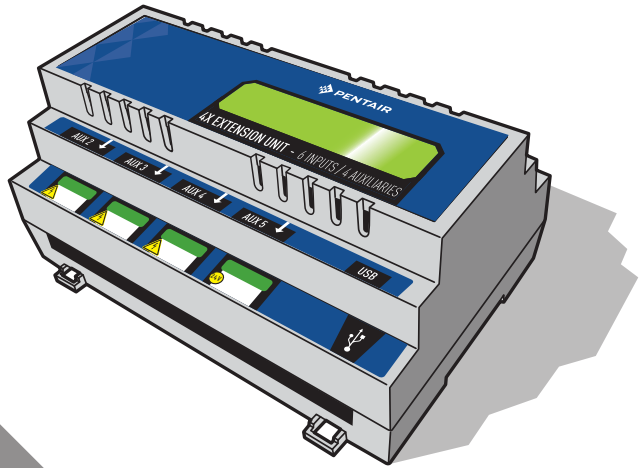




4X Extension



INTP-1030B

INSTALLATION AND USER GUIDE

IMPORTANT SAFETY INSTRUCTIONS,
READ AND FOLLOW ALL OF THE INSTRUCTIONS,
KEEP THESE INSTRUCTIONS

PENTAIR WATER SOLUTIONS SB-CU-IMP-045B (Rev. 03/2019)



- Pentair thanks you for placing your trust in the company and purchasing a 4X EXTENSION, an inlet and outlet extension module for the Control Center.

Please carefully read this user manual to fully benefit from all of the functions of the 4X EXTENSION. Store it carefully so that it can be consulted at any time.

This user manual also includes example diagrams of installations to show specific options.

- 4X Extension does not operate alone, it must be connected to a MAESTRO, INTELLIPOOL or CL17 Control Center.

- The 4X extension requires the Control Center to be connected to the internet, via its internet gateway, to be active and functional.

- One single 4X Extension can be installed per Control Center.



Declaration of conformity

Directives – Harmonised standards

Pentair International Sarl – Avenue de Sévelin 18 – 1004 Lausanne – Switzerland

We declare, under our own responsibility, that the product meets the directives

SAFETY EN 61010-1:2010

EMC EN 61326-1: EN 301 489-3

EMF EN 62311

4X EXTENSION (+ PARTS)

INTP-1030B

PART NUMBERS:

SB-SE-INA-001A

Other normative documents

Authorised person for technical documentation

Pentair International S.a.r.l.
Avenue de Sévelin 18
1004 Lausanne – Switzerland

Lausanne, 01/04/2019

Guillaume Goussé
European Vice President of Operations



Product specifications: INTP-1030B model

Operating temperature: 0° to 40° C

Maximum operating altitude: 2,000 m

Operating hygrometry: 40% AT 75 °C

Weight (excluding probes): 0.2 kg

Power supply: 24 V ~

Box (internal use): IP 20



Waste treatment of electronic devices at the end of their service life:

The crossed-out bin placed on the main parts which make up the product indicates that it must not be disposed of with household waste. It must be returned to an appropriate collection point for electronic device recycling (information available from the local household waste collection service). This product contains potentially dangerous substances which may have adverse effects on the environment and human health.

Customer Support: PISA, ITALY (8:30 A.M. to 4:30 P.M.) CET

website: www.pentairpooleurope.com

- Warranty (excluding sensors and consumables): 2 years

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- The document is subject to change without notice

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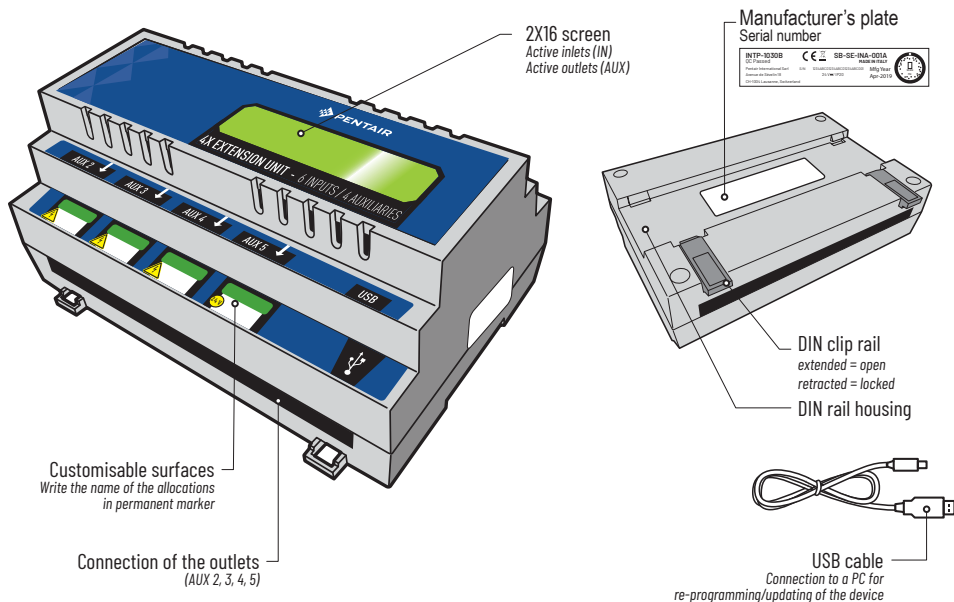
PRESENTATION

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CONNECTIONS

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4X extension - presentation



IMPORTANT SAFETY GUIDELINES, READ AND FOLLOW ALL OF THE INSTRUCTIONS, KEEP THESE INSTRUCTIONS



GENERAL POINTS

- **DANGER** - INSTALLERS, POOL SPECIALISTS AND OWNERS MUST CAREFULLY READ THESE WARNINGS AND ALL INSTRUCTIONS BEFORE USING THIS PRODUCT.

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

- **CAUTION** - This installation and user guide contains important information on the installation, operation and safety of this product. This guide should be provided to the owner and/or user of this product.

INSTALLATION

- **DANGER** - RISK OF ELECTRIC SHOCK or electrocution

- **BEFORE WORKING ON THIS DEVICE** - Always cut the supply to the device at the circuit-breaker before maintenance. Failure to do this may lead to death or serious injury to service staff, pool users or others, due to an electric shock.

- **DANGER** - SERIOUS BODILY INJURY OR DEATH CAN RESULT IF THIS PRODUCT IS NOT INSTALLED AND USED CORRECTLY.

- **WARNING** - Before installing this product, read and follow the warnings and instructions of this guide. Failing to follow these warnings and instructions may lead to serious injuries, death or material damage. Refer to www.pentairpooleurope.com for more information linked to this product.

- **WARNING** - The 4X Extension is installed in an IP65 electrical cabinet, respecting the valid local electrical standards.

- **WARNING** - Connect the device to an earthed circuit. If this system is used to control the underwater lighting devices, a ground circuit fault interrupter must be supplied for these devices. . Conductors downstream of the differential interrupter shall not occupy conduits, junction boxes or enclosures containing other conductors, except if the conductors are also protected by a differential interrupter. Refer to valid local codes for more details.

- **WARNING** - This product must be installed by an authorised or certified electrician or a qualified swimming pool professional. All of the applicable installation codes and local regulations must also be respected. Poor installation will create an electrical hazard which could result in serious injury or the death of pool users, installers or others due to electric shocks, and may also cause damage to property.

- **DANGER** - DISCONNECT THE SUPPLY CONNECTIONS BEFORE WORKING ON THIS DEVICE; ELECTRICAL POWER MAY BE SUPPLIED TO THE RELAY TERMINALS FROM OTHER SOURCES.

- **WARNING - CHEMICAL BURN HAZARD:** Make sure all pumps are switched off at the main circuit breakers at the domestic distribution board before drilling into any pipes. Set rules for all handling related to electrical aspects, water and chemical products. Group the supply pumps and chemical product tanks in a safe and secured area.

- **CAUTION** - Do not use this product to control an automatic swimming pool cover. There is a risk that swimmers could become trapped under the cover.

- **CAUTION** - Devices which are not intended for use in single-family dwellings may require additional safety equipment to comply with local regulations.

- **WARNING** - Except for remote controls, install components at a minimum of at least 1.5 m (5 feet) from the inside wall of the pool or spa.

- **WARNING** - This product is intended for use in swimming pool applications only.

- **CAUTION** - A sufficient equipotential connection (min. 4.5 mm² recommended), in accordance with local regulations, is obligatory for all metal components of the swimming pool, including the pool pump. This is necessary for the electrical safety as well as reduction of the corrosion risk.

- **WARNING** - The 4X Extension does not require a 230 V supply, it is supplied by the RS485 cable connected to the Control Center.

USE

- DANGER - DO NOT LET CHILDREN OPERATE THIS EQUIPMENT.

- **CAUTION** - Strictly respect the safety and handling procedures from the acid manufacturers, including protective measures for hands, body and eyes during transferring and using acid. Follow the prescribed safety precautions for handling muriatic acid intended for checking the water pH. Muriatic acid may cause serious physical harm and may damage the swimming pool equipment. Extra care must be taken when installing, maintaining and operating the acid pump feed systems. Acid is dangerous to handle and should be properly contained, transported, poured, stored and dispensed.

- **CAUTION** - Check the pH and sanitizer levels of the water before using the pool and make sure the filtration device is not obstructed.

- **CAUTION** - Periodically use an independent pH and chlorine testing kit to ensure that the pH and chlorine is at a safe level. If the pH and Oxidation Reduction Potential (ORP) or conductivity probes are broken, depleted or dirty with oils, lotions, or other contaminants, they can report inaccurate results to the system causing incorrect water chemistry, which could harm people or equipment.

- **CAUTION** - Consult the device display daily to ensure there are no alarm messages.

- **DANGER** - Water temperatures greater than 37.7° C (100° F) are a health hazard. Prolonged immersion in hot water may induce hyperthermia. Hyperthermia occurs when the internal body temperature exceeds the normal temperature of 37° C (98.6 °F) by several degrees. Hyperthermia may produce the following effects: (1) Unawareness of impending danger. (2) Failure to perceive heat. (3) Failure to recognise the need to leave the spa. (4) Physical inability to leave the spa. (5) Harm to the foetus in pregnant women. (6) Unconsciousness leading to the risk of drowning. The use of alcohol, drugs or medicine is a factor which increases the risk of hypothermia in hot tubs and spas.

- **WARNING** - When mixing acid with water, ALWAYS ADD THE ACID TO THE WATER. Never add water to the acid. When adding a chemical product to the swimming pool, carefully follow the manufacturer instructions.

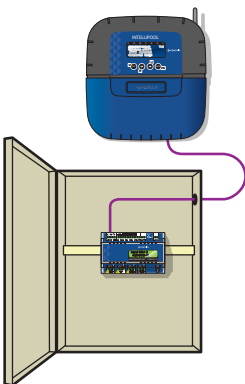
- DANGER - DO NOT MIX SODIUM HYPOCHLORITE AND MURIATIC ACID.

- **DANGER** - Keep standard solutions away from children, ensure that the bottles are securely closed, store them in a dry and ventilated location and do not let them freeze. The pH 4 calibration solution is acidic.

- **WARNING** - To configure the 4X extension, the account needs to be accessed from the Control Center via a computer. Even though settings can be made remotely, checking the settings made on-site is recommended.

Connection to the Control Center and start-up

 - The RS-485 connection, which links the device from the Control Center, must remain within the building.



During initial start-up:

- If the Control Center is already operational, the 4X Extension light may flash for up to 15 minutes (max.) before lighting continuously.

- If the Control Center is stopped then re-started, the 4X Extension light flashes for 30 minutes (max.) before lighting continuously.

- If the 4X extension flashes for more than 15 minutes, check the power supply of the Control Center and the connections of the RS485 cable.

i The functions described in this notice reflect the functions of Control Center firmware v5.03 and 4X extension v3.01

Possible connections on the 4 In inlets:

- **Disabled:** Unused inlet, or makes it possible to disable an inlet which was previously used and to leave the connection without any consequences.
- **pH tank:** Affects the relevant input to a dry contact (normally open, the contact closes when there is no more product) at a low level in the pH tank. In case of low level, the interior display shows a symbol of a fuel pump in front of the numerical pH value, an identical indicator appears on the internet account summary and an e-mail is sent following the pre-set alert settings.
- **RedOx tank:** Affects the relevant input to a dry contact (normally open, the contact closes when there is no more product) at a low level in the disinfectant tank. In case of low level, the interior display shows a symbol of a fuel pump in front of the numerical RedOx value, an identical indicator appears on the internet account summary and an e-mail is sent following the pre-set alert settings.
- **Filtration stop:** Any closure of a dry contact on the relevant input will result in the filtration immediately stopping.
- **Pool cover:** Connecting a dry contact linked to closed sensor of a pool cover (the rolling shutter covers the pool) automatically reduces daily duration production of a salt chlorinator.
- **Not specified:** Connecting a dry contact has no effect on the operation of the technical room but allows you to view, on the history menu, the activation time of a piece of equipment that you want to monitor (refilling, etc.) as well as its real time status in the summary menu.

Possible connections on the two "alarm AL" inlets:

If one of these inlets closes, an alert is sent to the dedicated Pentair application.

Empty flocculant container, empty algicide container, opening of the door of the technical room, feedback from a circuit breaker, etc.

The following can be customised in the application:

- the name of alarms 1 and 2.
- the NO/NC status (normally open, normally closed)
- Activation/disabling (via the Pool cleanliness > 4X extension installation menu)

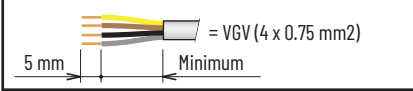
Possible connections on the 4 AUX outlets:

- **Disabled:** Unused outlet, or makes it possible to disable an outlet which was previously used and to leave the connection without any consequences.
- **pH:** The relevant output closes a dry contact which makes it possible to control a pump which injects a pH corrector. You must specify the type of pH- / pH + regulation in the relevant menu.
- **If filtration is ON:** The relevant output closes a dry contact when the filtration starts (useful for UV lamps).
- **AUX:** The relevant output closes a dry contact
- **AUX triggers filtration:** The closure of this output automatically conditions the filter to start.

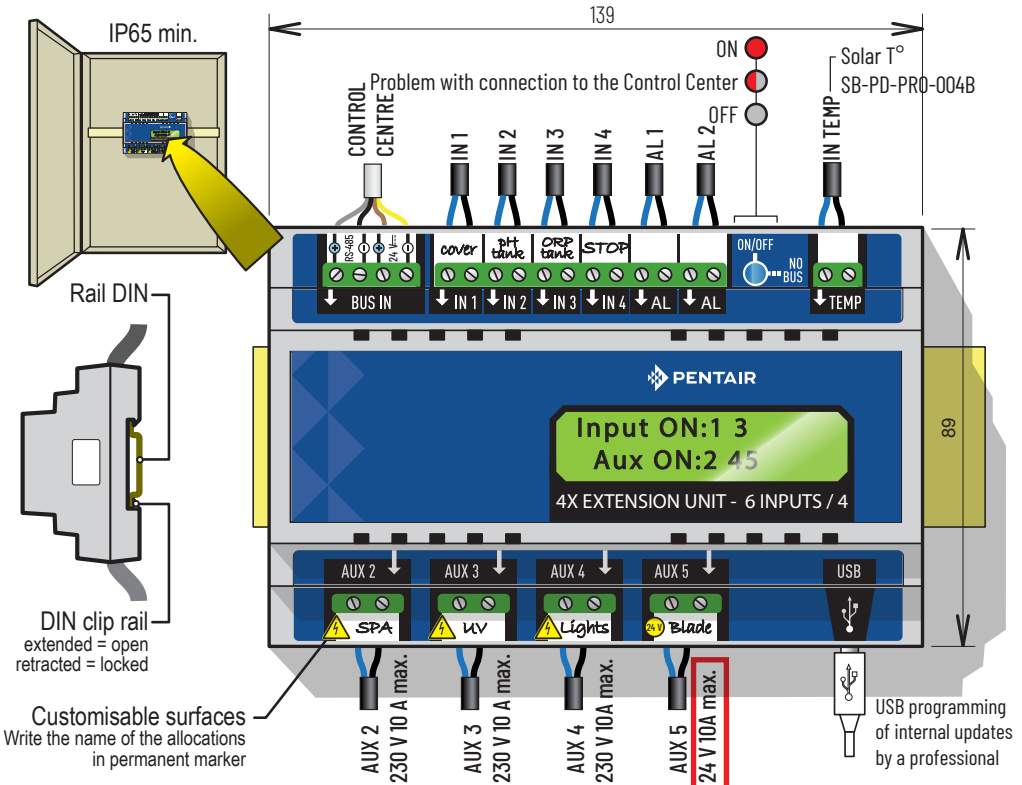
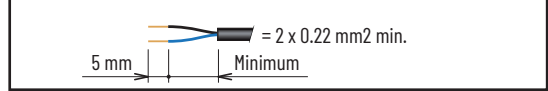
4X extension - required space and connections

- The device is placed within an IP65 electric cabinet on a DIN rail.
- The device must be installed by a qualified technician according to valid local regulation
- This device is permanently connected.
- Each outlet has a dry contact which is normally open for a maximum voltage of 230 V.
- To cut a current above 10 A or voltage above 230 V, please plan for an additional contactor.
- The device does not supply any voltage on the AUX outlets (dry contacts).
- The device must be placed close to the electrical cabinet to aid connections (3 m max.).

"BUS IN" (RS485) compatible cable

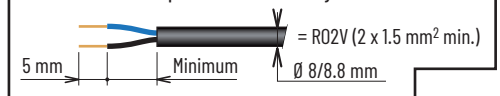


"IN" (inlets) and "AL" (alarm) compatible cable



- On the outlets connected to 230 V (AUX 2, 3, 4), plan upstream electrical protection (a circuit breaker) adapted to consumption of the connected device.

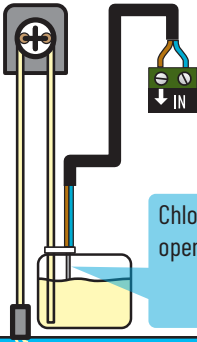
"AUX" compatible cables (dry contacts)



 Never supply voltage to the IN/AL inlets.

Connection of a low pH or RedOx tank level probe:

- 1 - Directly connect the level sensor to the selected inlet.
- 2 - In the "Modify a pool > 4X Extension Installation" menu, select the relevant tank and customise the name if necessary.

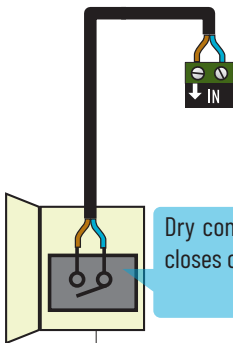


4X extension: 12345 ✖

Inputs ⓘ Inlet X

Connection of an end position sensor for the pool cover:

- 1 - Directly connect the end position switch to the selected inlet.
- 2 - In the "Modify a pool > 4X Extension Installation" menu, select "Pool cover" and customise the name if necessary.



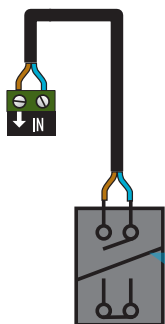
4X extension: 12345 ✖

Inputs ⓘ Inlet X

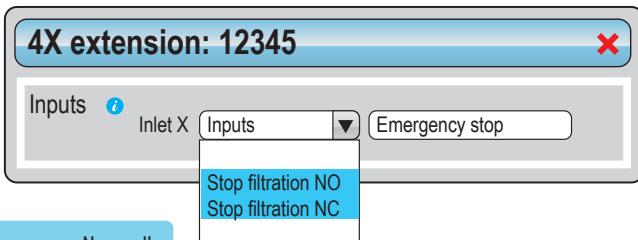
⚠ Never supply voltage to the IN/AL inlets.

Connection of an element intended to cut filtration (NO or NC):

- 1 - Directly connect the switch to the selected inlet.
- 2 - In the "Edit a pool > 4X Extension Installation" menu, select "Stop filtration" and customise the name if necessary.



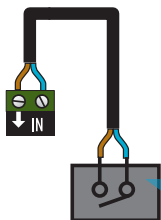
Normally Open or Normally Closed dry contact according to the selection:



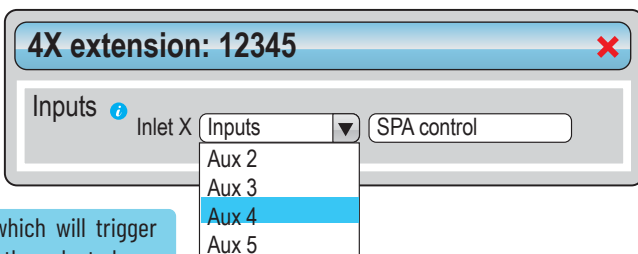
NO = Normally Open = authorises filtration (its closure will stop filtration immediately).
 NC = Normally Closed = authorises filtration (its opening will stop filtration immediately).

Connection of an element before launching an auxiliary (X):

- 1 - Directly connect the information collection contact to the selected inlet.
- 2 - In the "Modify a pool > 4X Extension Installation" menu, select "Aux X" and customise the name if necessary.



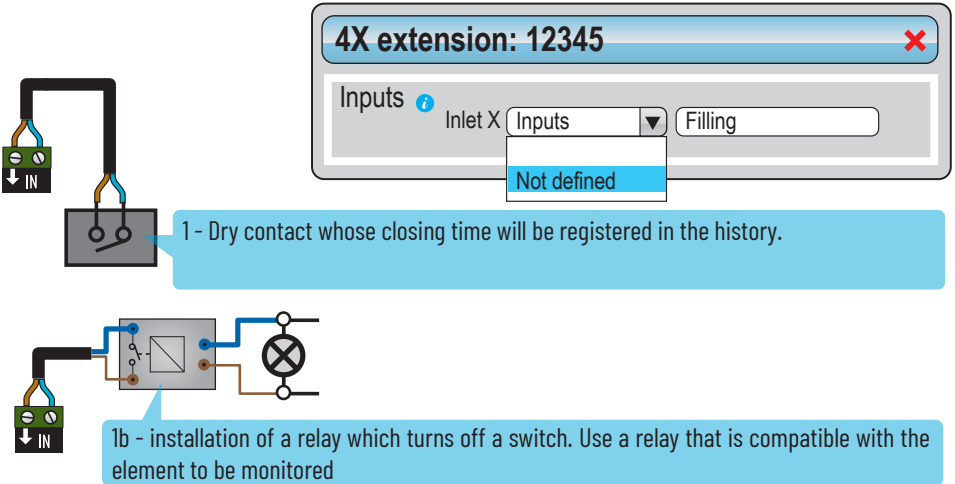
Dry contact which will trigger the launch of the selected aux when closed.



 Never supply voltage to the IN/AL inlets.

Connection of a piece of equipment to measure its activity time in the history.

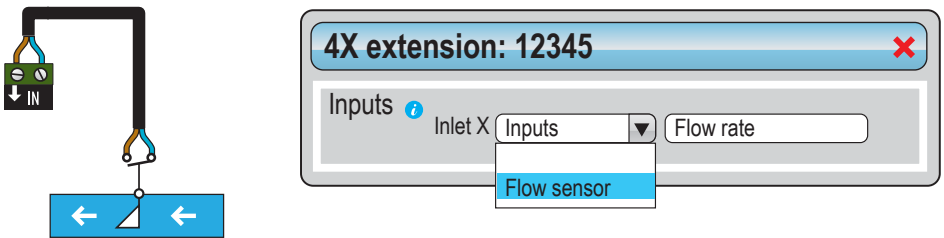
- 1 - Directly connect the contact. If the device does not have a contact, connect to a relay in accordance with diagram 1b.
- 2 - In the "Modify a pool > 4X Extension Installation" menu, select "Not defined" and customise the name if necessary.



The diagram shows a green IN inlet connected to a dry contact switch. A callout box points to the switch with the text: "1 - Dry contact whose closing time will be registered in the history." Below this, a schematic labeled "1b" shows a relay connected to a switch and a light bulb. A callout box points to the relay with the text: "1b - installation of a relay which turns off a switch. Use a relay that is compatible with the element to be monitored". To the right, a screenshot of the "4X extension: 12345" configuration window shows the "Inputs" section with "Inlet X" selected, a dropdown menu set to "Inputs", and a text field containing "Filling". A dropdown menu is open below the "Inputs" dropdown, showing "Not defined" as the selected option.

Connection of a flow rate sensor.

- 1 - Directly connect the contact.
- 2 - In the "Modify a pool > 4X Extension Installation" menu, select "Flow rate sensor" and customise the name if necessary.



The diagram shows a green IN inlet connected to a flow rate sensor. A callout box points to the sensor with the text: "1 - Directly connect the contact." To the right, a screenshot of the "4X extension: 12345" configuration window shows the "Inputs" section with "Inlet X" selected, a dropdown menu set to "Inputs", and a text field containing "Flow rate". A dropdown menu is open below the "Inputs" dropdown, showing "Flow sensor" as the selected option.

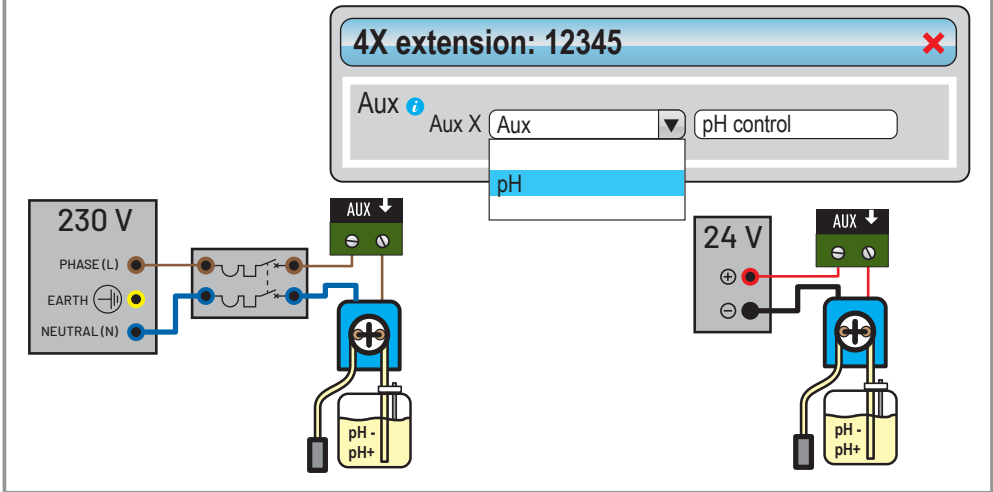
4X Extension - Connection of AUX 1/5 outlets



The outlets (AUX) are dry contacts and do not supply any voltage.

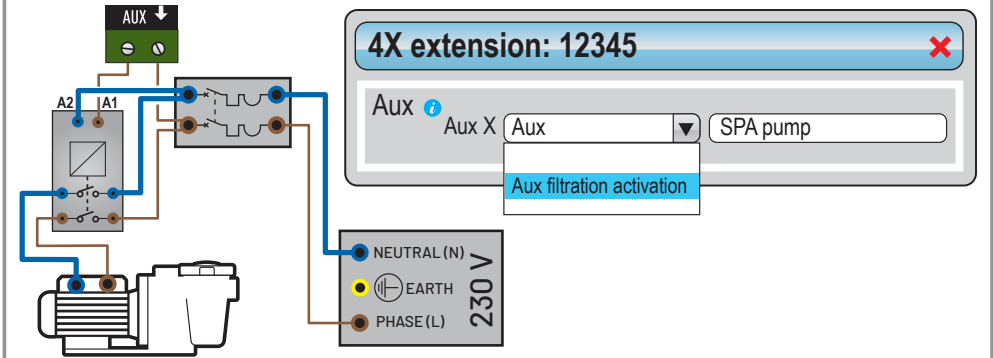
Connection of a pH/flocculant/algicide pump:

- 1 - Connect the 230-VAC or 24-VDC peristaltic pump in accordance with the following diagram.
- 2 - In the "Modify a pool > 4X Extension Installation" menu, select "pH" and customise the name if necessary.



Connection of a filtration pump or a device >10 A:

- 1 - Connect the switch in accordance with the diagram below, on the selected outlet.
- 2 - In the "Modify a pool > 4X Extension Installation" menu, select "Aux triggers filtration" and customise the name if necessary.



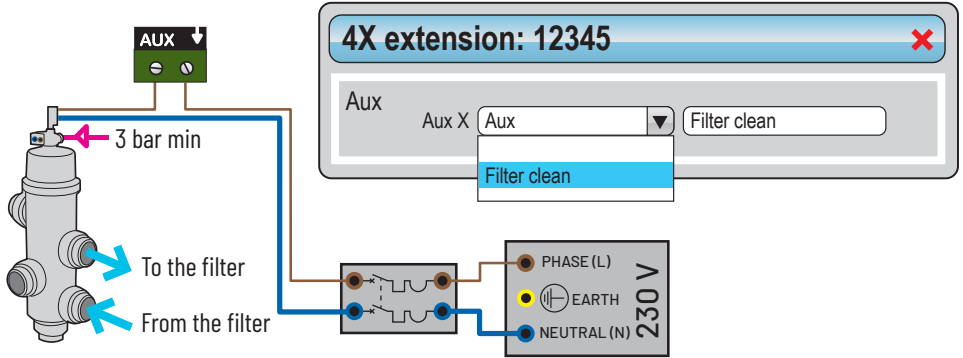
4X Extension - connections of AUX 2/5 outlets



The outlets (AUX) are dry contacts and do not supply any voltage.

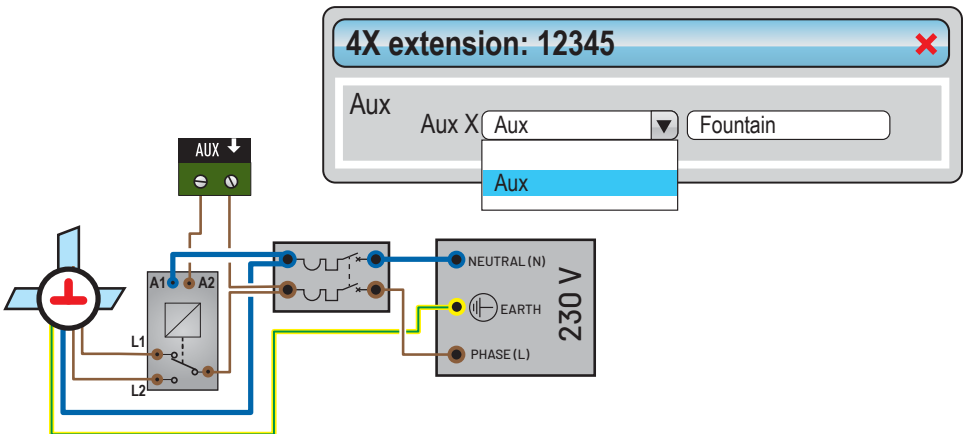
Connection of a push/pull pneumatic valve for filter washing

- 1 - Connect the valve in accordance with the diagram below.
- 2 - In the "Modify a pool > 4X Extension Installation" menu, select "Aux" and customise the name if necessary.



Connection of a 3-way valve to the Control Center (to trigger a fountain, etc.)

- 1 - Connect the valve in accordance with the diagram below.
- 2 - In the "Modify a pool > 4X Extension Installation" menu, select "Aux" and customise the name if necessary.



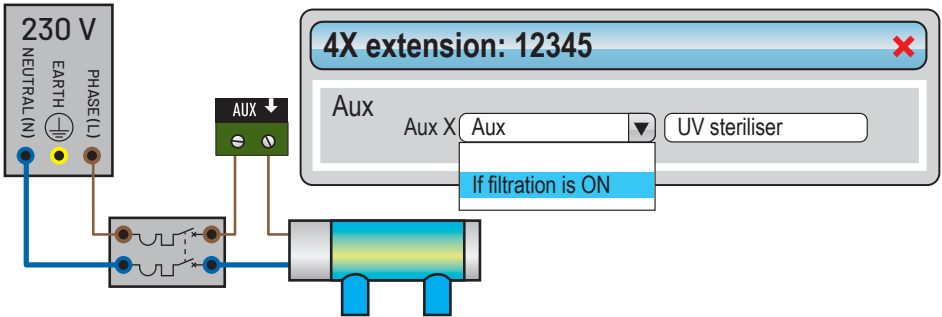
4X Extension - Connection of AUX 3/5 outlets



The outlets (AUX) are dry contacts and do not supply any voltage.

Connection of a UV steriliser

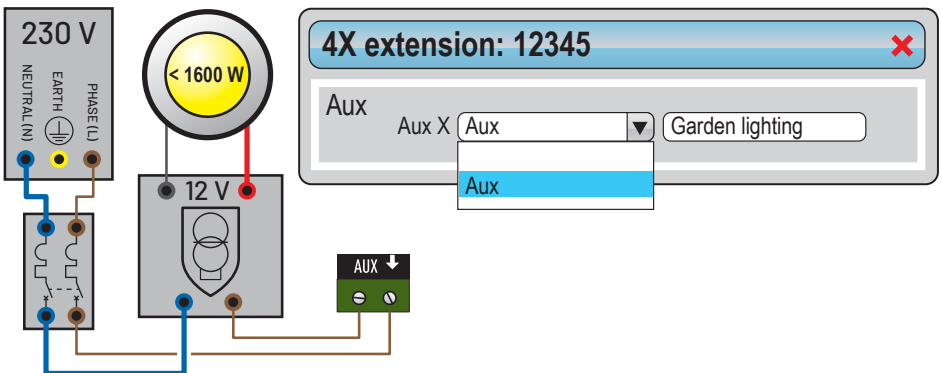
- 1 - Connect the UV tube in accordance with the diagram below.
- 2 - In the "Modify a pool > 4X Extension Installation" menu, select "If filtration is ON" and customise the name if necessary. The UV steriliser is active once the main filtration operates.



Connection of secondary lighting (garden, ambiance) with power lower than 1,600 W

i The main pool lighting must be directly connected to the Control Center.

- 1 - Connect the lighting in accordance with the diagram below.
- 2 - In the "Modify a pool > 4X Extension Installation" menu, select "Aux" and customise the name if necessary.

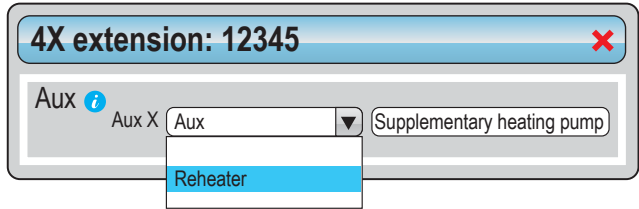


4X Extension - connections of AUX 4/5 outlets

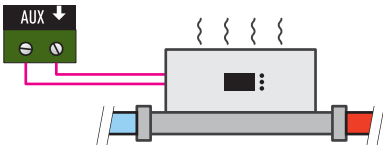
 The outlets (AUX) are dry contacts and do not supply any voltage.

Connection of a reheater

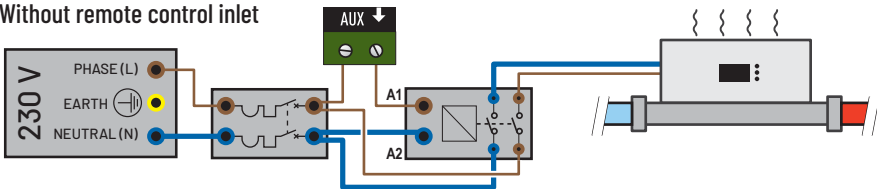
- 1 - Connect the reheater in accordance with the selection of the diagram below (greater than or less than 8A).
- 2 - In the "Modify a pool > 4X Extension Installation" menu, select "Reheater" and customise the name if necessary.



With remote control inlet



Without remote control inlet



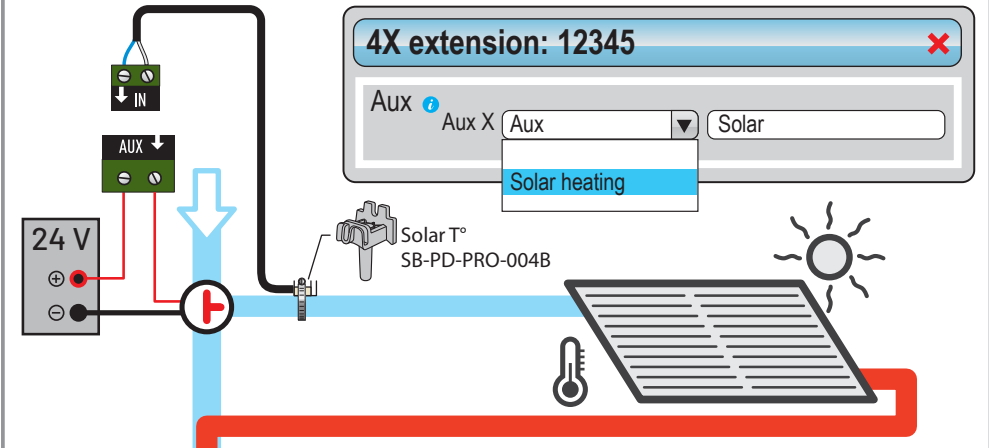
4X Extension - connections of AUX 5/5 outlets



The outlets (AUX) are dry contacts and do not supply any voltage.

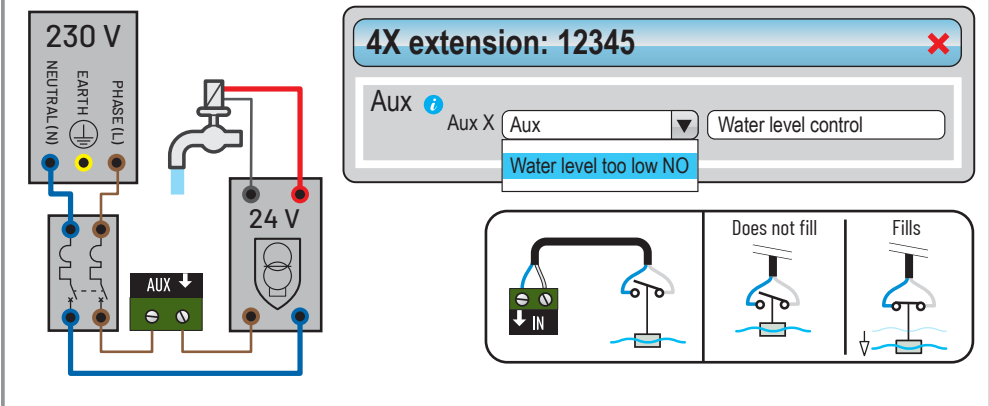
Connection of solar heating pump

- 1 - Connect the solar heating pump in accordance with the selection of the diagram below.
- 2 - In the "Modify a pool > 4X Extension Installation" menu, select "Solar heating pump" and customise the name if necessary.



Connection of a too low water level regulator (normally open NO)

- 1 - Connect the sensor and fill solenoid valve in accordance with the selection of the diagram below.
- 2 - In the "Modify a pool > 4X Extension Installation" menu, select "Water level is too low NO" and customise the name if necessary.





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