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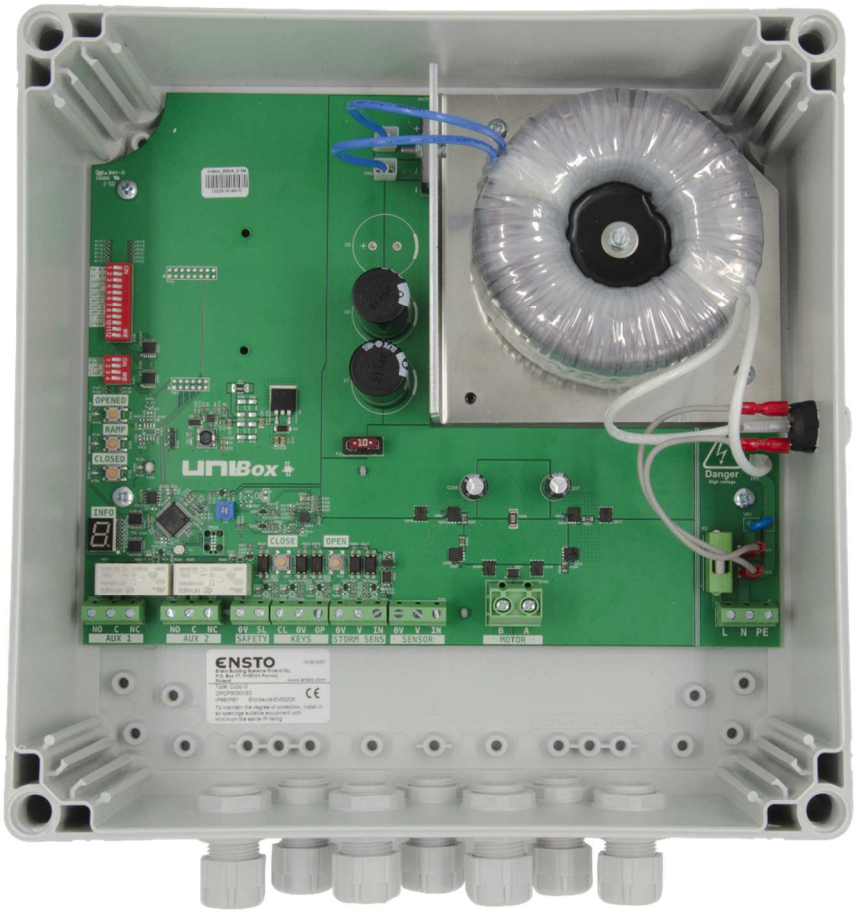
UNIBox 250VA / 450VA

CONTROL BOX FOR AUTOMATIC POOL COVER MOTORS



Installation and user's Guide

WARNING

FOR YOUR SAFETY - Installation of this product must be performed by an authorized and qualified pool equipment installer. Before installing this product, please read and follow all warnings and instructions provided with this product. Not following the warnings and instructions could result in property damage. Improper installation or use will void the warranty.

Improper installation or use may create an unwanted electrical hazard, which may result in property damage or personal injury.

Section 1. **Important safety instructions**

WARNING

The pool can be a serious danger to your children. A drowning happened very quickly. Children near a swimming pool demand your constant vigilance and active supervision, even if they know how to swim.
The physical presence of a responsible adult is essential when the pool is open.

WARNING

Check that there are no swimmers or foreign bodies in the pool before and during the usage of the cover.

WARNING

Keep the keys switch or remotes out of children's reach. Only a responsible adult should operate the mechanism.

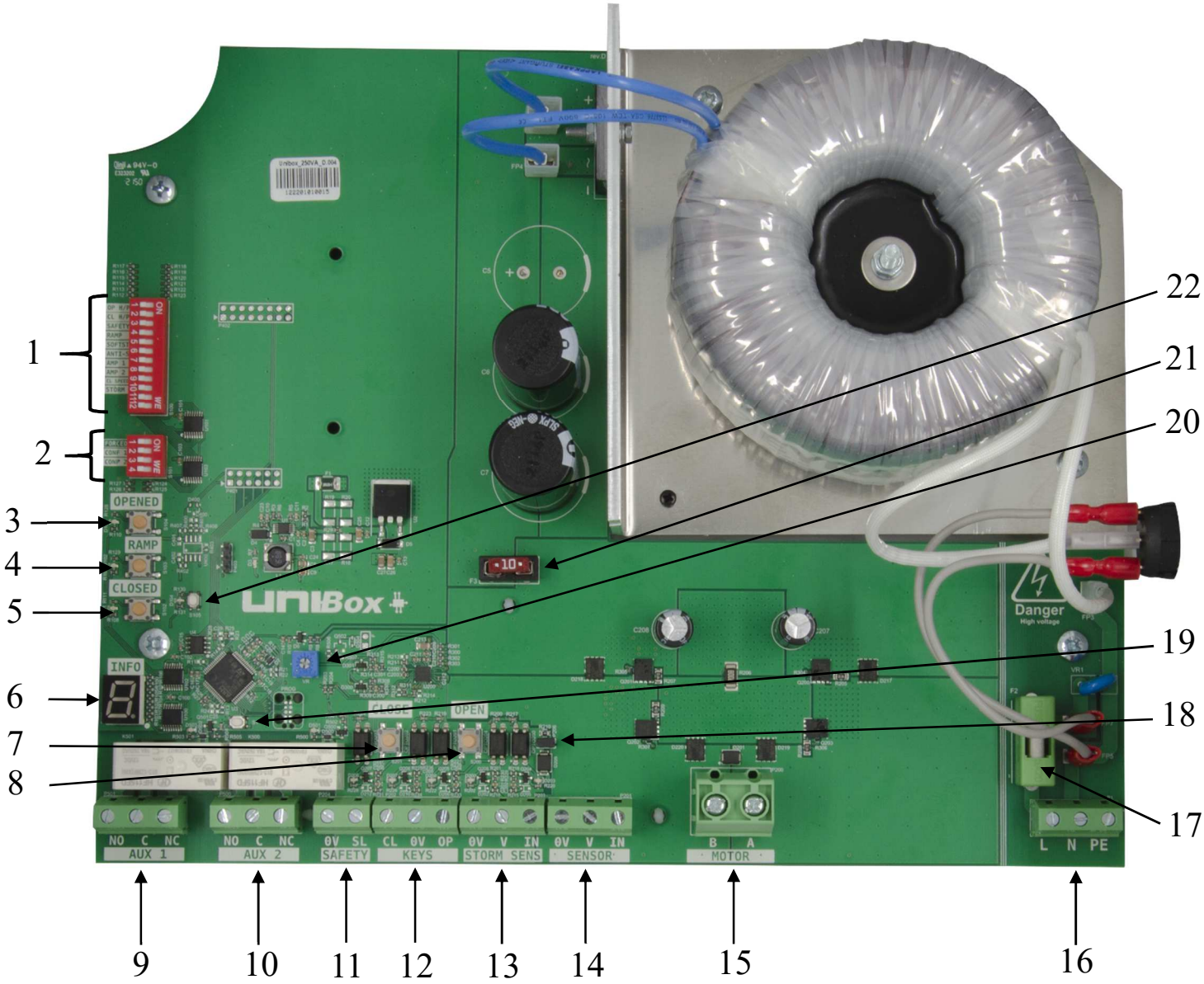
READ AND FOLLOW ALL GUIDELINES - KEEP THESE GUIDELINES

LEAFLET VERSION

DATE	VERSION	CHANGES
04/2022	01	UNIBox 250/450 V1
05/2022	02	New RESET procedure
06/2022	03	Sensor wiring for PL 7710
07/2023	04	Modifications on chapter 2.3
08/2023	05	Electromagnetic brake ; other functions

Section 2. **Technical data**

2.1 Board architecture and main components



1) Switches for configuring advanced functions.

2) Switches for FORCED mode and other board configuration.

3) Button to program the "open" limit switch position.

4) Button to program the end of the speed ramp when closing the pool.

5) Button to program the "closed" limit switch position.

6) Alarms display

7) Button to operate the motor in the "close" direction.

8) Button to operate the motor in the "open" direction.

9) Wiring terminal for auxiliary contact 1.

10) Wiring terminal for auxiliary contact 2.

11) Wiring terminal for the safety loop.

12) Wiring terminal for key switch or remote-control receiver.

13) Wiring terminal for the weather sensor.

14) Wiring terminal for the position sensor.

15) Wiring terminal for power supply to the motor.

16) Cabling terminal for mains 230VAC 50Hz.

17) Fuse of the alternating circuit (UNIBox 250: 4A timed, ceramic, cylindrical 5x20mm. UNIBox 450: 5A timed, ceramic, cylindrical 5x20mm).

18) Jumper for UNICUM motor with inductive sensor

19) Button to restart the electronic board

20) Trim to adjust the engine closing speed

21) Engine protection fuse (10A for UNIBox 250VA and 15A for UNIBox 450VA, 32V ATO mini 10.9 mm).

22) Button to activate programming mode for speed variation

2.2 Available advanced functions

- Impulse and / or maintained control in the both directions (configurable)
- Programmable soft start (speed ramp)
- Soft docking at the end of closing.
- Anti-snatching of the cover in case you forget to unlock the cover.
- Amperometric control (stop on obstacle) during the entire opening and closing process.
- Overload detection in case of motor deceleration in both directions.
- Safety loop (for water level sensor, emergency stop...)
- 2 Auxiliary relays (Electrolyser, filtration pump...)
- Display for easy installation and troubleshooting.
- Compatible with multiple sensor technologies
- Weather sensor
- Adjusting the closing speed

2.3 Technical specifications

CHARACTERISTICS	UNIBOX 250	UNIBOX 450	Unit
Supply voltage	230	230	V AC
Supply current	1,6	2,6	A
Frequency	50	50	Hz
Single-phase AC network	L/N/PE	L/N/PE	
Input power	360	580	W
Maximum power	250	450	VA
Voltage without load	30	30	V DC
Maximum current (fuse capacity)	10	15	A
Nominal voltage	24	24	V DC
Nominal current	8	13	A
Dimension (HxWxD)	300X300X135	300X300X135	mm
Weight	4,8	6,5	kg
Sealing	IP55	IP55	
Operating temperature	from 0 to 50	from 0 to 50	°C
Permissible humidity	from 0 to 85	from 0 to 85	%
Permissible altitude	up to 2000	up to 2000	m
Pollution degree	2	2	

Note: UNIBox 250: control box compatible with **PL3210, PL1218, DL3010, DL1318, UNISUB 300**, **UNIMOT Elec** engines.

UNIBox 450: control box compatible with **PL3218, PL6010, DL3018, DL6010, PL605, DL605, PL7710, DL7710**

Attention: PL 7710 are equipped of an inductive limit switch position sensor; wiring and configuration must be done as described at Chapter 3.6.2.

Attention : PL/DL 7710 are equipped of an electromagnetic brake needing a special configuration ; follow instructions at Chapter 3.10.

This product is compliant with standard EN 61800-5-1.

This product has been tested and certified in compliance with standard EN 61800-3 (CEM).

The board does not include a protection for motor overheating.

Section 3. **Installation**

WARNING

FOR YOUR SAFETY – The installation of this product must be carried out by an authorized and qualified technician according to NF-C 18-510 or EN 50110-1.

Definition of qualified personnel according to the NF C 18-510 standard: "person with appropriate training, knowledge and experience in electricity to enable him/her to analyse the electrical risk and avoid the dangers that electricity can present".

3.1 Installation of the box

The installation must be carried out in accordance with the electrical standards in force in the country of installation; in France according to standard NF-C 15-100 (part 7-702), in Europe according to standard HD 384-7-702 or equivalent according to local regulations.

The box must be installed in a frost-free technical room, away from rain, sun, any heat source and any risk of spraying or immersion.

It should be installed level, ideally between 1.2 and 1.5 metres from the floor, vertically, with the cable glands downwards, and on a sufficiently solid, flat and smooth wall to withstand the weight of the box.

Fixing the box:

1. Mark the (4) positions of the outer holes at the gasket on the mounting surface.

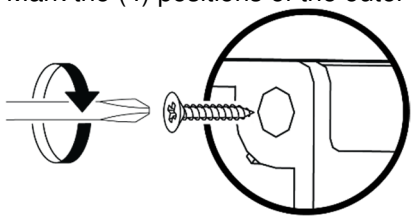


Fig.1 – Position of external holes

WARNING: Failure to comply with this attachment method may result in the warranty being voided.

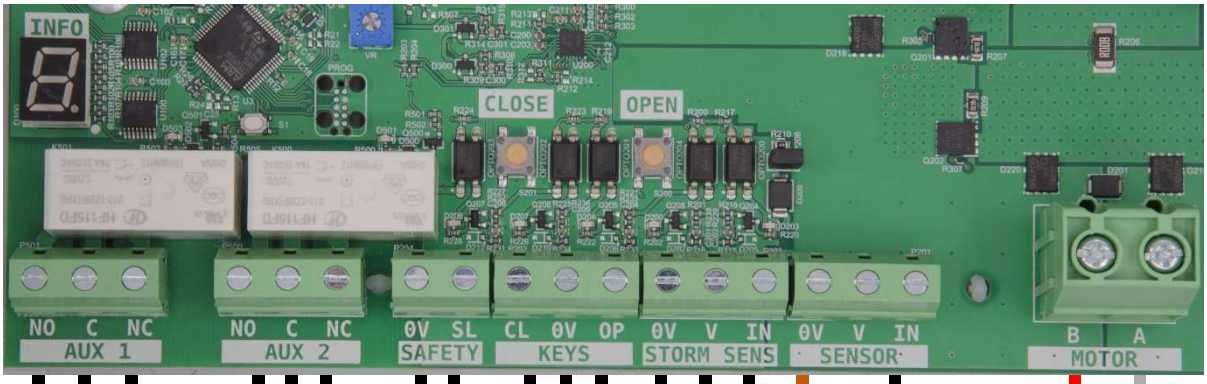
2. Drill four (4) holes in the mounting surface using the provided drill template.
3. Push four (4) pegs firmly into the holes.
4. Screw the enclosure onto the mounting surface

The lid is closed by screwing the 4 plastic screws of the lid in the 4 corners of the base of the box (if the box is removed, remove these 4 plastic screws using a screwdriver).

3.2 Electrical connections

WARNING

All connections must be done with the power turned off.



Auxiliary 1 (Info closed position)

Auxiliary 2 (Engine in Motion)

Safety Loop

Key switch

Weather sensor

Sensor

Motor

Mains 230V AC

NOTE : This wiring schema is applicable to UNICUM motors equipped of a mechanical position sensor. For the wiring of other sensor technologies (inductive, Hall, etc.) please check chapter 3.6.

WARNING

FOR YOUR SAFETY – Connections are to be made by a QUALIFIED and AUTHORIZED person. Electrical connections must comply with the C15-100 standard in France or the HD 384-7-702 standard in Europe.

3.3 General

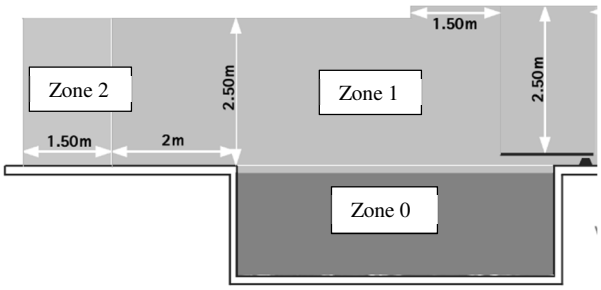
Check the cables for defects.

Cables must be protected so that they cannot be torn off or crushed.

The green/yellow wire may only be used for an earth connection in compliance with electrical standards.

Do not forget to tighten the cable glands after the cables have been routed to ensure that the enclosure is watertight.

NOTE: Submerged cables cannot be repaired or connected in zone 0.



3.4 Sector 230VAC single phase:

An electrical separation device must be installed upstream of the enclosure. It must be easily accessible, identifiable and lockable in the open position. This device may be of the "switch-disconnector" type with a current rating of at least 6A or any other system that can be disconnected for optimum safety and in compliance with current regulations.

Note 1: the installer must ensure that this device is chosen according to external constraints: humidity level (IP65), etc.

Note 2: The power supply of the unit must be protected according to the ground connection diagram in compliance with the legislation of the installation site.

Note 3: for a TT operation, the circuit must be protected upstream by a bipolar circuit breaker with a high sensitivity differential 30mA, intensity 6A and trigger curve type C.

Use a 2-wire + ground 2.5 mm2 cable, type H07 VV-F.

Pass the cable through the cable gland provided for this purpose.

3.5 3-position key switch with center return: (2 NO contacts)

Use a 3-wire cable of 1.5 mm2, type H07 VV-F.

Connect the switch to the KEY SWITCH terminal block provided for this purpose on the electronic board.

Respect the "CL" (Closing) and "OP" (Opening) markings indicated on the electronic board and on the switch.

Wire the common switch to the " 0V " indicated on the electronic board

Pass the cable through the provided cable gland.

3.6 Sensor:

Use a cable with 1 mm^2 wires - type H07VV-F

Respect the colors of the wires according to the screen-printed values on the electronic board at the terminal block "SENSOR" and the sensor wires coming out of the motor.

In all cases, in order to wire the sensor, the cable must be passed through the cable gland provided for this purpose.

Functional test:
The green LED above the connection terminal returns the sensor signal:

- ✓ Engine stopped: LED off or on.
- ✓ Motor running with proper sensor operation: LED with regular flashing.

3.6.1 Mechanical sensor:

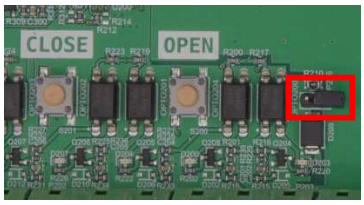
Our current range of motors are equipped with mechanical sensors. If your motor is equipped with mechanical sensors, please apply the following connection;

Printing	Wire color
0V	Brown
V	
IN	Black

3.6.2 PNP inductive sensor (standard for older UNICUM motors):

The UNIBox 250/450 box can be used to replace old Unicum boxes; in this case it will be necessary to check whether the motor installed in the winding tube was equipped with a three-wire inductive sensor. In this case, in addition to connecting cables as shown below, it is necessary to close the bridge by connecting the two pins on the P205 connector on the board, using the jumper (see photo and chapter 2.1 point 18).

Printing	Wire color
0V	Blue
V	Brown
IN	Black



3.6.3 NPN inductive sensor:

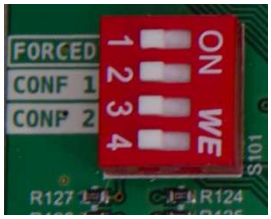
The UNIBox box can be used to control inductive sensors of the NPN type; in this case it will be necessary to connect the cables according to the diagram below.

Screen printing	Wire
0V	Neutral
V	12V power supply
IN	Sensor signal

3.6.3 Hall Effect Sensor:

The UNIBox box can be used to control Hall effect sensors; in this case it will be necessary to connect the cables according to the diagram below. It will then be necessary to put the dip-switch "CONF1" of the Configuration block (chapter 2.1 point 2) and restart the board.

Screen printing	Wire
0V	Neutral
V	12V power supply
IN	Sensor signal



This sensor is used in the following motors: UNIMOT Elec, DL7710 INOX and other motors for pool moving floors.

3.6.4 Other sensor technologies :

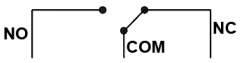
UNIBOX controller can be programmed to manage other position sensor technologies. Please contact the sales department to confirm project feasibility.

3.7 Auxiliary relays:

3.7.1 Auxiliary 1

(To activate an electrolysis system or other)

Dry contact 3A 30VDC, with common (COM) and contacts rest (NC) / work (NO).



AUXILIARY REL.

Auxiliary relay status:

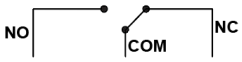
Auxiliary 1: Closed position info:

To the 1: UNIBox	NO	NC
Opened position	0	1
Motor closing	0	1
Motor not moving between limit positions	0	1
Motor opening	0	1
Closed position	1	0

3.7.2 Auxiliary 2

(To deactivate a filtration pump…)

Dry contact 3A 30VDC, with common (COM) and contacts rest (NC) / work (NO).



AUXILIARY REL.

Status of the auxiliary relay:

Auxiliary 2: information given when the motor is in motion:

To the 2: UNIBox	NO	NC
Opened position	0	1
Motor closing	1	0
Motor not moving between limit positions	0	1
Motor opening	1	0
Closed position	0	1

3.8 Safety Loop:

This terminal allows the serial connection of one or more devices that prevent the operation of the cover, under certain circumstances such as a water level sensor being activated, an emergency stop, etc...

The cut-off device shall be fitted with a closed contact at rest which, once activated, shall open the safety loop stopping the engine, and preventing it from working. To be connected to the SECURITY terminal block.

This option is activated by setting the microswitch - **3** labelled “SECURITY” **to** "**ON**".

3.9 Motor:

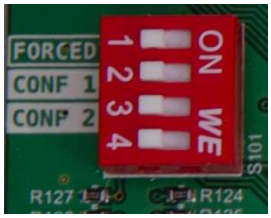
Wiring in cable 2 wires type HO7 RN-F, section up to 10mm² flexible according to the distance between the box and the motor.

Identification of the wire colors of the motor cable: red and gray wires.

Connection on the MOTOR terminal block.

Pass the cable through the provided cable gland.

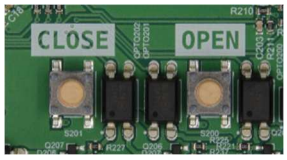
3.10 Electromagnetic brake configuration :



Most of UNICUM motors are equipped with a patented permanent magnet brake (CPS – Constant Positioning System) which UNIBOX manages correctly by default. On the other hand, a lot of pool cover motors are equipped of an electromagnetic brake. Managing this brake technology on UNIBOX is possible by activating dip-switch « CONF 2 » and restarting the board.

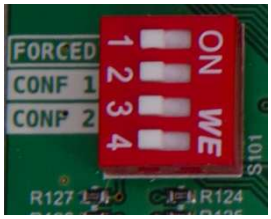
UNICUM motors equipped of this brake type are the following: PL and DL 7710

3.11 After complete wiring:



Check the direction of movement of the cover according to the switch positions.

Check that the direction of movement of the cover when activating the "Open" command of the key switch is consistent with the direction of movement when pushing the "Open" button on the board. The same applies to the opposite direction, when closing the pool.



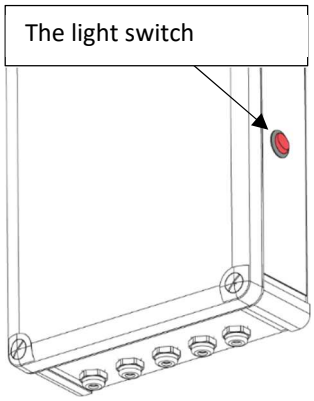
To perform this control, use the FORCED mode by activating/deactivating the "FORCED" dip-switch as described in chapters 4.1 and 4.2.

This operation is of great importance and must be extended to any possible control device, such as remote controls, smartphone receivers, etc.

If the direction of movement of the cover is wrong, and if the switch wiring is correct, reverse the motor wires.

Section 4. Operation of the control box

4.1 General:



Power is switched on using the illuminated switch on the side of the cabinet.

As soon as the power is switched on, the switch lights up. You can check the initialisation of the electronic board on the INFO display for a few seconds.

The electronic box has been designed for operation for a maximum of **10 minutes of** continuous use. Beyond this time, there should be a 30-minute interval between manoeuvres. In the event of overheating of certain components, the board goes into self-protection mode and stops supplying power to the motor until the temperature returns to a useable level.

The operating range of the electronics box is between 0°C and 50°C max.

Three operating modes are available and must be familiar to the installer.

AUTOMATIC MODE: this is the normal mode when all programming has been done correctly. Advanced functions can be enabled and alarms are active.

FORCED MODE: this is the preferred mode for maintenance operations. Once in forced mode all configurations (limit switches, measured current levels, etc.) are overridden and therefore the operator uses the motor without limit switches. This mode must therefore be used with great care. It can also be used in case of sensor failure.

PROGRAMMING MODE: this is the mode that allows the operator to save the basic parameters for using the card in AUTOMATIC mode. PROGRAMMING mode is entered when the limit switches and the end of the speed ramp have to be configured. In this mode the advanced functions are not active as well for some of the alarms.

NOTE: To activate the advanced functions, once the corresponding switch has been switched on, **the board must always be restarted** using the power switch or the white reset button available on the board (see chapter 2.1 point 19). This operation requires the parameters and active functions to be re-read.

4.2 Programming mode (to be used only by qualified personnel)

This mode allows you to program the distance to be covered by the pool cover by setting the end positions (full open or full close).

4.2.1 Programming the end positions

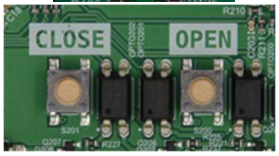
WARNING

The programming of the end of the race must be done with total visibility on the pool.

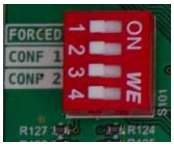
NEVER USE REMOTE CONTROLS OR RADIO SETS TO PROGRAM THE END POSITIONS. The procedure must be executed with the key command or with the "OPEN" and "CLOSE" buttons on the card.

Put the card in FORCED mode using the "FORCED" switch and setting it to "ON".

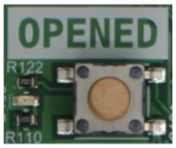
1. Use the OPEN and CLOSE buttons or the key switch to check that the motor wiring is correct; if not, switch off the box and change the wiring.



2. When finished, return the "FORCED" switch to the "OFF" position.



3. Push and hold the "OPENED" button until the green LED next to it lights up. You have now entered the programming mode for the "open" limit switch.



4. Put the cover in rolled up position (fully open).

5. Wait at least 5 seconds and then press the "OPENED" push button - The green LED turns off and the position is recorded.

6. Push and hold the "CLOSED" button until the green LED next to it lights up. You have now entered the programming mode for the "closed" limit switch.

7. Place the cover in the unrolled position (fully closed). Beforehand make sure that nothing and nobody is using the pool.

8. Wait at least 5 seconds and then press the "CLOSED" push button - The green LED turns off and the position is recorded.

Now the end positions are programmed and the card operates in "AUTOMATIC" mode.

4.2.2 Limit switch position modification

In the event that an adjustment of a single limit position is required, the user can do so without reprogramming the other one. The user is able to enter into the programming mode of the particular limit position to modify it according to the procedure in the previous paragraph. The impact of this change on the other functions must be carefully evaluated; for example, the modification of a limit switch requires the complete reprogramming of the "amperometric control"

function if it is active. If, on the other hand, if the speed ramp is active, care must be taken to ensure that the new position of the limit switch does not exceed the programmed ramp end point. In this case the card will generate alarms to notify the error.

4.3 Automatic Mode

This mode allows the cover to be opened and closed in normal use, with automatic stop at the end positions.

The cover is opened or closed by different control devices (switch, wall remote control, remote control, etc.).

The cover is automatically stopped at the end positions which have been previously programmed (see programming mode).

You will not be able to choose the direction of movement of the cover when it is located at one end since one of the directions becomes momentarily invalid: the closing direction does not work in the fully closed position of the cover. Same for the opening direction; it does not work in the fully open position (use manual mode to move beyond the programmed distance if necessary).

All alarms are activated as well as the advanced functions selected by the user.

4.4 INFO display

The INFO display visualizes any alarms that allow the operator to detect and correct anomalies.

In the event that two alarms are present at the same time, the display will show them one after the other in cycle.

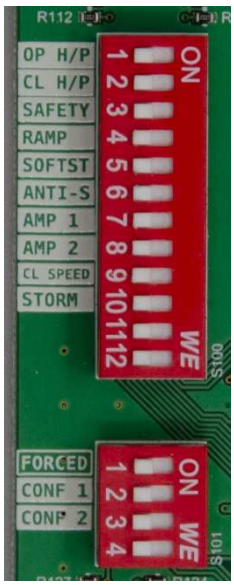
The acknowledgment of alarms is done using the motor control device (key contact, remote control or physical buttons); by operating the device twice in the same direction the alarm will be acknowledged and the engine can then be restarted. The list of alarms is as follows:

0	**Fixed**	Error starting card.
1	**Fixed**	Error programming the end positions.
2	**Fixed**	The engine is not wired.
3	**Fixed**	Faulty sensor.
4	**Fixed**	Fuse melted.
5	**Fixed**	Current threshold exceeded (“amperometric control" function active).
6	**Fixed**	Active alarm on the security loop.
7	**Fixed**	Activated anti-snatching alarm; check the straps.
8	**Fixed**	Overloaded motor
9	**Fixed**	Weather sensor alarm
A	**Fixed**	Acquisition of the current level during closing phase requested (amperometric control programming.)
b	**Fixed**	Acquisition of the current level during opening phase requested (amperometric control programming.
b	**Fixed**	Completed current acquisition without errors; amperometric control function active.
C	**Fixed**	Error during current acquisition; the amperometric control function has to be reprogrammed.
d	**Fixed**	Possible major fault on motor driver.

For advice on the management of these alarms see chapter 5.1.

4.5 Advanced functions

The advanced functions are accessible from a 12-switch block that allows selection and activation. Here is a list of the switches, their labels and functions:



1 - "OP H/P": Opening in Man Present (OFF) or impulse (ON)

2 - "CL H/P": Closing in Man Present (OFF) or impulse (ON)

3 - "SAFETY": Safety loop inactive (OFF) or active (ON)

4 - "RAMP": Closing speed ramp disabled (OFF) or enabled (ON)

5 - "SOFTST": Slow docking disabled (OFF) or enabled (ON)

6 - "ANTI-S": Anti-snatching disabled (OFF) or enabled (ON)

7 - "AMP 1": Amperometric control see next chapter →4.5.2

8 - "AMP 2": Amperometric control see next chapter →4.5.2

9 - "CL SPEED": Modification of the speed in closing → see chapter 4.5.3

10 - "STORM": Weather sensor disabled (OFF) or on (ON)

<u>These functions can only be activated after the end positions have been set correctly.</u>

<u>IMPORTANT NOTE</u>: To activate any configuration changes, it is necessary to completely restart the card. This can be done:

- Using the white reset button (Chapter 2.1, point 19)
- By powering the card off and on again

4.5.1 « Man present » or « Pulse » Mode

Dip-switch 1 and 2 allow activating command pulse mode respectively on pool open and on close actions. By default, this function is disabled (« Man present mode) so the cover will stop immediately if the user stops giving the command. If on the contrary pulse mode is active, a simple command will be enough to completely open or close the cover automatically. If user wants to stop the motor while cover is moving, he'll have to give a command in the opposite direction.

CAUTION: activating switch 2 in the ON position permanently makes the cover NON-COMPLIANT WITH THE SAFETY STANDARD NF P90-308. It is therefore prohibited in France and strongly discouraged as a general rule. The activation of this function entails the **direct responsibility of the user**.

4.5.2 Programming the speed ramp

The speed ramp slows down the motor in the first phase closing. In the case of a submerged motor, Archimedes' thrust tends to accelerate the motor significantly.
Once the function has been enabled using switch 4 as explained in the previous chapter, the operator must teach the board the point at which the motor will reach its maximum speed.

- Open the pool completely.

- Activate dip switch number 4.
- Restart the board.
- Push and hold the "RAMP" button until the green LED next to it lights up. You have now entered the programming mode for the end position of the speed ramp.
- Close the cover untill the position where you want the motor to run at normal speed.
- Press the "RAMP" pushbutton again - the green LED turns off and the position is saved.

NOTE : Do not use speed ramp function on PL and DL7710 because their speed is already slow enough (about 2 rpm).

4.5.3 Soft docking

This function slows down the motor when the cover is approaching its « closed » limit switch position.
The function is activated by moving the dip-switch 5 to ON and restarting the board.

4.5.4 Anti-snatching

This function is specifically designed for slatted covers equipped with some security device (snatches, straps, etc) to connect the last lamella to pool wall. On these covers, if user forgets to release this security system before opening the cover, motor could tear out protections or damage the cover. In such a case Anti-snatching function allows stopping the motor automatically as soon as a certain current threshold is passed. Dans ce cas la fonction permet d'arrêter le moteur automatiquement lorsqu'un certain seuil de courant est dépassé.
The function is activated by moving the dip-switch 5 to ON and restarting the board.

NOTE: « Anti-snatching » function is not compatible with « Amperometric control » function which is described in the next chapter. Only one between these two functions can be activated.

4.5.5 Amperometric control (stop on obstacle)

Amperometric control triggers a current threshold alarm and shuts down the engine if an anomaly or blockage occurs during the opening or closing of the basin.

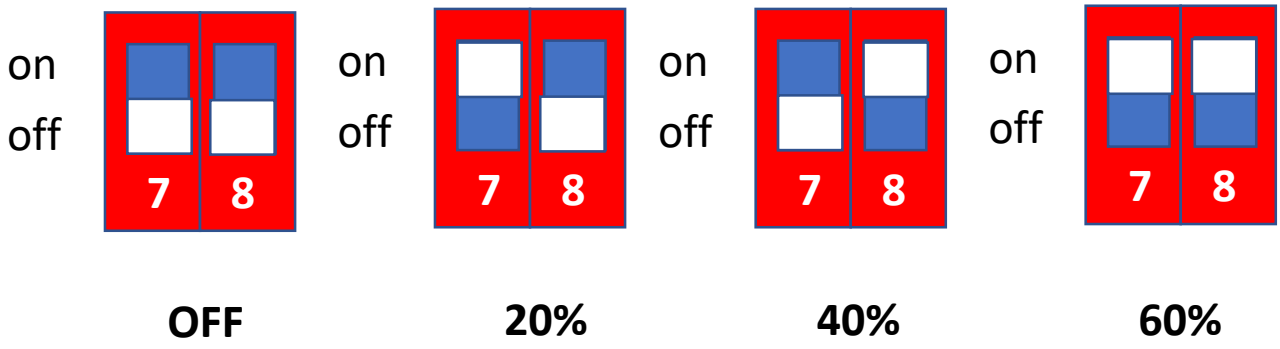
To ensure that the function activates correctly, it is necessary to execute a procedure for learning current values; this acquisition must be made in both directions of the motor because, for submerged engines, the load is very different between opening or closing.

Note: Amperometric control must be enabled at last. If other functions are subsequently modified, it will be necessary to always reprogram the amperometric control.

It will therefore be necessary to perform the following procedure

- Open the pool completely
- Switch on dip 1 and 2 ~~on on~~ to temporarily activate the impulse mode.
- Select the correct current threshold for triggering the alarm using switches 7 and 8 (see figure at the end of this procedure)
- Restart the board
- Check that on the "INFO" display appears the notification "A"; this means that the feature has been enabled but the initial acquisition is required to complete the configuration.
- Check that nothing or no one is in the water; completely close the basin with the control without interrupting or disturbing the movement of the engine. An upside-down "A" is displayed on the INFO to request current acquisition on opposite direction.
- Completely reopen the basin with the control without interrupting or disturbing the movement of the engine.
- If the acquisition went smoothly, the "INFO" display will show the "b" notification which means that the function is now active; if, on the other hand, the data is incomplete or the procedure has been interrupted, the display will show the notification "C".
- If the "C" alarm is active, the operator will have to put switches 7 and 8 back on OFF and restart the board so as to cancel the programming. He can then resume the procedure of the beginning to make a second try.
- Do not forget to reposition switches 1 and 2 in their original configuration once the activation of amperometric control is complete.

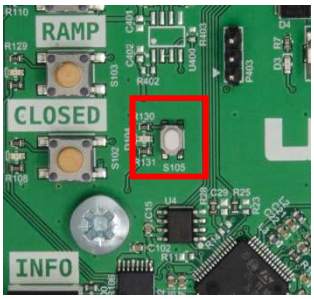
Configuration of threshold values by dip-switches 7 and 8.



4.5.6 Programming closing speed

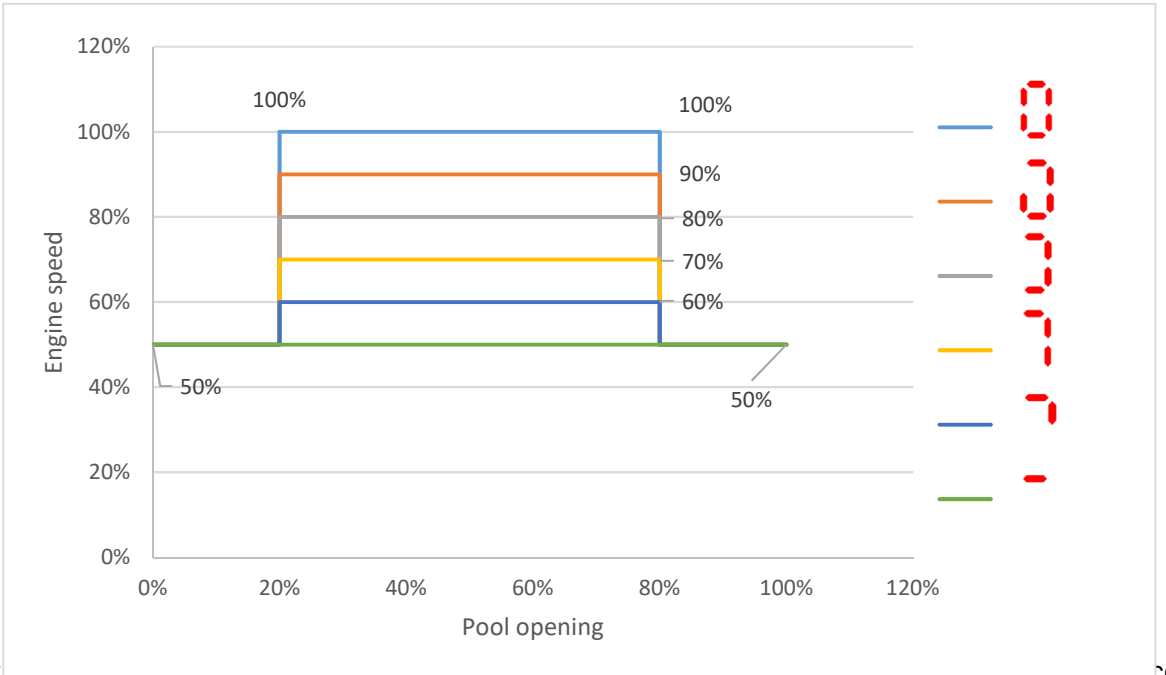
This function allows using Unicum 8rpm motors on a slatted cover.
Indeed, in this case the linear speed provided by these motors can be excessive during the closing phase, when the cover is pushed forward. In case the first slat dives underwater, it could damage then complete cover.
It is therefore necessary to limit the speed during pool closing phase.

This function allows you to change the speed in the time interval between the end of a possible initial ramp and the beginning of the soft docking.



To enable and adjust the feature follow these steps:

- Put dip-switch 9 of the advanced functions block to ON
- Restart the card
- Push the S105 button and keep the pressure until a led next to the button lights up; we are now in programming mode.
- Turn trim VR (chapter 2.1 point 22) with a screwdriver to adjust the speed between 50% and 100%. The alarm display will indicate the speed level as follows:



The left side of the chart represents the speed ramp, the center of the chart represents the operating surface of the CL speed option, and the right side of the chart represents the soft docking.

- Push the S105 button again and keep the pressure until the led next to the button turns off; we are now out of programming mode and the function is active.

NOTE: Do not use closing speed variation function on PL and DL7710 because their speed is already slow enough (about 2 rpm).

4.5.7 Advanced Features Activation Sequence

UNIBox offers a number of advanced functions to the user.

These functions can be classified into three groups:

- System functions: Impulse/hold opening/closing mode, safety loop, weather sensor
- Speed functions: Speed ramp, soft docking, Closing speed setting
- Current sensitivity function: Anti-snatching, Amperometric Control

When activating these functions, the user is supposed to follow a certain logics and sequence considering the following rules:

- System functions can be activated/disactivated at any moment without consequences;
- Speed functions must be activated possibly BEFORE Current sensitivity functions;
- Current sensitivity functions should be activated as last;
- If Amperometric control is active, a modification of a motor speed function (e.g. speed ramp deactivation) consequently requires a re-programming of Amperometric control feature.

4.5.8 Wind Sensor

For installation refer to your sensor seller user manual.

Once properly wired the wind sensor it will be necessary to put the dip-switch 10 on ON and restart the board to activate the function.

WARNING: this function is useful for cover that are not equipped with straps or snatches between the last slat of the cover and the wall of the pool; in this sense this function is totally incompatible with the anti-snatching (dip-switch 6).

Section 5. Intervention and troubleshooting

5.1 Diagnostic table

(to be carried out only by qualified personnel)

WARNING

Before any work on the box and after switching off the power supply upstream of the cabinet, wait 15 seconds for the capacitors to dissipate their residual energy.

WARNING

In the event of a malfunction in the box or in the event of interventions other than programming mode, manual mode, activate the upstream electrical separation device.

DETECTED PROBLEM	ALARM CODE	REPAIR ACTION
By activating the main switch, the enclosure does not start		Check the wiring to the mains. If the wiring is correct and the single-phase current is present, check the ceramic fuse of the mains inlet. If the error persists, replace the box completely.
By activating the main switch, the initialization sequence ends with this alarm.	0	Turn off the card and restart it. If that doesn't work, perform a restart with the forced function, which will overwrite the data. If the error persists, replace the box completely.
After the first start the board has started correctly, the motor wiring is correct but it is impossible to operate the motor.	None	Put the card in forcing mode to overwrite any previously saved settings; reprogram the limit switch positions. Without programming the motor can only move in FORCED mode or if we have started programming the "open" position
During the programming of the end position the alarm 1 is activated.	1	This alarm informs the user if the end position is exceeded; if there is no real reason for this problem, you must activate the FORCED mode to overwrite the old values and then completely reprogram the end positions. Acquit the alarm.
During the programming of the end of the race or normal use, alarm 2 is activated.	2	The motor power cables (red and grey) are not connected properly to the terminal or there is a wiring problem between motor and box. Carefully check the wiring to solve the problem, you can put yourself in FORCED mode to check if the motor is properly connected. If there is no solution, the motor could be broken or short-circuited. Try powering it with batteries to have a final confirmation or connect the motor directly to the control box without intermediate wiring.
The display shows alarm 3 during motor operation which consequently stops; the motor does not start and alarm 3 is displayed.	3	This alarm activates if more than 3 seconds pass between two pulses of the sensor. Check the sensor wiring first. If there are no wiring problems, put the board into FORCED mode and check if the engine is running at a normal speed when used manually. In this case the internal sensor of the motor is broken and it must therefore be repaired by UNICUM; while waiting for the replacement intervention, the cover can be used with caution in FORCED mode.
Motor does not start and alarm 4 is displayed.	4	One of the fuses melted; turn off the card completely and wait about fifteen seconds. Disconnect it from mains. Disassemble and check the different fuses with a tester and replace the defective fuse. Restart the board and check that the engine is working properly.

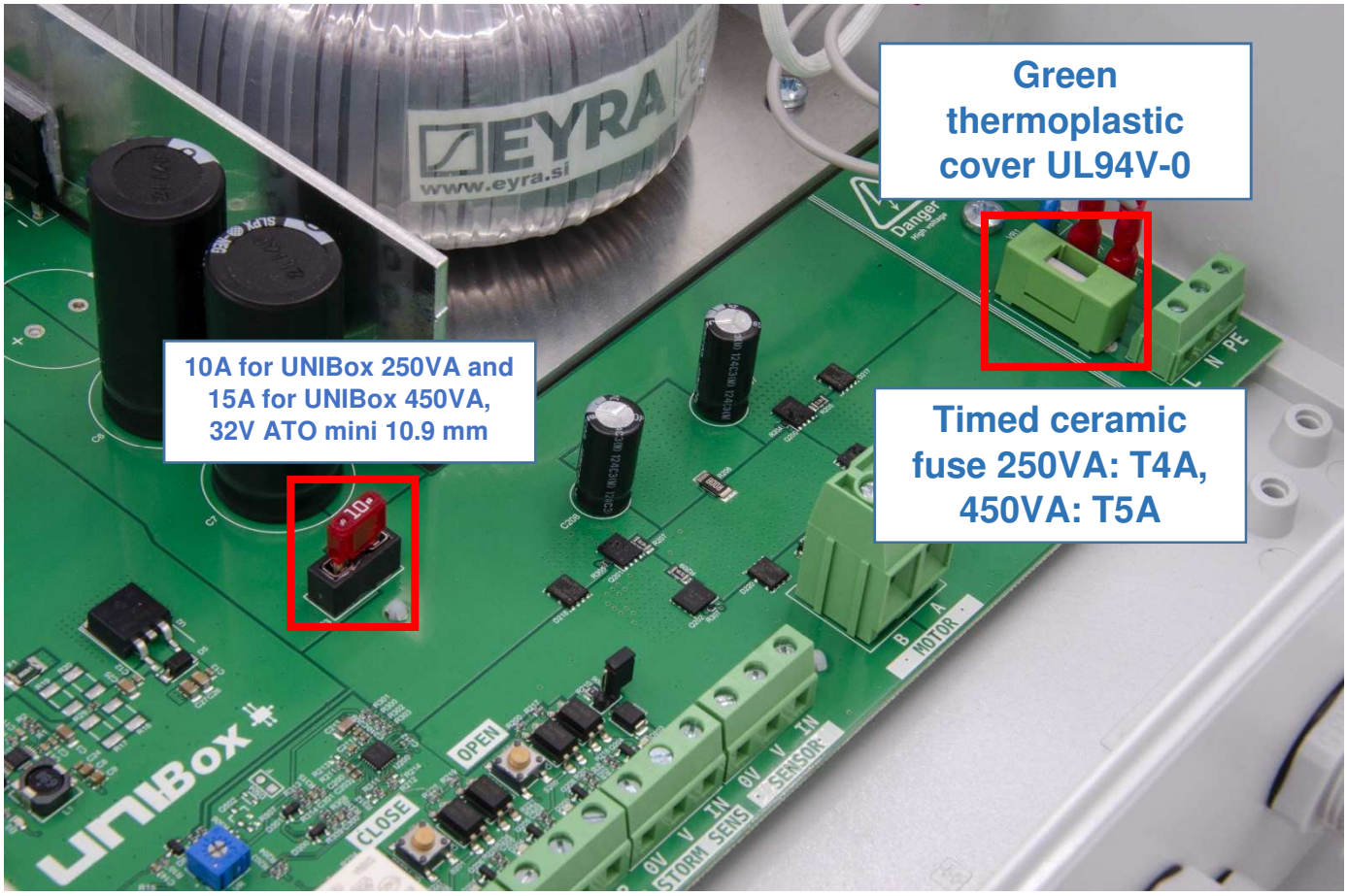
The motor stops and alarm 5 is displayed.	5	The amperometric control function is active and some obstacles or technical problems have caused the threshold to be exceeded. Acquit the alarm and analyze problem cause. Check with an amperometer the current value all around the point that caused the alarm. If the current remains at acceptable values but the threshold exceedance occurs again, you can reprogram the function (see chapter 4.5.2)
The motor stops and alarm 6 is displayed.	6	The safety loop is active and an alarm has caused the engine to stop for emergency. Check and resolve the alarm situation and acquit the alarm.
The motor stops and alarm 7 is displayed.	7	The anti-snatching function is active and a current threshold exceedance was detected during first seconds ~~of~~ while opening the cover. Check the straps and that no obstacle prevents the engine from moving forward. Acquit the alarm. If the alarm is triggered again disable the function~~.~~
The motor stops and alarm 8 is displayed.	8	The motor is overloaded and has been stopped to prevent its destruction. This alarm is activated when the time between two pulses of the sensor is greater than 3 seconds and a high current value is measured. Acquit the alarm and analyze the situation to find the cause that triggered the alarm.
The cover opens automatically	9	The accessory connected to the "STORM SENS" terminal was triggered causing the cover to open. Wait for the sensor to go back to its normal state or disable the function.
The motor operates only in one direction		Disconnect the power cables from the motor and check that it can move properly in both directions using a battery. In this case, position the cover about halfway through its stroke. Reconnect the engine to the board and switch to forcing mode. If the motor is running in only one direction, the control board has to be replaced.
By activating a function with the appropriate dip switch, nothing happens.		To fully activate advanced optional functions such as the safety loop or the impulse mode on opening, it is always necessary to reset the card.
Motor stops suddenly.	d	Motor drive has borne an electrical overload which may have affected this component; if after acknowledgment, alarm is still present, the damaged board must be replaced.

5.2 Fuse replacement

WARNING

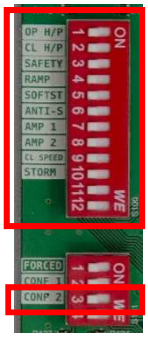
Fuse replacement must be done only when the board is completely switched off and disconnected from mains network. Not respecting this prescription will expose you to a high risk of electroshock. This operation must be performed only by authorized and trained technicians.

Fuse replacement must be done using spare parts following specifications below:



5.3 Full reset of the card

To completely erase the memory of the electronic card you must perform the following procedure:Switch all the advanced function dipswitches to off



- Set all advanced functions dip-switches to OFF
- Enter "FORCED" mode
- Exit "FORCED" mode
- Restart the card using main power switch.

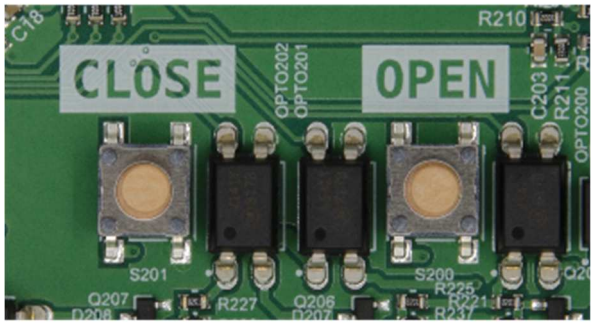
5.4 Onboard motor control during maintenance operations

WARNING

Using these buttons is strictly forbidden when not having direct sight on the pool.

During maintenance and troubleshooting operation, it is possible to operate the motor directly from the control box; this feature must not be used if it's not possible to see directly the pool to oversee cover movements effectively.

« OPEN » and « CLOSE » allow to open and close the cover at any moment, even when no key switch is used.



6 Warranty application

The warranty only applies for normal use, which corresponds to a maximum of **10 minutes** of continuous use. Beyond that, please allow 30 minutes between activations.

The manufacturer disclaims his liability in the following cases:

- Replacement of parts that do not conform to the original parts.
- Installation not in accordance with these recommendations.
- Installation does not comply with current regulations.
- Unserviced control devices causing malfunctions.
- Deterioration due to lightning or other causes.
- Deterioration due to sprinkling or immersion.
- Any other situation which would not be expected in the normal use of the equipment.

Storage temperature of the boxes and associated equipment: between -20°C and +60°C.

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