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toscano

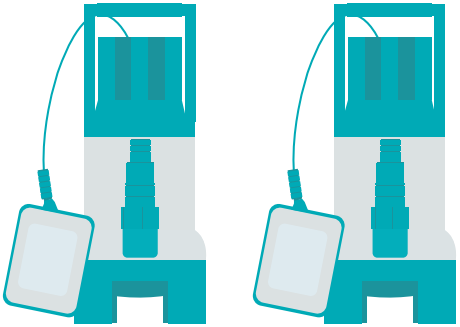
V2MB

Ed. 3.25



ENGLISH (EN) User Manual

Control and protection panel for 2 automatic pumps with built-in float switches.



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Installation has to be carried out by an electrician



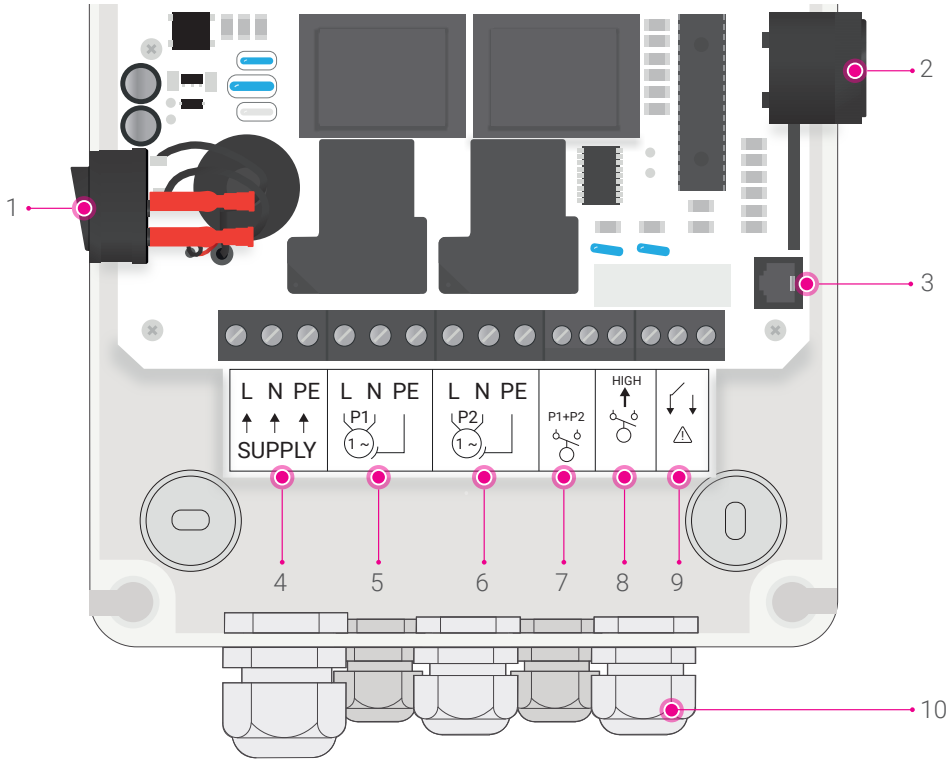
Both pumps used must be equal in terms of power and current, otherwise the overload setting (Imax) will not be performing its function correctly for one of the pumps.

SAFETY WARNING

CAUTION! We recommend to follow all procedure and safety instructions approved in your area operating with equipment connected to the electrical power supply. Important safety information is detailed hereafter. For safe installation and operation of this equipment, be sure to read and understand all cautions and warnings. ⚠ **WARNING:** Before installing, operating, servicing, or testing this equipment, read and understand the contents of this manual. Improper operation, handling, or maintenance could result in death, serious personal injury, and equipment damage. ⚠ **WARNING:** This equipment is not designed to safeguard human lives. Follow all locally approved safety procedures and practices installing or operating this equipment. Failure doing so could result in death, serious personal injury, and equipment damage. ⚠ **WARNING:** Dangerous voltages. Contact with electrical current will cause serious personal injury or death. Follow all locally approved safety procedures when working near high voltage lines and equipment ⚠ **WARNING:** This equipment requires periodic inspection and maintenance to ensure proper operation. If not properly maintained, it may fail to operate properly. Incorrect operation could cause damage to the equipment and possibly result in personal injury. ⚠ **WARNING:** All connections must be made by a qualified person in charge. There is a risk of electric shock if this warning is not heeded. ⚠ **WARNING:** Additional protection of the pump motor may be added when necessary in the installation. ⚠ **WARNING:** If the equipment is used or modified outside the manufacturer's specifications, Toscano disclaims all liability due to improper use. The interior of the equipment should only be handled by personnel of our technical service.

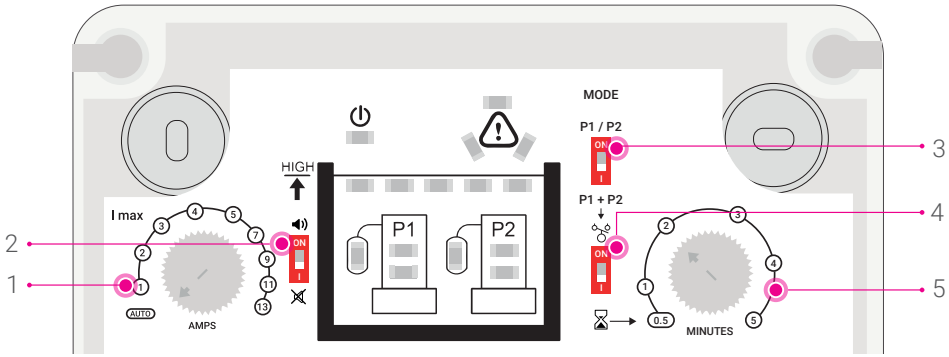
1. INTERNAL LAYOUT

Control and power elements



1. Reset/silence button
2. Buzzer 90 dB
3. Connector for communication accessories
4. Power connection terminal block
5. Motor 1 connection terminal block
6. Motor 2 connection terminal block
7. P1+P2 float connection terminal block (optional use)
8. High level float connection terminal block (recommended use)
9. Alarm output connection terminal block
10. Cable gland configuration: Power supply: 1xM20 / Motor: 2xM16 / Control: 2xM16

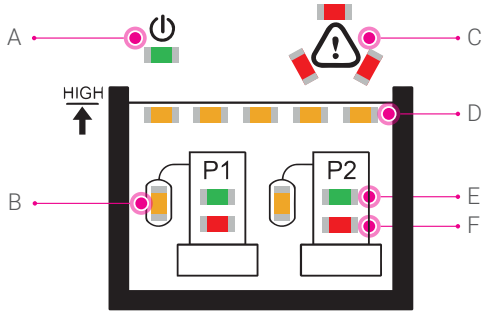
Adjustment and setting elements



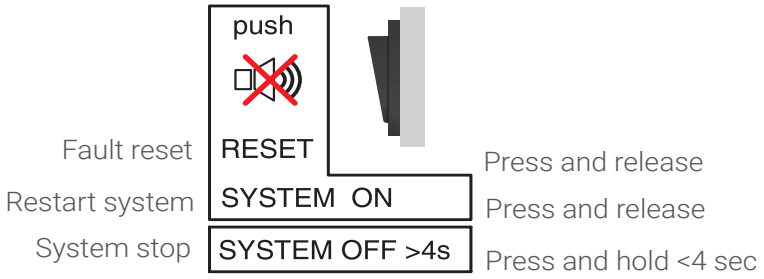
1. Overload setting (Imax command)
2. Buzzer override selector
3. Operation mode selector (P1/P2 or P1+P2)
4. Backup pump start mode selector (mode P1+P2: float or timing)
5. Backup pump start timing (*"minutes"* command)

Signalling lights

A. Supply ON
B. Float switch locked
C. General alarm
D. High level
E. Pump running
F. Thermal failure

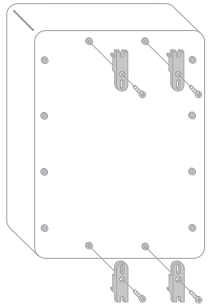


Side selector



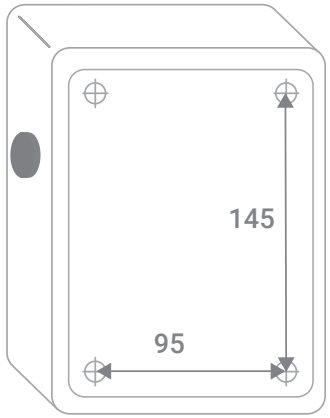
2. MOUNTING (WALL FIXING)

Clamping brackets mounting



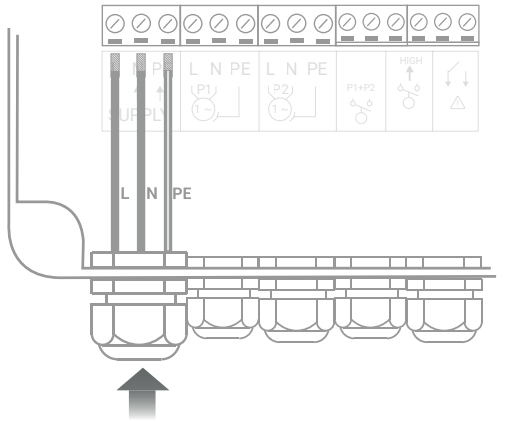
1. Place the fixing brackets in one of the anchoring points established for this purpose.
2. Drill the wall according to where you have placed the fixing brackets.
3. Insert the screws to anchor the equipment using the fixing brackets.

Direct wall mounting



Drill the wall to the indicated measurements (in mm) and screw the equipment directly.

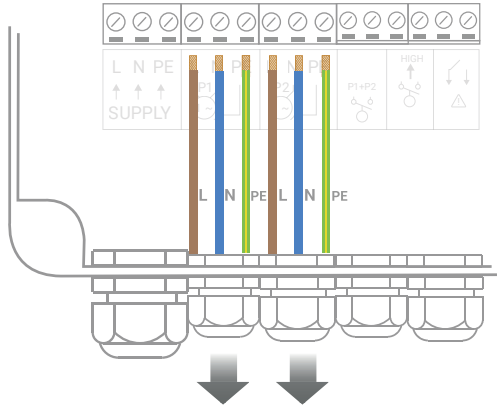
3. POWER CONNECTION



The power wires must come from a correctly sized circuit breaker.

4. MOTOR CONNECTION

This equipment is designed to work with two automatic pumps of the same power.
It accepts pumps with powers from 1/2 HP (0.37 kW) to 2 HP (1.5 kW).



Do not forget the connection of the protective earth wire (PE).

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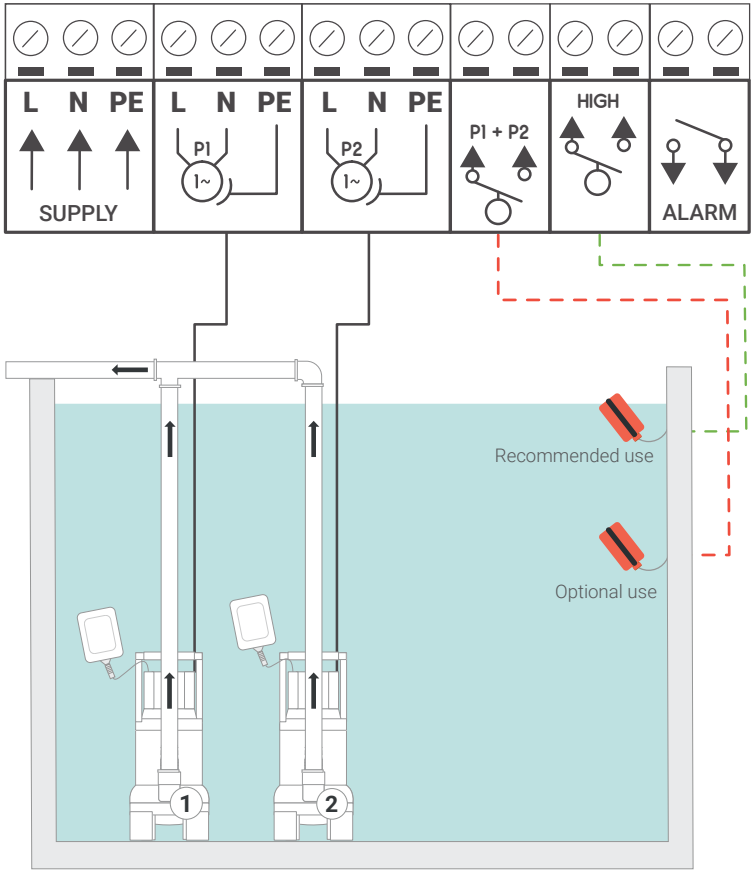
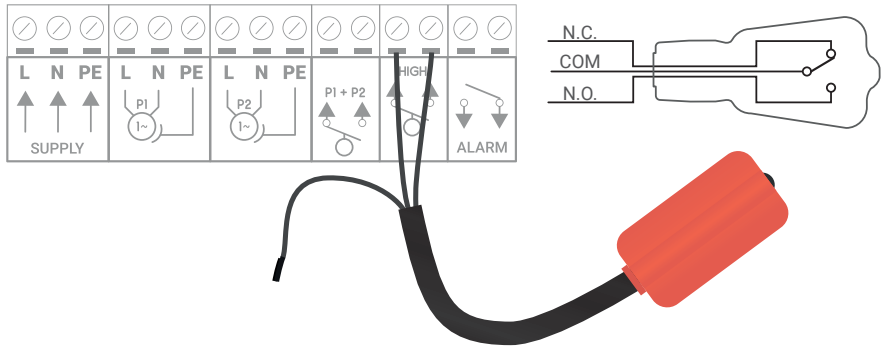
5. LEVEL CONTROL INPUTS



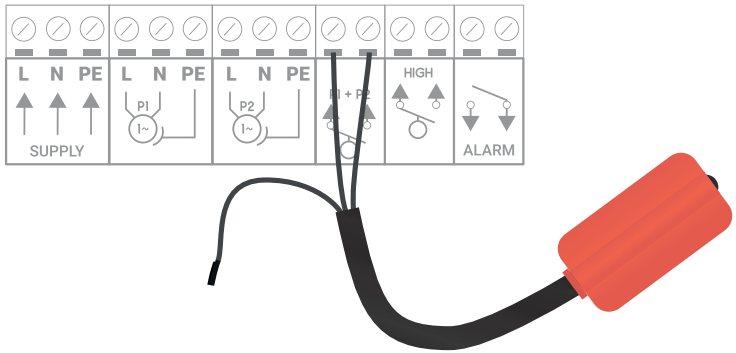
High level float (HIGH) (recommended use)



- Usual colours

As the float is raised, the contact between **COM** (common) and **N.C.** (normally closed) is closed. The **N.O.** (normally open) is intended for other applications (filling), thus, it must be insulated.

P1+P2 float (optional use)



- Usual colours

As the float is raised, the contact between **COM** (common) and **N.C.** (normally closed) is closed. The **N.O.** (normally open) is intended for other applications (filling), thus, it must be insulated.

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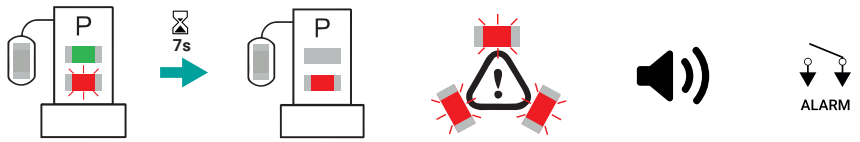
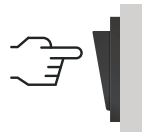
6. OVERLOAD SETTING (I.MAX)

Thermal protection of pumps

If the overload of a pump exceeds 15%, the pump's red light will flash. If this overload is maintained for 7 seconds, the thermal fault will be activated, causing the general alarm lights, the buzzer and the alarm output to also activate, stopping the pump, and also activating the general alarm lights, the buzzer and the alarm output.



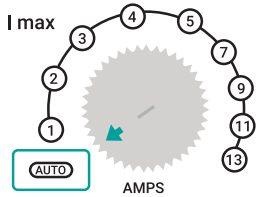


To reset the alarm press the side button

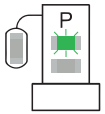
The adjustment of the thermal protection (Imax) is essential for a correct operation of the equipment.

Automatic calibration

Starts after the first start-up of the equipment. You need each pump to be running for at least 1 minute.

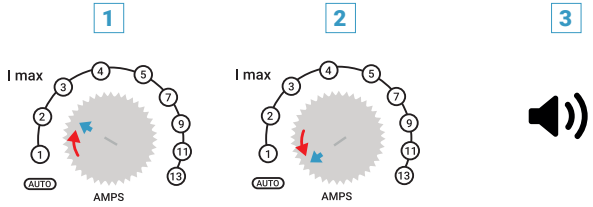


1. When raising the pump floats, only one of the pumps will be activated. The green light, which indicates that the pump is running, will flash indicating self-calibration.
2. After analysing the first pump, it will stop and the second will be activated to repeat the process.
3. At the end of the calibration, an acoustic signal for confirmation is emitted.



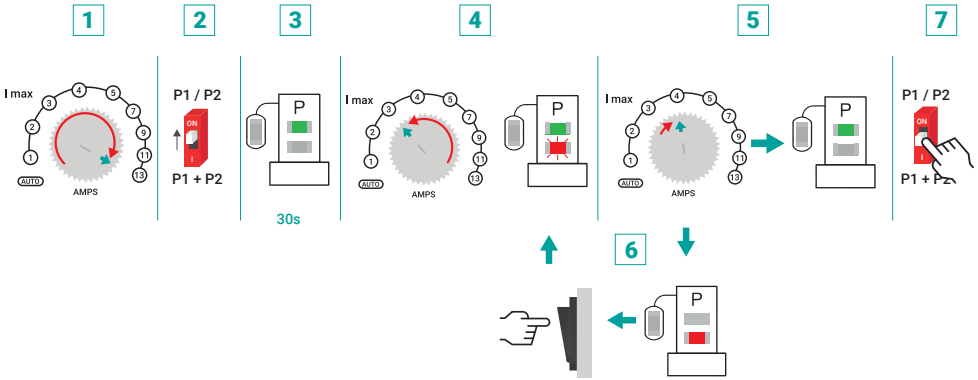
How to repeat the automatic calibration

1. Rotate the Imax knob slightly, taking it out of the Auto position.
2. Return the Imax knob to the Auto function.
3. You will hear an acoustic signal for confirmation.



Manual calibration (optional)

1. Set the Imax control to 13 A.
2. Select P1/P2 MODE so that the system works with only 1 pump. (see next page)
3. Wait at least 30 seconds with the pump running.
4. Turn the Imax knob slowly, reducing its value, until the red light flashes.
5. Now turn the Imax knob in the opposite direction, increasing the value, until the red light goes out.
6. If the red light stays on permanently (indicating thermal failure), press the reset button and repeat from point 5.
7. Set the MODE selector to the desired working position.



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7. OPERATION MODES

P1/P2 mode



In this mode only a maximum of one pump is activated (P1 or P2).

One pump is enough to get the job done. The second pump is activated in case of failure of the first, as a safety measure (“backup”).

P1+P2 mode



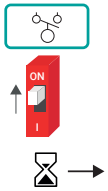
This operating mode allows the activation of the two pumps according to demand.

In periods of low demand, only one of the two pumps works.

During periods of high demand both pumps work.

Once in operation, the two pumps will work until their floats are deactivated.

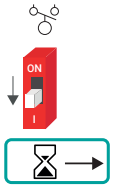
- Activation of the second pump by float (optional)



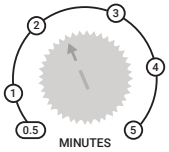
If P1+P2 aditional float is activated, the backup pump will start.



- Activation of the second pump by time



f the float switches of both pumps are activated, only P1 will start. P1 will remain ON for a certain adjustable time (from 0.5 to 5 minutes). Then, P2 will start as backup.





Buzzer override



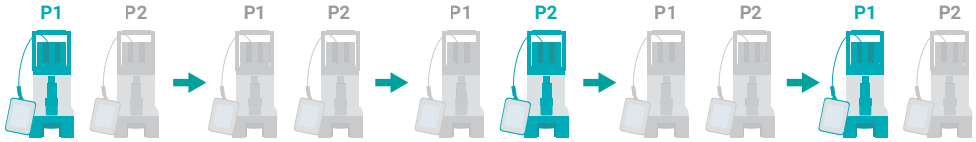
Set the selector to this position to completely override the buzzer.

As long as the buzzer is disabled, it will not sound under any circumstances.

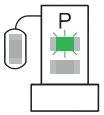
8. OTHER BUILT-IN FUNCTIONS

Alternating pumps

The order in which the pump works alternates for each operating cycle.

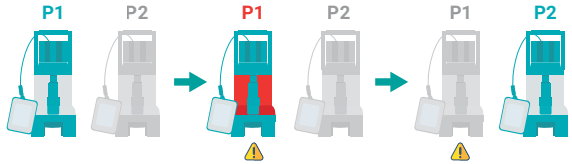


In the resting state, we will be able to identify the pump that will start next thanks to the flashes that its corresponding green light will emit.



Pump back-up

In the event that one of the pumps is working and stops due to thermal failure, the other pump will take over, starting instead.



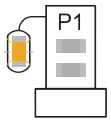
Long-term alternation

If a pump is in operation for more than 2 hours, the alternation is carried out and the second pump starts to let the first one rest.



Float failure detection

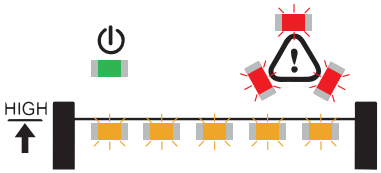
If the pump float becomes blocked and cannot rise, its fault light will come on. When the float returns to normal operation, the fault will automatically clear. This option will only work if an additional float switch is connected.



8. HIGH LEVEL FLOAT SWITCH (HIGH)

If the level rises too high and the HIGH alarm float is activated:

- The high level LEDs light up.
- The general alarm LEDs light up.
- The buzzer emits an acoustic signal.

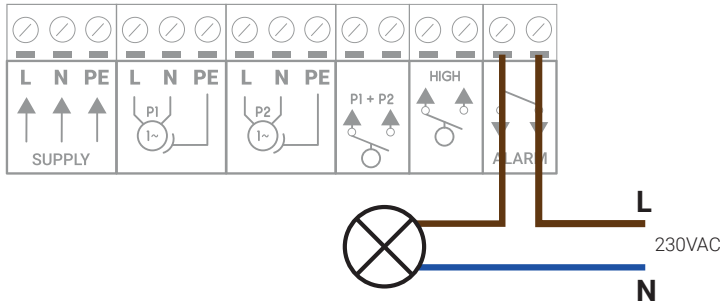


In P1+P2 mode, the HIGH alarm float activates the two pumps, which remain in operation until the tank is completely emptied.

Pressing the side reset button mutes the acoustic signal.



10. ALARM OUTPUT (OPTIONAL USE)



This output closes your contact in case of:

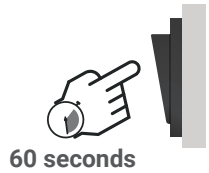
- Power failure.
- Thermal fault in one of the pumps.
- High level (HIGH float activated).

It can be used to activate an additional warning device (2 A / 250 VAC max.).

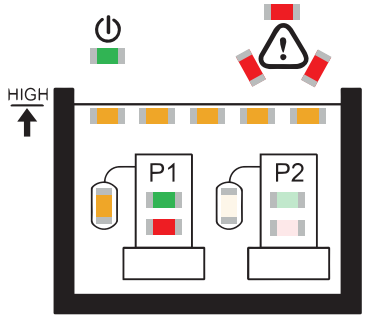
11. 1 PUMP MODE CONFIGURATION

V2MB is factory configured to operate with 2 pumps, P1 and P2, but it is possible to configure it to operate with only one pump (P1). See motor 1 connection terminal block.

To activate the 1 pump mode, turn on the unit and press and hold the side reset-mute button for more than 60 seconds.



After pressing the button for more than 60 seconds, the unit switches to 1-pump mode and restarts. The front lights referring to P2 will remain off when we are in 1-pump mode.



While we are in 1 pump mode, the operation of the equipment will be different from the usual operation:

- The P2 pump will never be activated.
- Calibration is the same, but only P1 is used.
- The modes P1/P2, P1+P2 by float or time do not work.
- Permutation by extended running time is not executed.

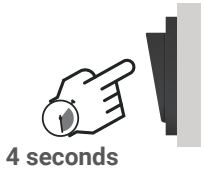
Return to mode 2 pumps

If in the future the installation is extended with a second pump of the same characteristics, we will be able to reconfigure it to operate with 2 pumps, as it came from the factory. To do this, repeat the same process as before, pressing the side reset-mute button for more than 60 seconds. The unit will restart and the 2-pump mode will be activated. Now the front lights referring to P2 will light up.

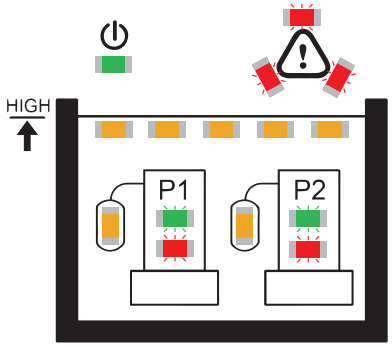
12. STANDBY MODE

This mode temporarily deactivates the pumps.

Press the side button for more than 4 seconds to activate the activate the sleep mode.



The alarm and pump LEDs flash when the appliance is in standby mode.



To cancel this mode, press the side button again again and release.



13. TECHNICAL CHARACTERISTICS

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Power supply	230 VAC, 50/60 Hz
Protections	Overload >15% (trip in 7s)
Signaling	Power, general alarm, pump running, thermal fault, float fault and high level
Buzzer	90 dB
Pump calibration	Automatic or manual from 1 to 12 A
Start-up timing of backup pump	Adjustable from 0.5 to 5 minutes (P1+P2 mode)
Voltage in floats	12 VDC
Alarm relay contact	2 A / 250 VAC max.
Cable gland configuration	Supply: 1xM20 / Motor: 2xM16 / Control: 2xM16
Working temperature	-10...+55ºC
Ingress degree	IP65
Dimensions	220x145x80 mm (height x width x depth)
Net weight	0.8 kg
Software	V.2.0

NOTES

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toscano

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