 43]).



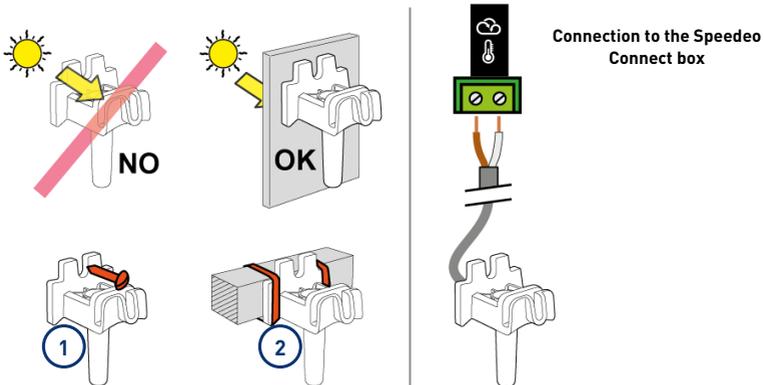
### Installing the Air Temperature Sensor (Optional)

If the air temperature sensor is connected, it automatically becomes the reference value for frost-free management. The air temperature probe is placed outside and protected from the sun's rays so as not to distort the measurement. It spreads easily thanks to its 6 m long cable.

**Info**



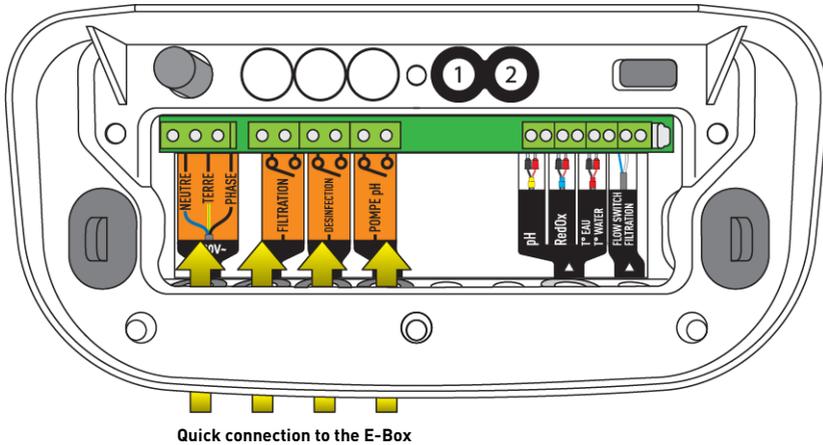
**If an air temperature probe is connected, then the air temperature information from the radio relay will no longer be retained.**



- 1 Fastening to a wall by screwing
- 2 Rilsan collar attachment to a horizontal bar of a grid

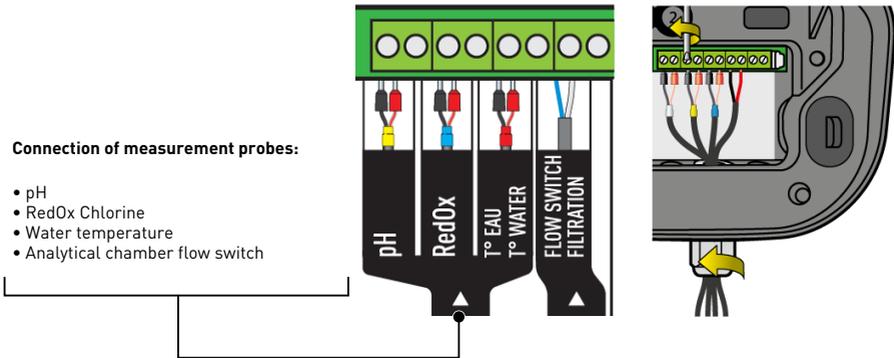
## 4.6.4 Connections

### 4.6.4.1 Soleo Connections



#### Connection of measurement probes:

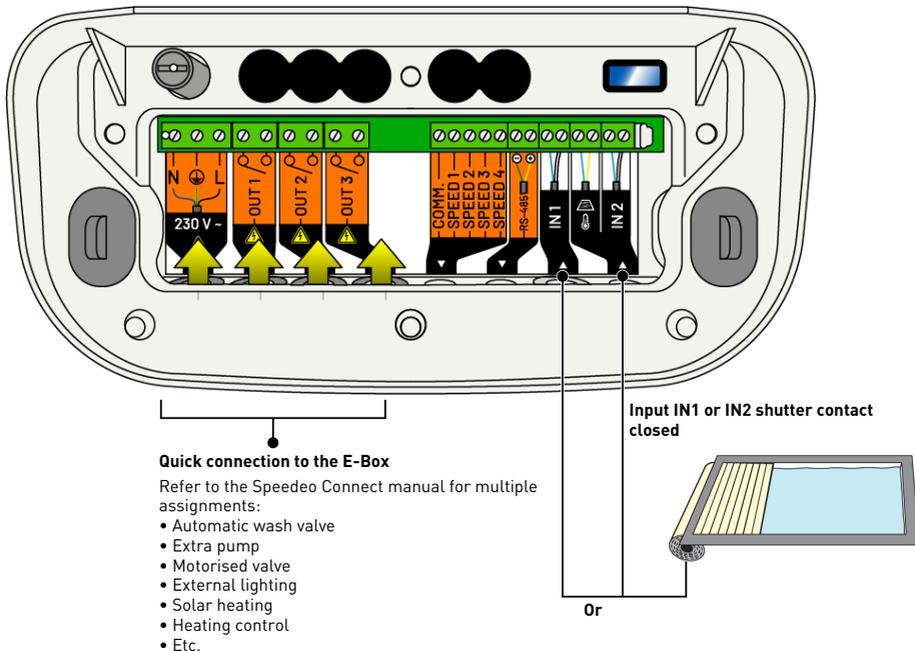
- pH
- RedOx Chlorine
- Water temperature
- Analytical chamber flow switch



#### 4.6.4.2 Probe connections (pH + RedOx + temperature)

1. Unscrew the cable gland completely: be careful not to drop the black flexible seal.
2. Pass the 4 cables through the nut and the cable gland.
3. Connect each terminal according to the indication under each terminal block.
4. Screw with a 2.5 mm slot screwdriver to 0.5-0.6 N.m.
5. Tighten the cable gland tightly by hand.

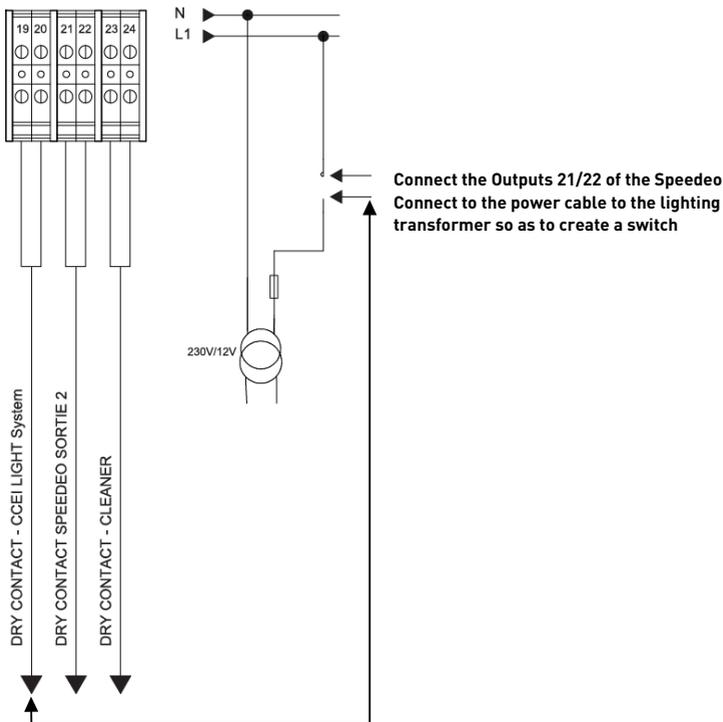
### 4.6.4.3 Speedeo Connect Connections



**Info**


**Connecting the limit switch of the pool flap will automatically reduce chlorine production through an electrolyser if it is connected and entered through the SPEEDEO Connect menu (see the SPEEDEO Connect manual).**

- ⇒ **Output 1** assigned to an electric robot through the SPEEDEO Connect (230 V side socket), to a blower (terminals 9 and 10 deliver a voltage of 230 V 8A) or dry contact (terminals 23 and 24 8A max)
- ⇒ **Output 2** to be assigned to the choice of the SPEEDEO Connect (terminals 15 and 16, deliver a voltage of 230V 6A max), or by dry contacts (terminals 21 and 22 8A max)
- ⇒ **Output 3** allocated to the lighting of the pool (terminal blocks 25 to 32) in 12 V 50 W / projector and by dry contacts (terminal blocks 19 and 20 8A max)

**Output 3: Control of external lighting**

**Info**

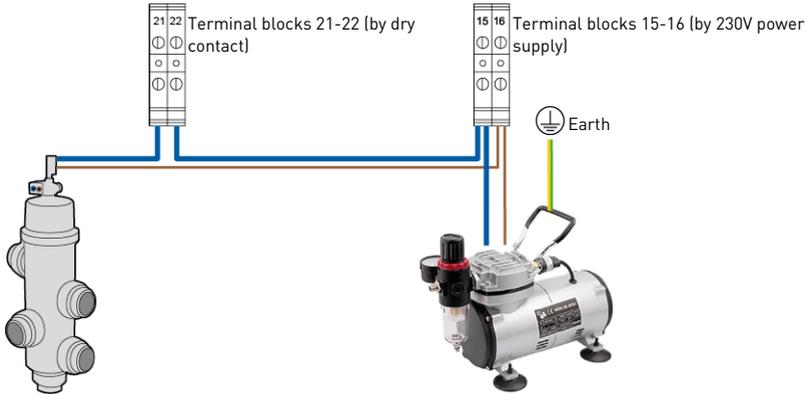

**Control will be carried out through the Pentair Home or Pro through Output 3 of the SPEEDEO Connect (see the SPEEDEO Connect manual) assigned to the pool lighting function.**

1. Proceed with the configuration through the SPEEDEO Connect menu, in order to assign Output 3 with the pool lighting function.

## Output 2: Connection example

### Connecting a Pneumatic Push/Pull Valve for Filter Washing

1. Connect the valve according to the diagram below.
2. In the menu "Outputs > Output 2", through the Installation menu (see the SPEEDED Connect manual), select the output Output 2 "**Filter wash**".



## 4.7 Control of variable speed pumps

### 4.7.1 PENTAIR IntelliFlo VSF and IntelliFlo 3

**Info**



Set the appropriate Speed 1 (Frost Free), Speed 2 (Eco), Speed 3 (Normal) and Speed 4 (Max) speeds on the Drive (black control box on the IntelliFlo pump).

**Not supplied:** the control cable.

#### IntelliFlo PENTAIR Speed Adjustment

- **Frost free:** Outlet used to trigger filtration for a water temperature < +3°C (modifiable).
- **Eco Speed:** Speed used when no preselected event (see relevant menu) is active.
- **Normal speed:** Speed used for the purposes of a preselected event (see relevant menu).
- **Maximum speed:** Speed used for backwashing or “shock” treatment (24 h of filtration and electrolyser).



### 4.7.2 PENTAIR VS2 and VS2m

**Info**

**i** Set the appropriate Speed 1 (Frost Free), Speed 2 (Eco), Speed 3 (Normal) and Speed 4 (Max) speeds on the Drive (black control box on the Intelliflo pump).

**Not supplied:** the control cable.

#### Setting speeds on PENTAIR VS2 and VS2m pump

- **Frost free:** Outlet used to trigger filtration for a water temperature < +3°C (modifiable).
- **Eco Speed:** Speed used when no preselected event (see relevant menu) is active.
- **Normal speed:** Speed used for the purposes of a preselected event (see relevant menu).
- **Maximum speed:** Speed used for backwashing or “shock” treatment (24 h of filtration and electrolyser).

Control of dry contacts  
Dedicated terminal block in the Speedeo Connect housing



### 4.7.3 Other variable speed pumps

**Info**

**i** Refer to the manual for the pump used as well as the manual for the box SPEEDED Connect for the connection to the dedicated terminal block.

**Not supplied:** the control cable.

#### Adjusting Speeds on the Pump

- **Frost free:** Outlet used to trigger filtration for a water temperature < +3°C (modifiable).
- **Eco Speed:** Speed used when no preselected event (see relevant menu) is active.
- **Normal speed:** Speed used for the purposes of a preselected event (see relevant menu).
- **Maximum speed:** Speed used for backwashing or “shock” treatment (24 h of filtration and electrolyser).

#### 4.7.4 Single speed pump

##### Info



**Connects directly into the E-Box and is protected by the thermal circuit breaker 4/6.3A.**

##### Connection

- On terminal block 7 and 8 of the E-Box.

Depending on the power of the pump, adjust the thermal circuit breaker installed in the E-Box to the calibre necessary for the consumption of your filtration pump.

In this case, nothing is to be connected in the box SPEEEDO Connect.

## 5 Programming

### 5.1 Presentation of menus on Soleo

- Refer to the full SOLEO manual

#### Filtration

_____	Filtration: AUTO, SHOCK, TIMER, OFF, ON
_____	Start: 07:00
_____	Fine: Auto
_____	Mode: Eco, Normal, Turbo
_____	ORP priority: ON, off
_____	Frost free: +3°C
_____	Algorithm: t=T VS, BlueVS, T/2Cl <sub>a</sub> , BluCl <sub>a</sub>
_____	Eco mode: -30%
_____	Turbo mode: +30 %
_____	Flow Switch: YES, NO

#### Washing Filter

_____	Manual wash: "Valid" to start washing
_____	Washing: 70 s
_____	Rinsing: 20 s

#### Disinfectant

_____	Mode: AUTO, OFF
_____	Instruction: 650mV
_____	Type: PUMP, ELECTROLYSIS, PEROXIDE, WEEK, DAY
_____	Stop threshold: 16°C
_____	Injection: 15 s (every 15 min) (PUMP mode only)
_____	Vol. Basin: 48 m <sup>3</sup> (PEROXIDE mode only)
_____	Dose pump: 1.0 l/h (PEROXIDE mode only)
_____	Vol./Week: 0.4 l (PEROXIDE mode only)
_____	Comp. Temp. : 1.0 (PEROXIDE mode only)
_____	Max volume: 0.5 l/d (PEROXIDE and PUMP mode only)
_____	Alert range: 100 (if setpoint is 650mV, min alert = 650 - 100 = 550mV, max alert = 650 + 100 = 750mV)
_____	Priming: ACTIVE (all the time while OK key is pressed)

## pH

- Mode: AUTO, OFF
- Instruction: 7.2
- Type: pH-, pH+
- Stop threshold: 3°C
- Injection: 15 s (every 15 min)
- Max volume: 0.5 l/d
- Alert range: 0.2 (if setpoint is 7.2, min. alert =  $7.2 - 0.2 = 7.0$ , max. alert =  $7.2 + 0.2 = 7.4$ )
- Priming: ACTIVE (all the time while OK key is pressed)

## Setting the time

- Time: 07:00
- Minute: 45 min

## Calibration

- Temp. Water: 25.1°C
- Temp. Air: 27.8°C
- pH: 7.0, pH 4.0

## Information

- Firmware Version

## Languages

- LANGUAGE: FRENCH, ENGLISH

## Update

- SHIFT Firmware: "put the USB stick & hold the key upwards"

## Radio

- Radio Channel: 01 (put the same as on Speedeo)

## History (ESC KEY in Main Menu)

- CURRENT DAY: Filtration: , Disinfect. : PH Regul.
- DAY-1 HISTORY: Filtration: , Disinfect. : PH Regul.

## 5.2 Presentation of menus on Speedeo Connect

- Refer to the full SPEEDEO manual Connect

**Duration Filtration (even if connected to the SOLEO, SPEEDEO Connect is the main one).**

- Filtration: AUTO, SHOCK, TIMER, OFF, ON
- Start: 07:00 hrs
- Fine: Auto
- Algorithm: t=T VS, BlueVS, T/2Cla, BluCla
- Frost free: +3°C
- Open shutter: YES, NO

### Filtration Speed

- Type: Single speed, 3 speeds, 4 speeds, 4 fast. + stop, 3 quickly. + stop
- Mode: AUTO, MANUAL
- If Manual, Speed: V1, V2, V3, V4 (in manual mode)
- If Auto: V1 mode (if IF): Velocity, Flux > Velocity 1: 22% or Flex V1: 9.0 m<sup>3</sup>/h
- If Auto: V2 mode (if IF): Velocity, Flux > Velocity 2: 43 % or Flex V2: 9.0 m<sup>3</sup>/h
- If Auto: V3 mode (if IF): Velocity, Flux > Velocity 3: 68 % or Flex V3: 9.0 m<sup>3</sup>/h
- If Auto: V4 mode (if IF): Velocity, Flux > Velocity 4: 90 % or Flex V4: 9.0 m<sup>3</sup>/h
- Events

- Forcing filtration: YES, NO
- Timer V2: YES, NO
  - Start: 11:00                      Fine: 16:00
- Timer V3: YES, NO
  - Start: 11:00                      Fine: 16:00
- Open shutter: YES, NO
- Heating: YES, NO
- Input 1 V3: YES, NO

## Washing Filter

- Manual wash: "Valid" to start washing
- Filtration: 100 h
- Washing: 70 s
- Rinsing: 20 s
- Car wash: YES, NO

## Temperatures

- Heating
  - Heating: AUTO, OFF
    - Instruction: 25°C
    - Mode: Smart/Eco/Boost  
(only with RS-485 connection)
    - Range: YES, NO
      - Start: 07:00
      - Fine: 23:00
    - Priority: YES, NO
    - Tempo Stop: 01 min
- Solar
  - Solar: AUTO, OFF
    - Temp. deviation. : 03°C
    - Heating delta : -3°C
- Calibration
  - Temp. Water: 25.1°C
  - Temp. Air: 27.8°C
- Frost free: +3°C

## Lighting

- Mode: Mono Colour, Sam, Party, Romance, Caribbean, American, California, Royal, Blue, Green, Red, White, Magenta

## Inputs

- E1: LIGHTING, OTHER, SHUTTER CONTACT, NOT WIRED
- E2: T° Air, T° Solar, FLAP CONTACT, NOT WIRED

## Outputs

- S1: LIGHTING, NC, CHOCK SEM., OTHER, FILTER WASH, REGUL., HEATING, SOLAR
- S2: LIGHTING, NC, CHOCK SEM., OTHER, FILTER WASH, REGUL., HEATING, SOLAR
- S3: LIGHTING, NC, CHOCK SEM., OTHER, FILTER WASH, REGUL., HEATING, SOLAR

## Setting the time

- Time: 11 h
- Minute: 55 min

## Information

- Speedeo Connect
- Server connected
- V1.17 (001) Firmware
- <http://www.popoleurope.eu>

## Languages

- LANGUAGE: FRENCH, ENGLISH, NL

## Update

- SHIFT firmware put the USB key & hold down the UP arrow key

## Radio Soleo

- Radio Channel: 03 (put the same as Soleo)

## Local pairing

- Add Device
  - Pairing in progress, please wait

## Cloud Connection

└── Connection: WiFi, Gateway

└── **WiFi information**

PNRS1SPD100000xxxx

Server connected

RSSI: -40dBm

WiFi v°: 01:03

└── **WiFi provisioning**

Provisioning Lauch App & select PNRS1SPD100000xxxx Provisioning mode

└── **Gateway**

Gateway pairing

Pairing with Gateway PNRS1SPD100000xxxx, Pairing done

## History (ESC key from main menu)

└── CURRENT DAY: Filtration: Output 1, Output 2, Output 3

└── DAY-1 HISTORY: Filtration: Output 1, Output 2, Output 3

## 6 Maintenance

### 6.1 Maintenance

Clean the outside of the various items with a dry microfiber cloth. Do not use solvents, abrasives or acids.

### 6.2 Overwintering of Soleo Connect (Water temperature < +3.0°C)

- Over-wintering: the forced operation of the pump prevents the formation of ice on the surface.
- passive wintering: lowering of the water level under the discharge nozzles, draining of the pipes, installation of wintering floats, installation of a shutter...

#### Pool active overwintering

The probes may remain in place up to a temperature greater than or equal to +3°C. of the water. If the temperature is below +3°C, there is a risk of irreversible damage to the pH and RedOx probes.

1. Be sure to keep the water temperature above +3°C (filtration activation).

If the filtration mode is activated (Auto or Timer), the SOLEO Connect includes a frost free function.

### 6.3 pH and RedOx probes

Deposition of scale or suspended elements in the basin may occur. The probes are fragile measuring elements, they should be cleaned carefully.

1. If foreign matter is deposited, clean the tip of the probes with a small soft brush (soft toothbrush) and then rinse them thoroughly under water (see Cleaning the pH or RedOx probe [→Page 56]).
2. If scale is deposited, immerse the tip of the probe in pure white vinegar for a minimum of 5 minutes and then rinse thoroughly under water (see Cleaning the pH or RedOx probe [→Page 56]).
3. Re-calibrate the pH probe before each season or every 6 months.

## 6.4 Cleaning the pH or RedOx probe

### Mandatory



**Wearing glasses is mandatory!**

### Info

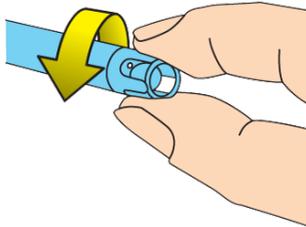


**Deposition of scale or suspended elements in the basin may occur. The probes are fragile measuring elements, they should be cleaned carefully.**

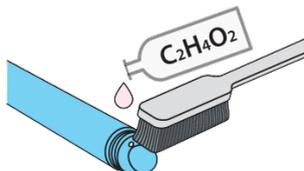
### Physical cleaning of the probe in case of presence of an element in the protective cage

Depending on the environment of the probe, organisms may develop and disrupt the measurement. It then becomes necessary to physically clean the end of the probe (pH or RedOx).

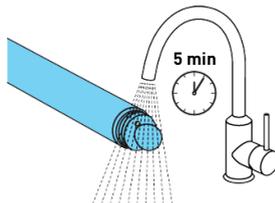
1. Carefully unscrew the protective cage by hand.



2. Using a toothbrush previously soaked in white vinegar, gently brush the tip of the probe until the foreign body is completely removed.



3. Rinse the tip of the probe thoroughly under running water for 5 minutes.



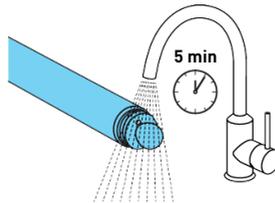
4. Screw the protective cage back on gently.
5. For pH probe only, calibrate the probe.

**Chemical cleaning of the probe (no element must be present in the protective cage)**

1. Soak the tip of the probe for at least 10 minutes in white vinegar.



2. Rinse the tip of the probe thoroughly under running water for 5 minutes.



3. Calibrate the probe for pH probes only.



## 7 Spare part

Genuine parts, necessary for the maintenance of your device Pentair, are available at your dealers.

SB Item Code	Description	Diagram
INTP-5210	PH probe 500 mm and standard solutions pH4 & pH7, 50 cm cable	
INTP-5220	RedOx Star Probe 500mm 50cm Cable	
SB-PD-PRO-004B	Probe Water or air temperature, 6m cable	
INTP-HOLD-2	The analysis chamber: constant flow for better measurement accuracy. 4m clear tube, 3 probe holders, 2 pick-up clamps, 2 taps	
INTP-DOS2	Complete dosing pump	

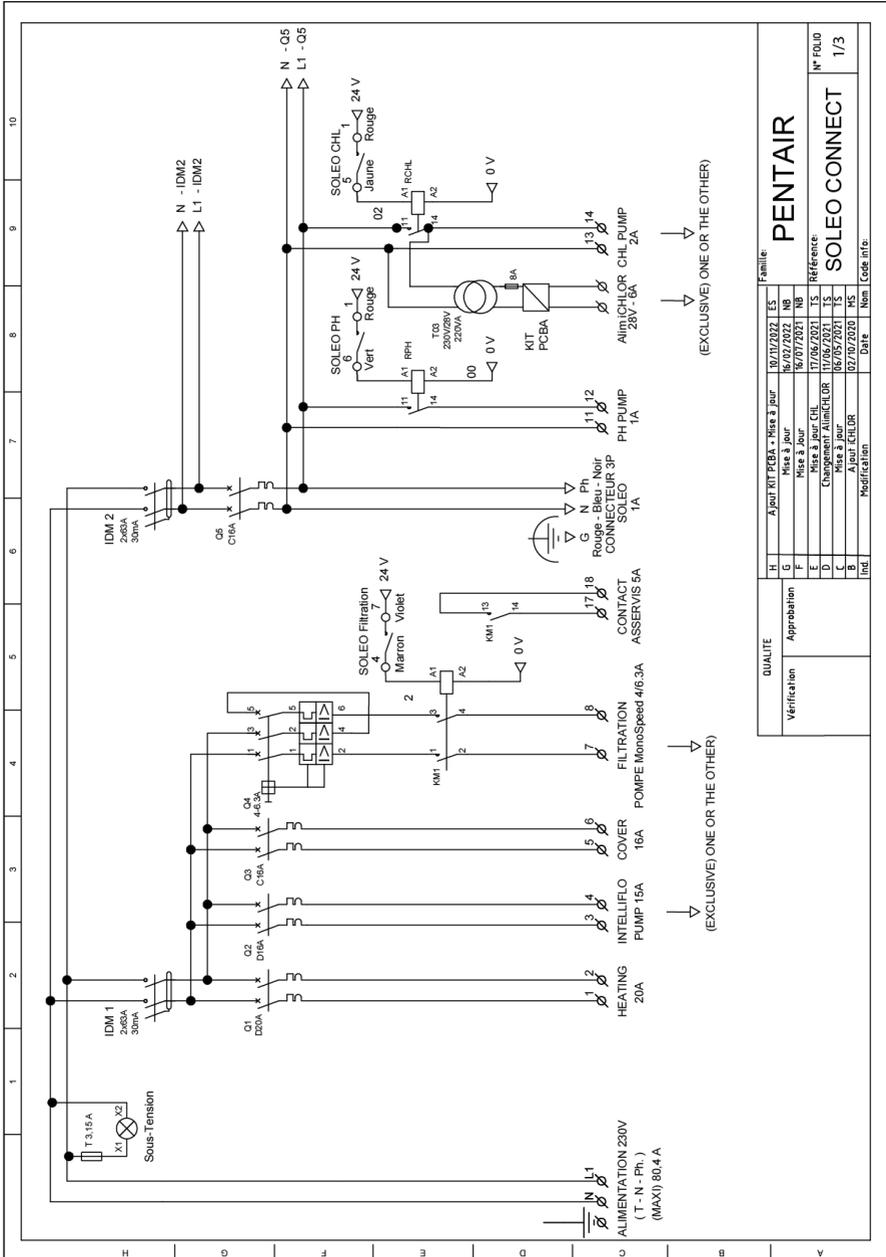
## 8 Disposal

The appliance must be disposed of in accordance with Directive 2012/19/EU or the environmental standards in force in the country of installation. The components included in the system must be sorted and recycled in a waste recycling centre in accordance with the legislation in force in the country of installation. This will help reduce the impact on the environment, health and safety, and also promote recycling. Pentair does not collect used products for recycling. Contact your local recycling centre. for more information.



# 9 Annexes

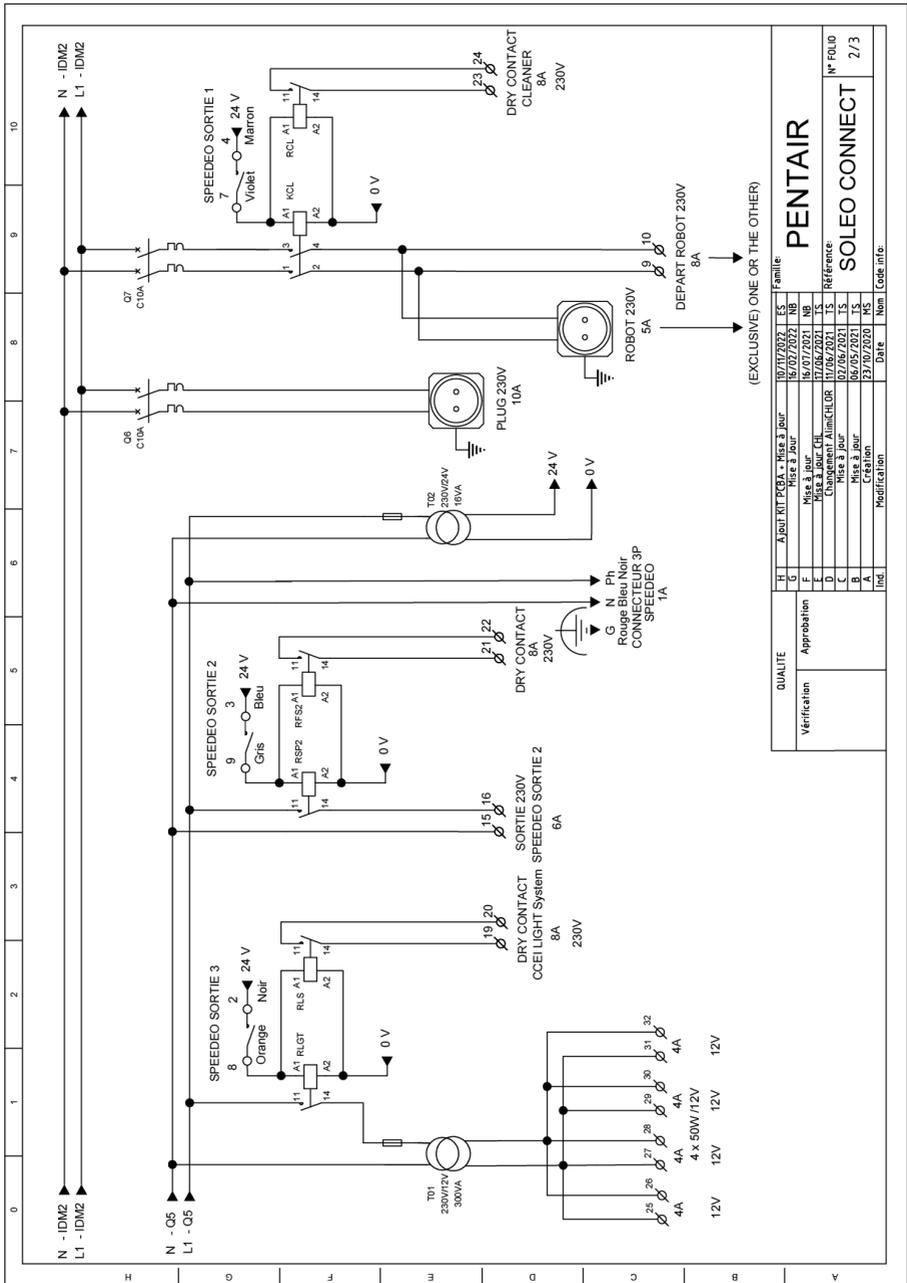
## Electric diagrams of the E-Box SOLEO Connect



DUALITE		Famille:			
H	Ajour KIT PCBA - Mise à jour	19/11/2021	ES		
F	Mise à jour	16/05/2021	NS		
E	Mise à jour	16/07/2021	NS		
D	Mise à Jour, CHL	17/06/2021	TS	Reference:	N° FOLIO
C	Changement Alim(CHLOR)	17/06/2021	TS		1/3
B	Mise à jour	06/05/2021	NS		
A	Ajour CHLOR	07/02/2020	NS		
REV	Modification			Date:	Code file:
		<b>PENTAIR</b>			
		<b>SOLEO CONNECT</b>			

▽ (EXCLUSIVE) ONE OR THE OTHER

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