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InterPuls Universal Power Supply
IUP 320W 24VDC

Control

Technician and User Instruction Manual

Summary

1 GENERAL INFORMATION

1.1 Manufacturer

InterPuls S.p.A.
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1.2 Copyright

2 GENERAL WARNINGS

2.1 General information and safety warnings

2.1.1 Important warnings

To safeguard the operator and prevent any damage to the equipment, before carrying out any kind of operation it is important to have read and fully understood the instruction manual.

2.1.2 Symbol used in this manual

The following symbols are used in this manual to highlight indications and warnings which are of particular importance:

WARNING
This symbol indicates health and safety regulations designed to protect operators and/or any exposed persons.

CAUTION
This symbol indicates that there is a risk of causing damage to the equipment and/or its components.

NOTE
This symbol is used to highlight useful information.

2.1.3 Rules and regulations for the user

WARNING
Any failure to observe the warnings provided in this manual may lead to equipment malfunctions or damage to the system.

2.1.4 Limitation of liability

InterPuls S.p.A. declines all liability for damage to persons, animals and/or things caused by incorrect use of the equipment.

2.2 Prior using the product

2.2.1 Requirements and rules for personnel and Safety Rules

WARNING
This appliance can be used by person aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved

WARNING
Before using the device, the operator must carefully read the manual.

During the assembly and activation of the device, follow the instructions in the manual and rules and regulations applying to health and safety at the workplace.

WARNING
Children shall not play with the appliance.
Cleaning and user maintenance shall not be made by children without supervision.

2.2.2 Connection

WARNING
Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III, the instructions state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules

2.3 Disposal

2.3.1 General regulation

The appliances must be disposed of only and exclusively by specially authorized waste disposal companies in accordance with all relative legislation and prescriptions.
The packaging must be consigned to the relative authorized companies to be recycled.

2.4 Fire prevention

2.4.1 Fire prevention

NOTE
The machine is not equipped with fire extinguishers.
The operator must make sure that the place in which the appliance is installed is equipped with an adequate number of suitable fire extinguishers. The extinguishers must be positioned where they are clearly visible and protected from damage and improper use.

2.4.2 Safety regulations

WARNING
It is strictly prohibited to extinguish fires involving electrical equipment with water!

2.4.3 Characteristic of extinguishers

Use powder, foam or halogen extinguishers which must be positioned next to the device.
Operating personnel must receive adequate instruction on how to use the extinguishers.

2.5 Normative references applied

Europe:

- Directive no. 2014/30/EU Electromagnetic Compatibility (EMC)
- Directive no. 2014/35/EU Low Voltage (LVD)

USA:

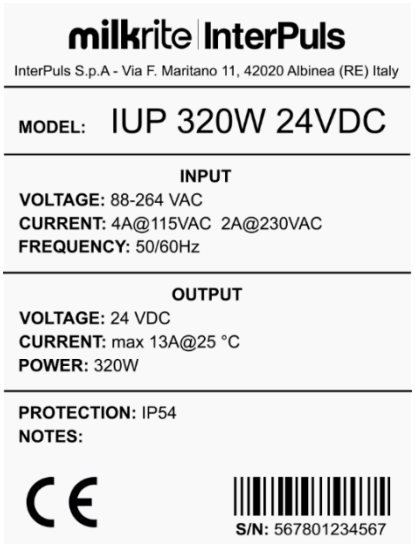
- FCC Federal Communications Commission
- UL Underwriters Laboratories

Canada:

- IC Industry Canada
- CSA Canadian Standards Association

2.6 Marking

2.6.1 Dataplates affixed to the machine



2.7 Safety decals

WARNING
The removal or damaging of safety decals is strictly prohibited.

3 DESCRIPTION OF THE DEVICE

3.1 General features

InterPuls **U**niversal **P**ower Supply (IUP) is a power supply unit used to supply direct current to various devices. Output voltage of the device is 24VDC, which is adjustable between 20V and 26.4V, while maximum supply of current is 13A at 25°C (77°F).

Output from the device is divided into 4 channels. This protects the devices that are supplied and, in the event of a fault on one of the 4 lines, it enables the rest of the system of operate correctly.

If all 4 output lines are used simultaneously in a symmetrical way, maximum current supplied to each channel is 3.25A (13A / 4 = 3.25A).

The 4 output lines are each protected with a fuse against short circuits. The red LED will only light up in the event of disconnection of the protection fuse due to a load connected to the output. If the fuse is disconnected and no load is connected to the output terminals, the corresponding LED remains off.

It is possible to take all the power supplied by the power supply network via the provided output by changing the fuse (20 mm - 0.78 in) to the larger one supplied (32 mm - 1.26 in).

The device uses the traditional technology of switching regulators, therefore, it has:

- Absorption of the line current with almost unitary power factors in compliance with standards in force in Europe (EN61000 family and derivatives) and the United States and/or Japan (former IEC555)
- High speed response to the load socket outlets
- Reduced dimensions

The converter is high frequency in order to reduce dissipation with electronic components and winding.

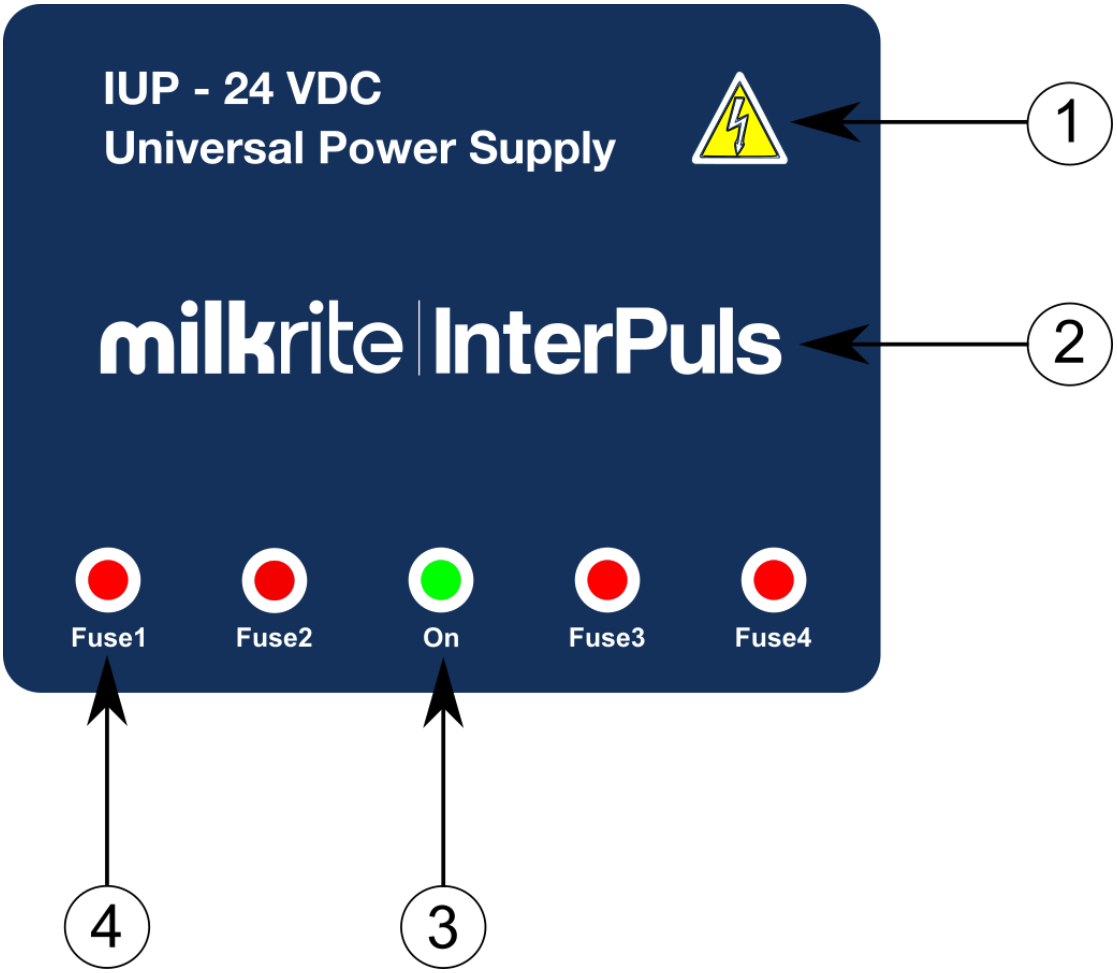
4 TECHNICAL FEATURES

Model	InterPuls IUP 320W 24VDC
Input voltage	From 88 to 264 VAC _ 50-60 Hz with a filter for common interference
Power absorption	4A @ 115VAC _ 2A @ 230VAC
Electrical performance to the extremities of the work field	> 80%
Network connection	3-pole connector with screw-type terminals
Fuses on the network	Two of 6.3A (T)
Output voltage	24 Vdc (adjustable between 20V and 26.4V)
Maximum output current	13 A
Fuses on each output	5A×4 or 20A×1
Dimensions (LxLxA)	370 x 265 x 145 mm (14.56 x 14.37 x 5.71 in)

NOTE
The power supply unit does not require a transformer.

4.1 Front

The front of the device is composed of:



1. **An LED to signal network presence (yellow)**
   It signals the presence of the electrical network connected to the device when the device is off. The LED turns off when the device is started.

2. **Logo milkrite | InterPuls**
   It lights up blue when the device is started.

3. **LED On (green)**
   It lights up together with the Logo when the device is started

4. **LED to signal a fault with the fuse (red)**
   The LED lights up when the device detects a load connected to the output and the fuse is disconnected.

5 CONNECTION AND INSTALLATION

5.1 Fixing the device to a wall

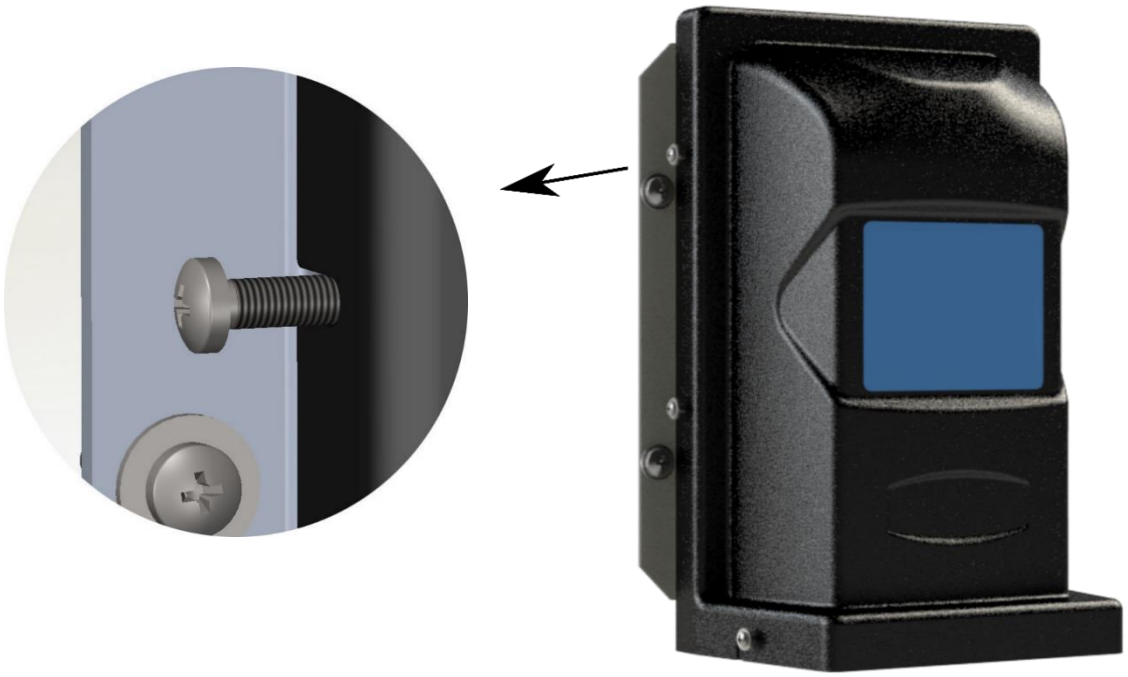
The device can be fixed to a wall or to a suitable support by means of screws:

NOTE
The screws are not supplied.

NOTE
At the back of the manual you will find the support drilling template and measurements of the distance between the fixing holes axes.

5.2 Hood opening

To remove the hood, all you need to do is loosen the 6 screws, which are on the sides of the hood itself, without removing them.



WARNING

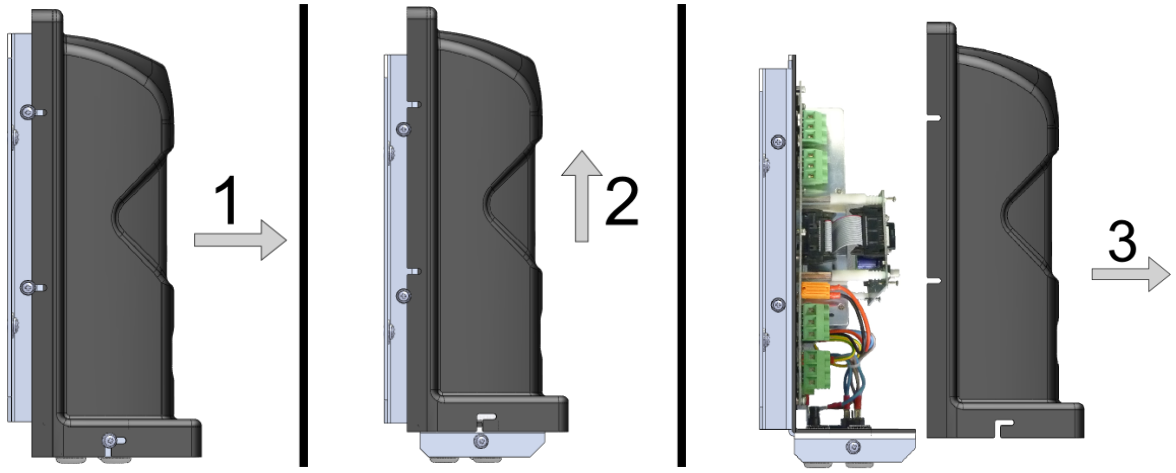
Before removing the cover, you are required to disconnect the device from electrical power network.

WARNING

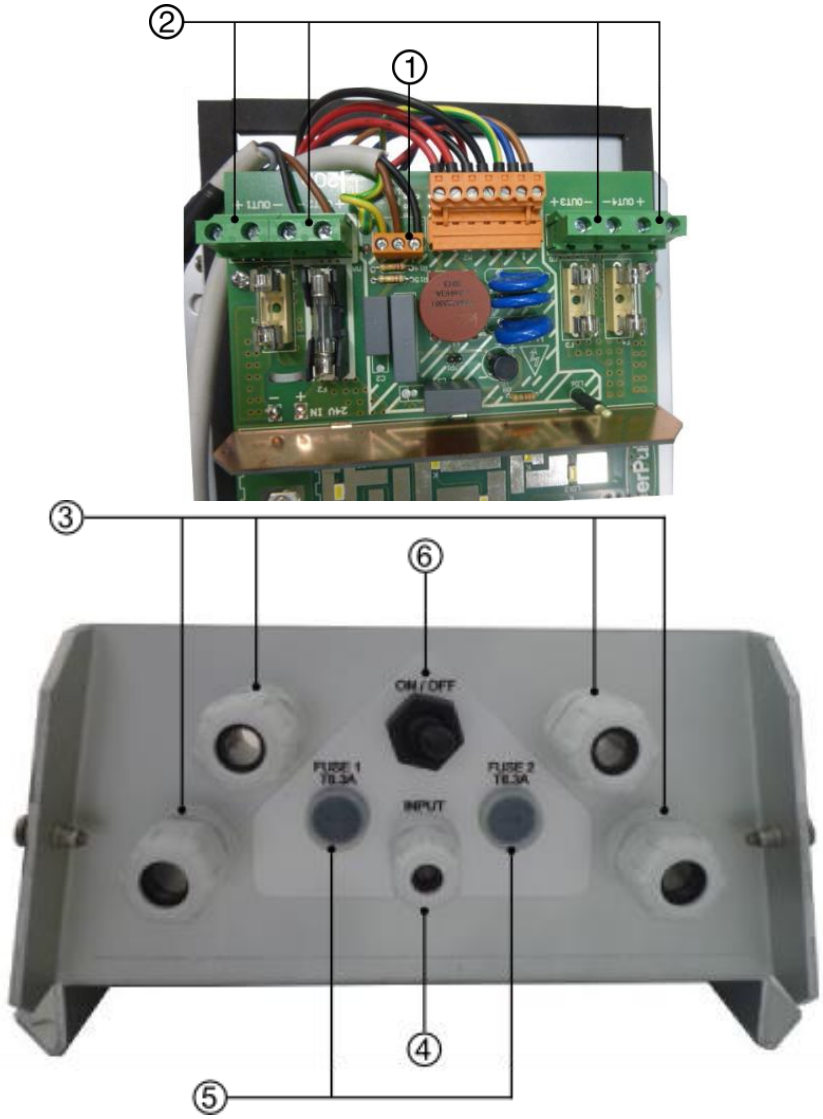
Do not completely undo the fixing screws from the hood. The screws are long enough for the hood to be removed without extracting them completely.

5.3 Hood removal

Remove the hood as indicated in the photo below, being careful not to knock the internal components of the control unit.



5.4 Control unit without the protective hood



1 – Power supply input

2 - Output channels

3 - Cable glands for output channels

4 - Cable gland for network channels

5 - Fuse blocks

6 – Switch

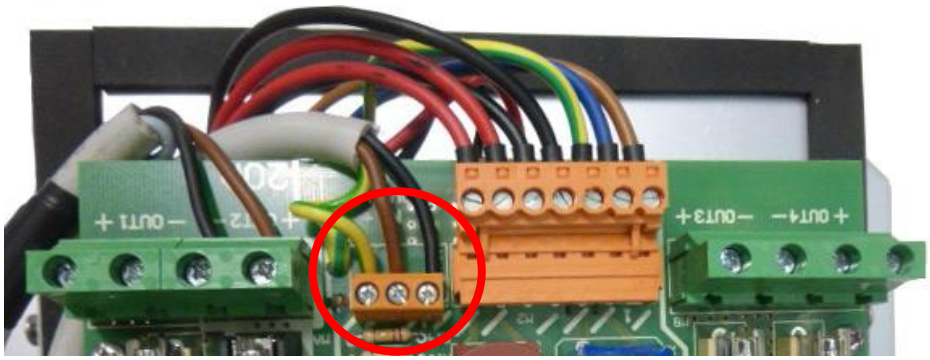
5.5 Electrical connections

You need to remove the device's hood to connect the power supply cable of the device and output cables to loads.

WARNING
Before removing the cover, you are required to disconnect the device from electrical power network.

5.5.1 Device power supply cable connection

Connect the electrical power supply network to the 3-pole orange-coloured connector, in compliance with the connection instructions reported here and present on the board:



WARNING
Keep the earth cable (green-yellow) always longer than the others

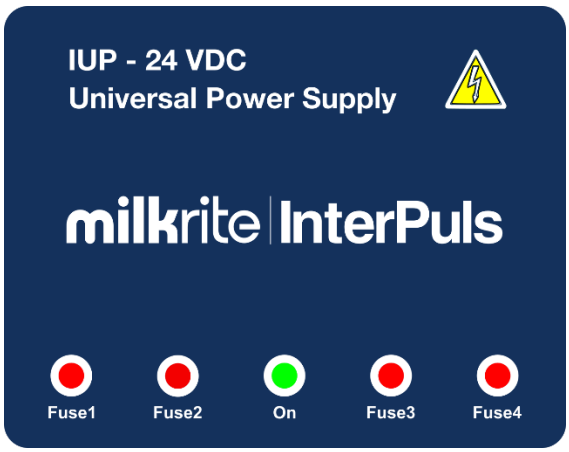
WARNING
The device must be connected to an electrical network that is compliant with current standards in force.
InterPuls does not guarantee proper operation of the device if it is connected to unstable voltage and frequency.

WARNING
Size the power supply cable by taking into account the current standards and absorption reported on the device's label.

5.5.2 Cable connection to the load with 4 separate outputs

The power supplied to the device is divided between the 4 available outputs. If the total load connected is divided in a symmetrical way, each output can supply a maximum current of 3.25A, with a total supply to the device of 13A.

Each output is protected by a fuse, and each fuse has a red LED to signal possible disconnection of the fuse.



WARNING
Ensure that the load connected to each output of the device does not exceed the maximum current supply of 3.25A.

5.5.3 Cable connection to the load using a single output

It is possible to take all power supplied by the device from a single output.

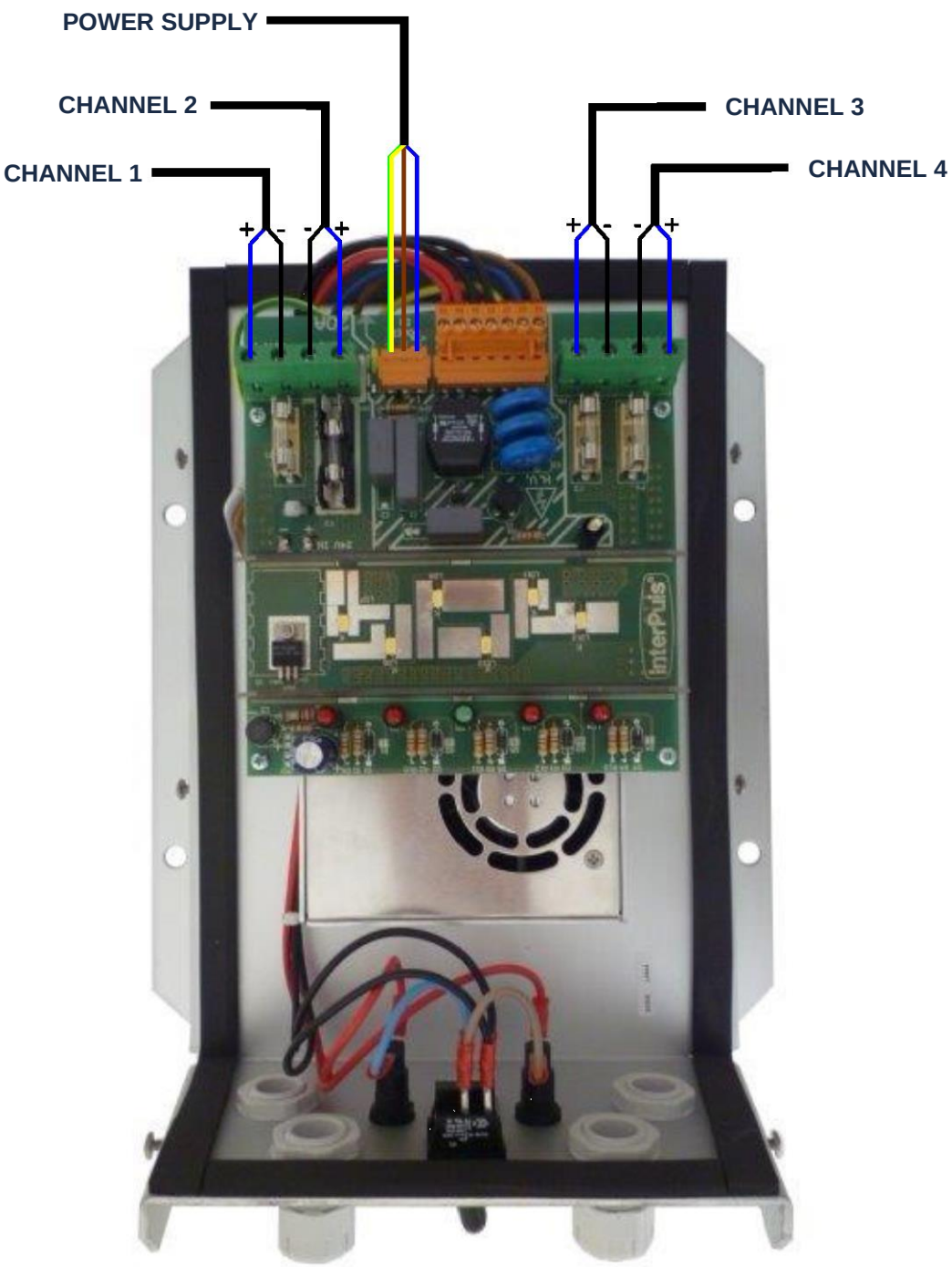
Output number 2 of the device is sized for this purpose and has a dual step fuse block, which is different from the others.

In order to take all the power supplied from output number 2, you are required to replace the relative fuse with a 15A fuse (32 mm step) (supplied in the package).

WARNING
Make sure that output number 2 has the correct type of fuse and all the other outputs are not used.

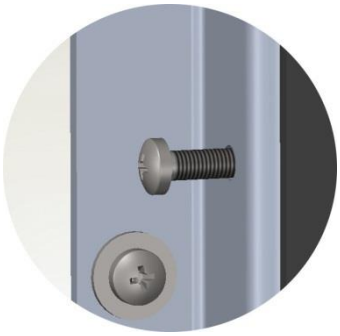
WARNING
Make sure that the load does not exceed the maximum current of 13A supplied by the device.

5.6 Diagram of general connection



5.7 Hood assembly

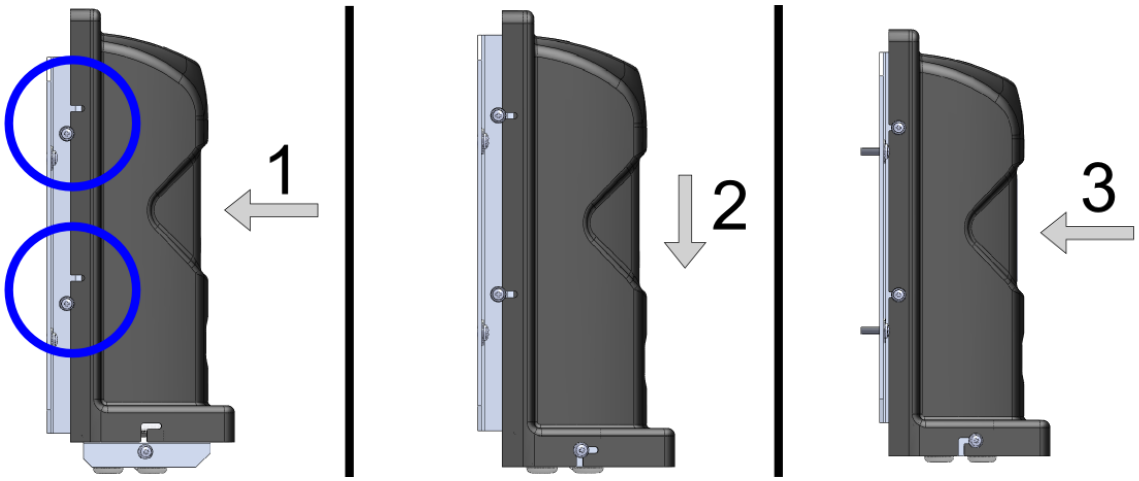
Check that the screws are adequately distanced from the support in order to enable the edge of the hood to pass easily.



Place the rear edge of the hood on the 4 screws placed in the rear part of the support, as shown, taking care not to knock the components and cables inside the control unit (1).

Slide the hood onto the rear screws until the screws at the base have entered their seats (2), and press the hood slightly so that the back screws also enter their seats (3).

Apply slight pressure on the hood and tighten the 6 fixing screws, making sure that the hood is properly fitted without tightening excessively.



6 GENERAL MAINTENANCE

We recommend service by a specialised technician on a yearly basis in order to check the state of electrical and mechanical components of the device.

7 DRILLING TEMPLATE