

# Instruction

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KZH04

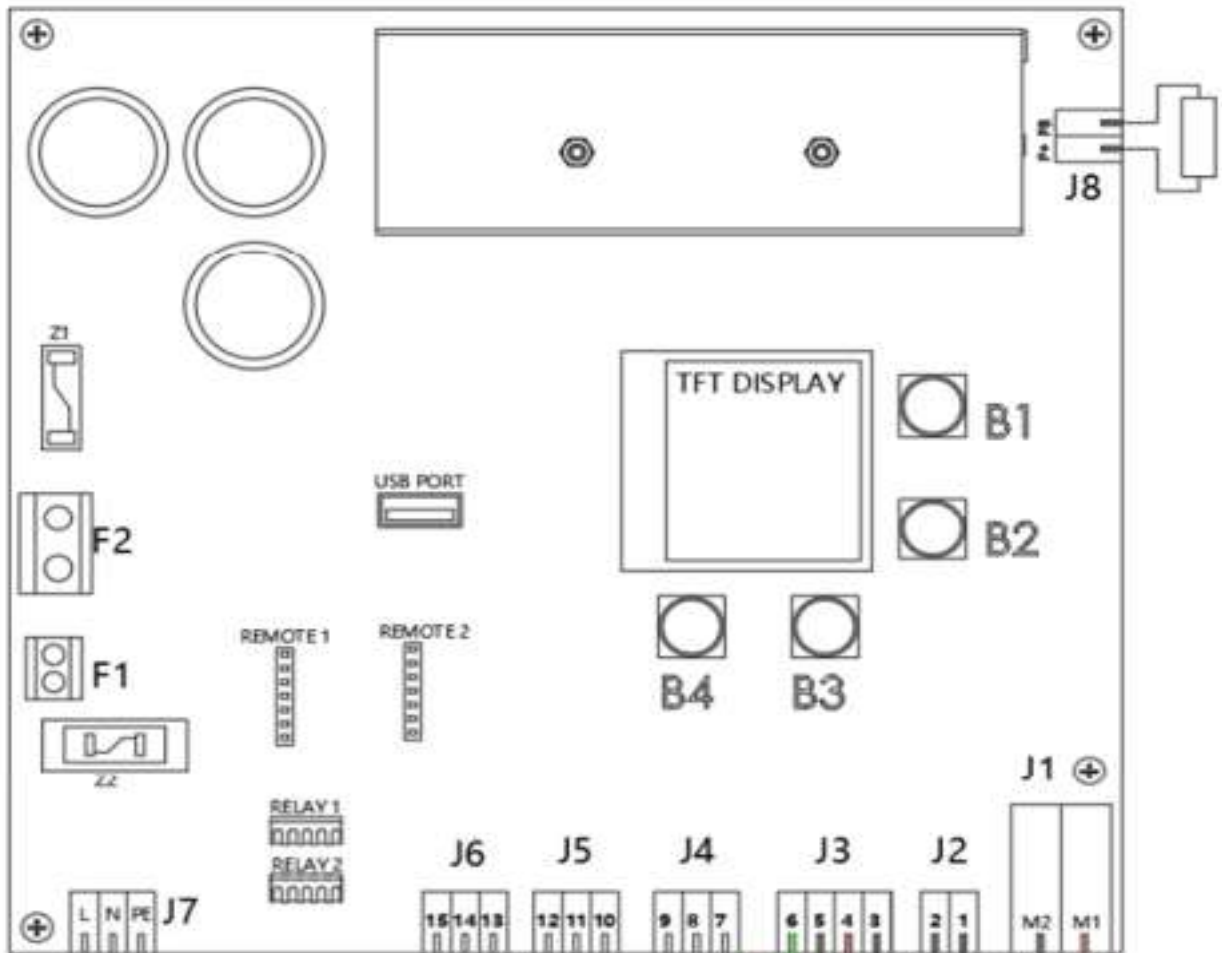
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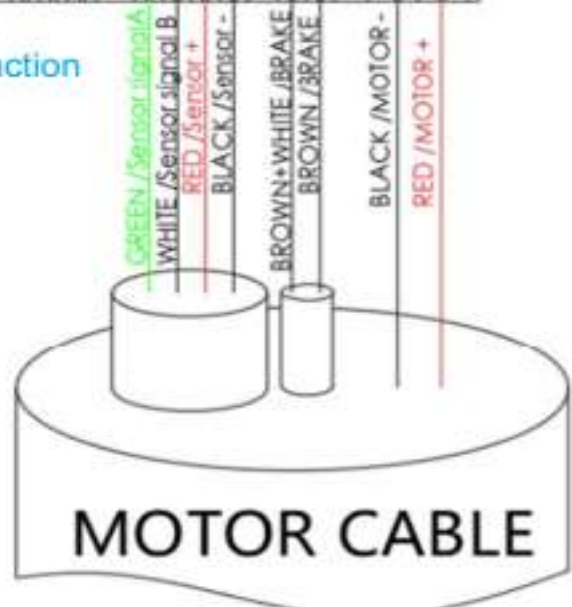
# 1. Top View of the Control Box



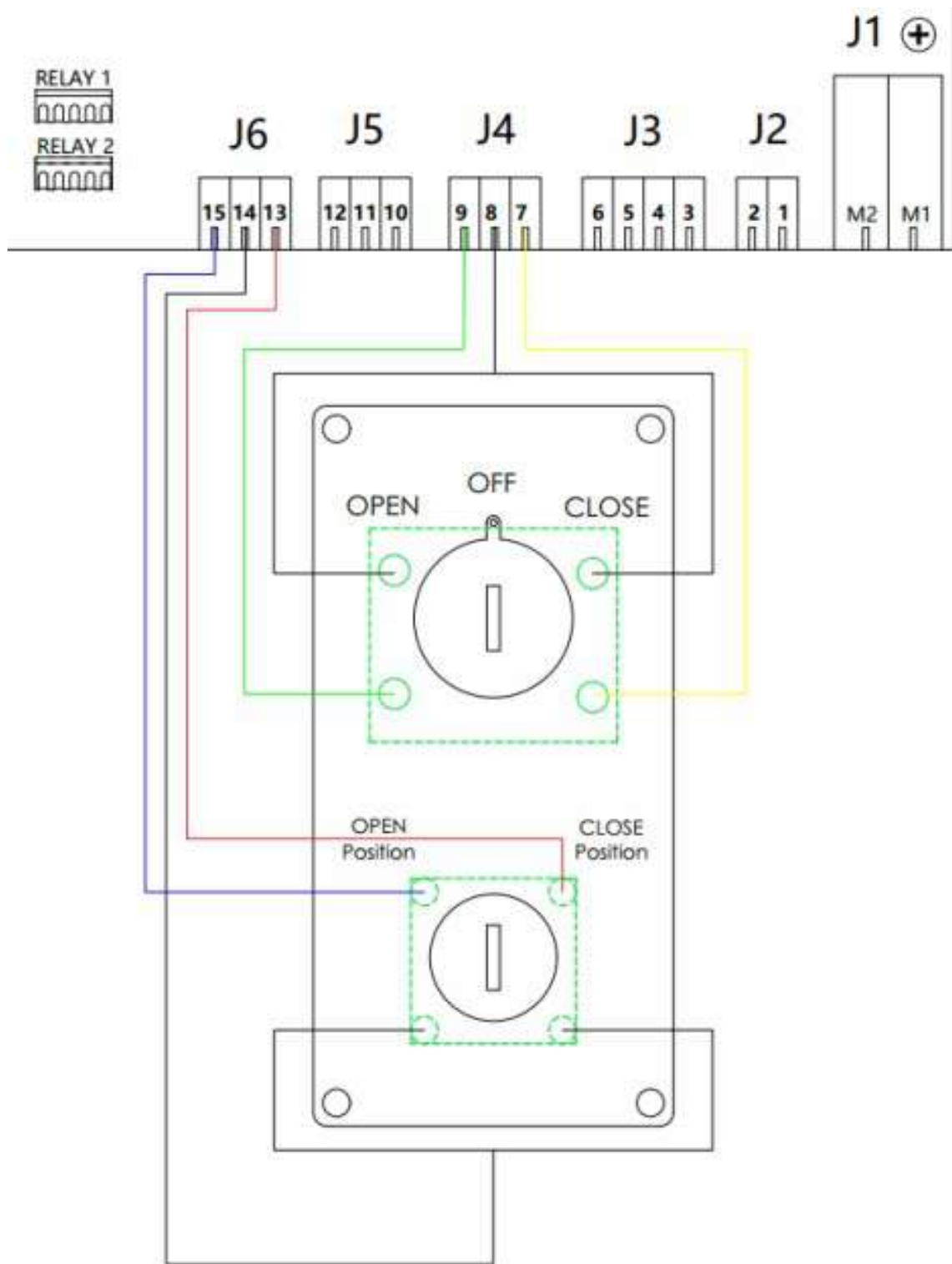
## 2. Connect the Motor Cable



Motor cables connect directly (or via a junction box) to the terminal strip



### 3. Connect the Key Switch

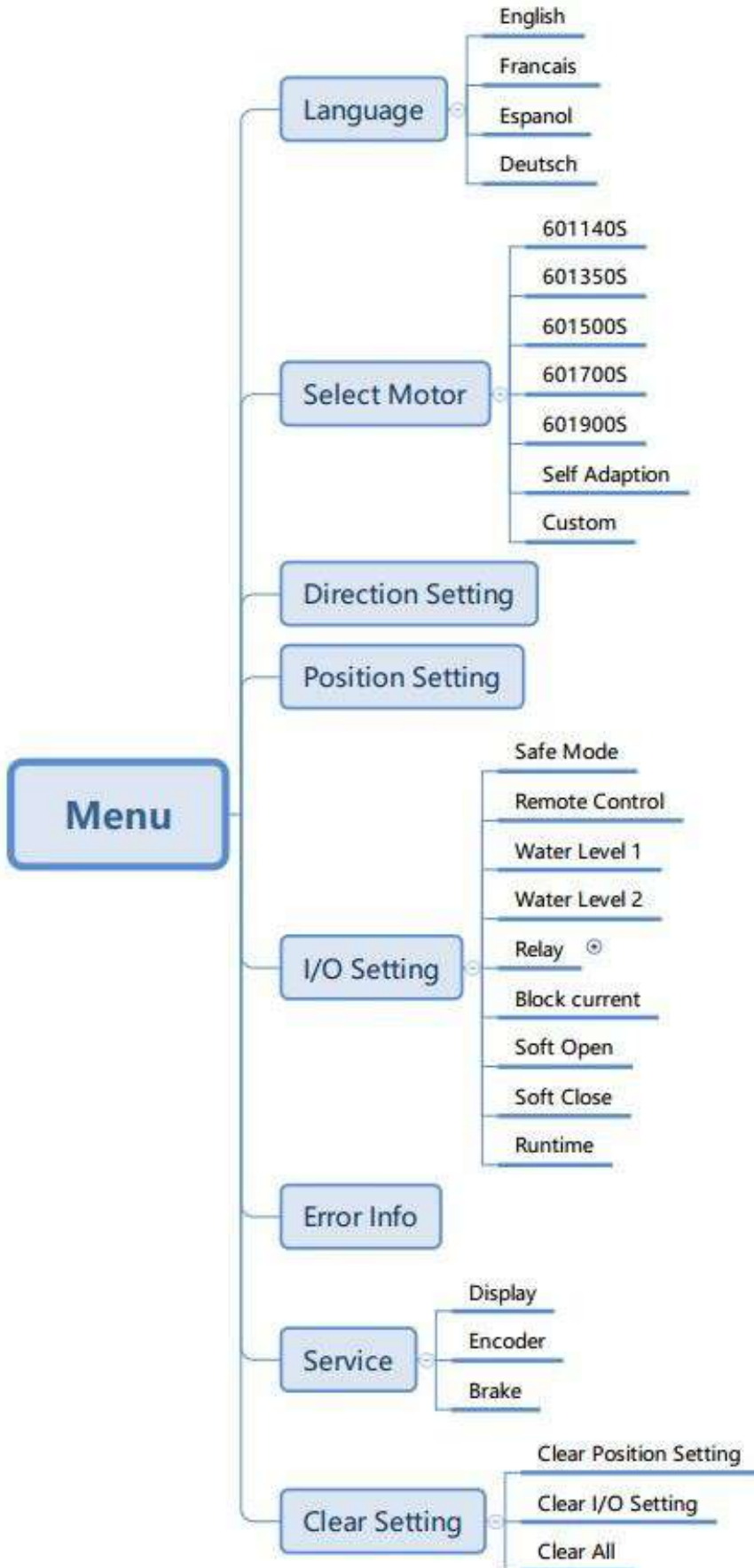


## 4. Explanation of the components

Code	Number and Specification		
J1	M1	MOTOR + or -	Red motor cable +2.0mm <sup>2</sup>
	M2	MOTOR - or +	Black motor cable -2.0mm <sup>2</sup>
J2	1	BRAKE	Brown 0.5mm <sup>2</sup>
	2	BRAKE	Brown + White 0.5mm <sup>2</sup>
J3	3	SENSOR -	Black 0.5mm <sup>2</sup>
	4	SENSOR +	Red 0.5mm <sup>2</sup>
	5	SENSOR SIGNAL B	White 0.15mm <sup>2</sup>
	6	SENSOR SIGNAL A	Green 0.15mm <sup>2</sup>
J4	7	KEY SWITCH CLOSE	
	8	COMMON	
	9	KEY SWITCH OPEN	
J5	10	WATER LEVEL 1	
	11	COMMON	
	12	WATER LEVEL 2	
J6	13	CLOSE POSITION	
	14	COMMON	
	15	OPEN POSITION	

Code	Number and Specification	
J7	L	POWER SUPPLY 230V
	N	POWER SUPPLY 230V
	PE	EARTHING
J8		RESISTANCE
F1	F1	230V AC To TRANSFORMER
F2	F2	19V AC From TRANSFORMER
Z1	Z1	FUSE 20A
Z2	Z2	GLASS FUSE 10A
	REMOTE 1	RECEIVER 1
	REMOTE 2	RECEIVER 2
	RELAY 1	CONNECTOR RELAY 1 (RELAY 1-4)
	RELAY 2	CONNECTOR RELAY 2 (RELAY 2-4)
	USB PORT	UPDATE SYSTEM
	TFT DISPLAY	DISPLAY
	B1	UP / OPEN
	B2	DOWN / CLOSE
	B3	ENTER(CONFIRM THE CHOICE)
	B4	MENU / RETURN

# 5. Tree Diagram



Language  
 Select Motor  
 Direction Setting  
 Position Setting } 6.1-6.4

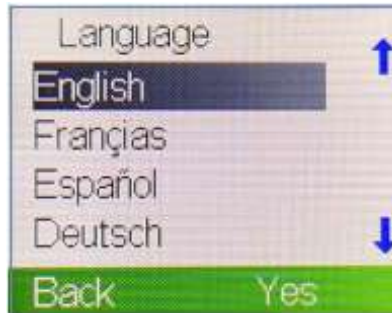
I/O-Setting: 7.1-7.5

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# 6. Basic Setting

## 6.1 Language



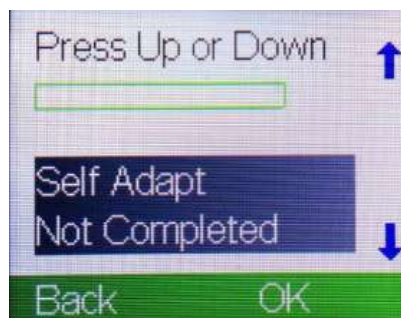
Press B1 or B2 to select the language.  
Confirm your selection by pressing B3.

## 6.2 Select Motor

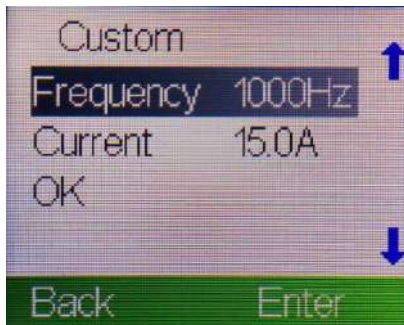


Press B1 or B2 to select the Motor.  
Confirm your selection by pressing B3.

If you are unsure about your motor parameter, you can choose Self Adaption, as the motor automatically adapts to its own parameters.



After selecting Self Adaption, you must hold down B1 or B2 and let the Motor run until the progress bar is full.



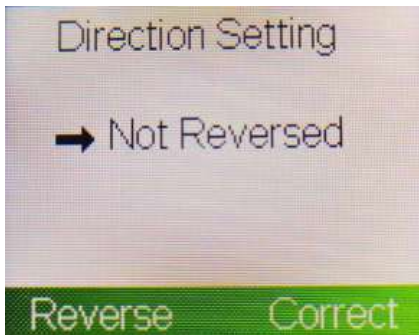
You can also choose Custom, if you know enough about your motor parameters.

Press B3 first, then press B1 and B2 to the number change, press OK to confirm the setting.

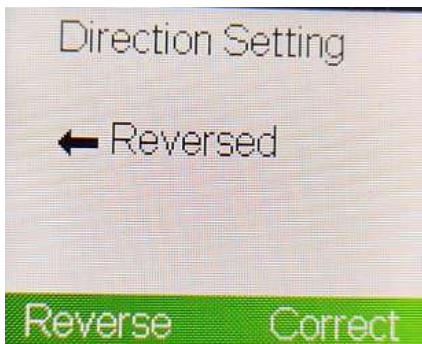
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The menu automatically changes to the direction setting after you have selected the motor.

### 6.3 Direction Setting



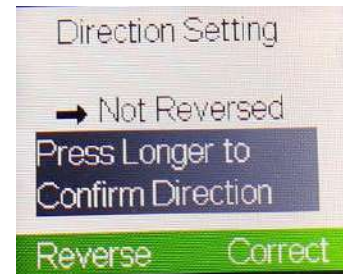
Press B1 or B2 (5 seconds) to check the direction of motor rotation. If the direction matches the direction of the button, press B3 and then enter the next setting.



If not, press B4 to reverse the motor direction. At the same time, the word Reverse is displayed on the screen. Now press B1 or B2 again (5 seconds). If the direction is correct, you can press B3 to confirm.

### Note:

If "Press Long to Confirm the Direction" is displayed on the screen, it means the run time is too short (should be > 5 seconds), so hold down the button for more than 5 seconds to move to check



**Note:**

During position adjustment, if the open or closed position deviates from your expectation, it can be reset with B1 and B2.

However, to protect the long life of the motor and the control system, it is recommended to press the button for more than 5 seconds.

After setting the position, press B1 and B2 to check the open and closed position of the cover.

## 6.4 Position Setting



Before the first position setting, the display of the open position and the closed position is the number 0 with a red background.

Keep pressing B1 until the "Open" Position is reached

Press B3 + B1 to confirm the Open Position

Keep pressing B2 until the "Close" Position is reached

Press B3 + B2 to confirm the Close Position



The Open Position is set

The Close Position is set





If you have created the four basic settings, the display looks like the picture.

The progress bar indicates the extent to which the pool is open.

At this time, the pool can already be used normally.

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## More features

Please continue reading down

# 7. Key Switch

If the control box is installed far from the swimming pool, it may be possible that you will not see the operating status of the pool cover when adjusting the position. In this case, you can use our key switch (installed near the swimming pool) to set up.



Connect the key switch to the circuit board

(Please refer to page 4)

Enter the control system and set the basic setting except position setting.

(Please refer to page 8-9))

Turn the large key to the left (OPEN) to open the pool at the desired location.

Turn the small key also to the left (OPEN position)

Now the OPEN position is programmed

Turn the small key in the middle (wait 1 second) and then turn to the right (CLOSE position)

Turn the large key to the right (CLOSE) to close the pool at the desired location

Turn the small switch back to the center. Now the CLOSE position is programmed

After completing the above steps, you can use the keyswitch to control the opening and closing of the pool

**(Note: the display must return to the menu)**

Delete setting: Turn the small key to the following sequence

**OPEN Position — Middle — CLOSE Position**



# 8. I/O-Setting

## 8.1 Mode



1st

If you select safe mode, press B3 to enter this mode.

Open:  
open the pool

Close:  
close the pool



2nd

Press B1 and B2 to select Automatic or Safemode. Confirm your selection by pressing B3.

Auto: Press B1 (open) or B2 (close), the pool cover will automatically run to the set position.



3rd

Safe: Press B1 (open) or B2 (close) and do not release until the pool cover moves to the set position.



4th

If you want to use the remote control, press B3 to enter.



5th

A: open the pool  
B: close the pool  
C: control relays  
D: control relays

In this mode, the system can be controlled via a 4-button remote control.



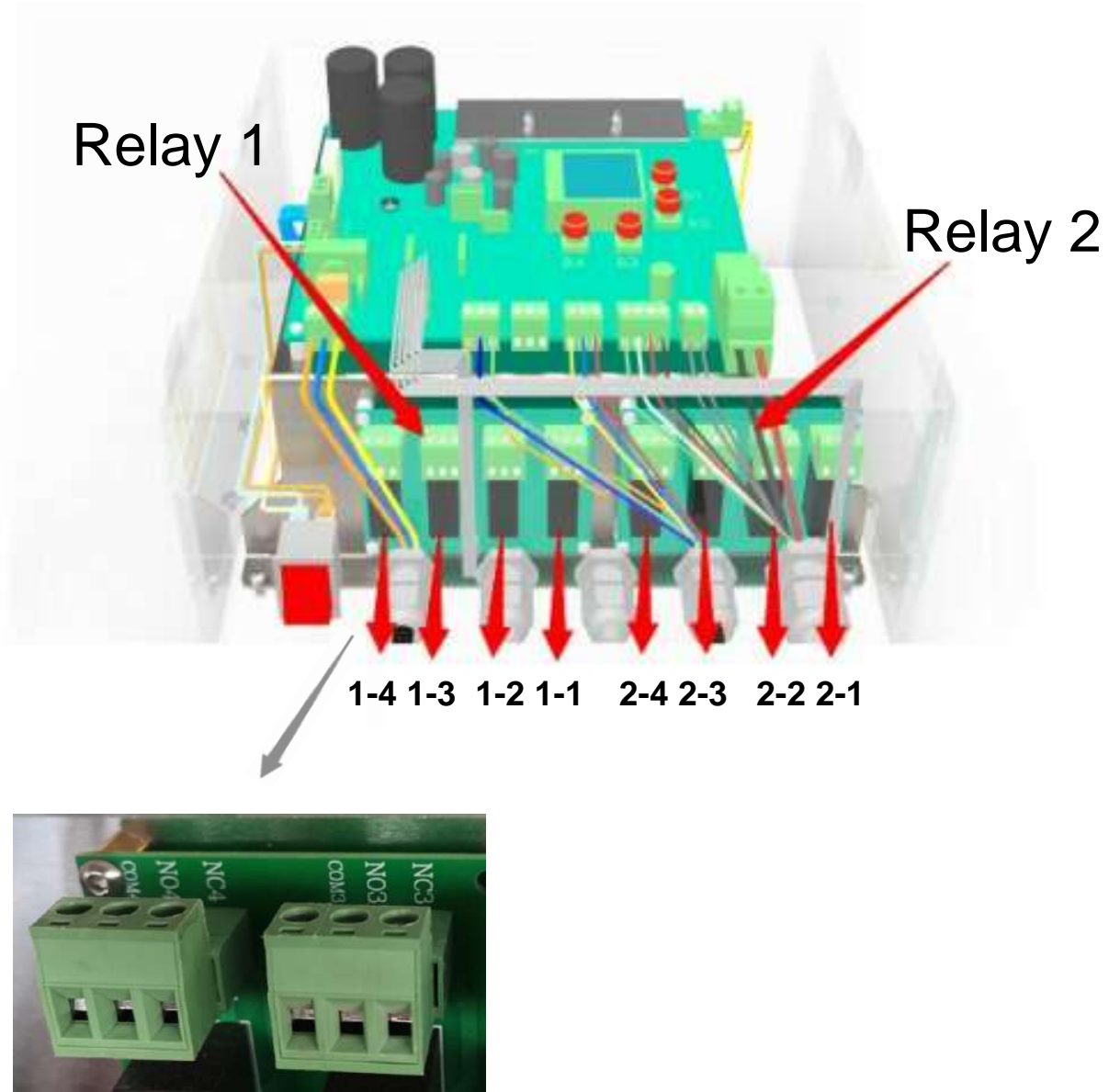
6th

In this mode, the system can be controlled by up to two four-button remotes at the same time, and the remote can connect up to 8 relays.

For information about the relay setting, see 7.2

# 8.2 Relay

## 8.2.1 Relay Connection



## 8.2.2 Remote Control Connection

### Standard Mode



- Open the pool
- Close the pool
- Remote 1-C
- Remote 1-D

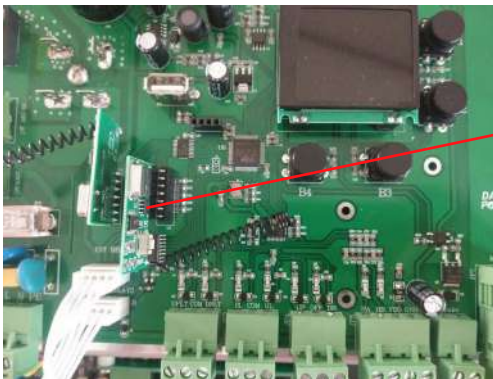
### 4/4+4 Button-Mode



- Remote 1-A
- Remote 1-B
- Remote 1-C
- Remote 1-D



- Remote 2-A
- Remote 2-B
- Remote 2-C
- Remote 2-D



Press and hold the Learn / Clear button, the red light stays lit and the erase is successful.

Click the Learn / Delete button, the red light will flash.

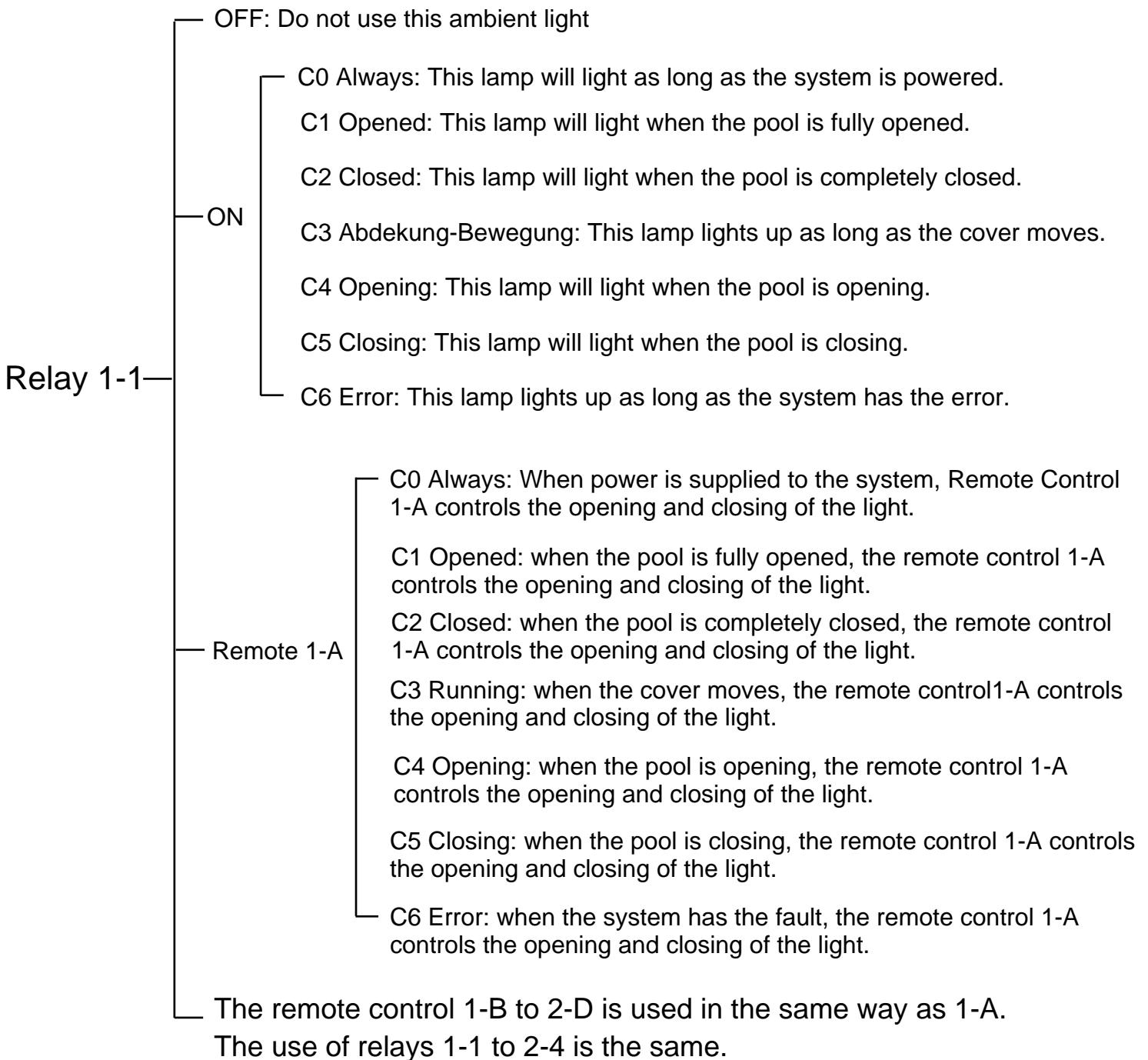
Click the A button on a remote control again.

Wait until the red light turns off and the remote control is successfully aligned.



## 8.2.3 Relay Setting

For a better understanding, an example is shown here: When the relay 1-1 is connected to an ambient light.



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### Note:

Under the control of the remote control, press the button once to start the relay. If you want to close, just have to press the button again.

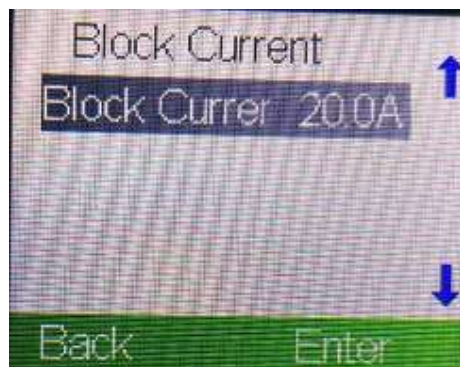
After the relay has been set up successfully, you must return to the main interface to run the relay.

## 8.3 Block Current



**Note:** The block current indicates the maximum allowable current during engine operation and should not exceed the preset value in the engine model.

Press B3 to enter the block current setting.



Press B3 at first, then press B1 and B2 to change the number

Press B3 to confirm the setting.

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## 8.4 Soft-Open



Press B3 to enter the setting of soft opening or soft closing.



Press B3 at first, then press B1 and B2 to change the percent

Press B3 again to confirm the setting

### **Soft-Open and Soft-Close:**

slowly opening and closing the pool cover

**20%:** the percentage of the distance of Soft-Open (Close) to the distance you have already set.

**50%:** the percentage of the rate of Soft-Open(Close) to the fastest speed of the motor. (at least 50%)

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## 8.5 Runtime



Meaning: To better protect the drive motor, the system limits the uninterrupted running time of the motor. When the maximum duration is reached, the drive motor stops working.

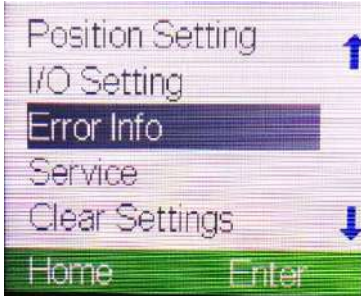
(Runs within 3 minutes of each interval are considered continuous.)

First press B3, then continue to press B1 and B2 to change the percent

Then press B3 again to confirm the setting

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# 9. Error Info



Press B3 to enter the interface. This interface displays the most recent error message record, which can contain up to 1000 items.

Error Message	Explanation	Solution
Over Current	The actual operating current of the motor exceeds the rated current	Whether the power connected to the device is 220-230V Is the drive motor correctly selected? Limit current is set too low
Over Voltage	Overvoltage protection: The system voltage is higher than the rated voltage	The input voltage of this unit is too high. Contact the local power supply department. Parts of this unit are damaged and contact Customer Service.
Under Voltage	Undervoltage protection: The system voltage is lower than the rated voltage	The input voltage of this unit is too low. Contact the local power supply department.
Run Time	Continuous running time of the motor to reach the set maximum	Press B4 (Clear Setting) to clear the accumulated time (it is recommended to stop the motor for more than ten minutes and then clear the setting)
Stop Action	Turn on the power of control box but motor doesn't move.	Contact dealer or manufacturer

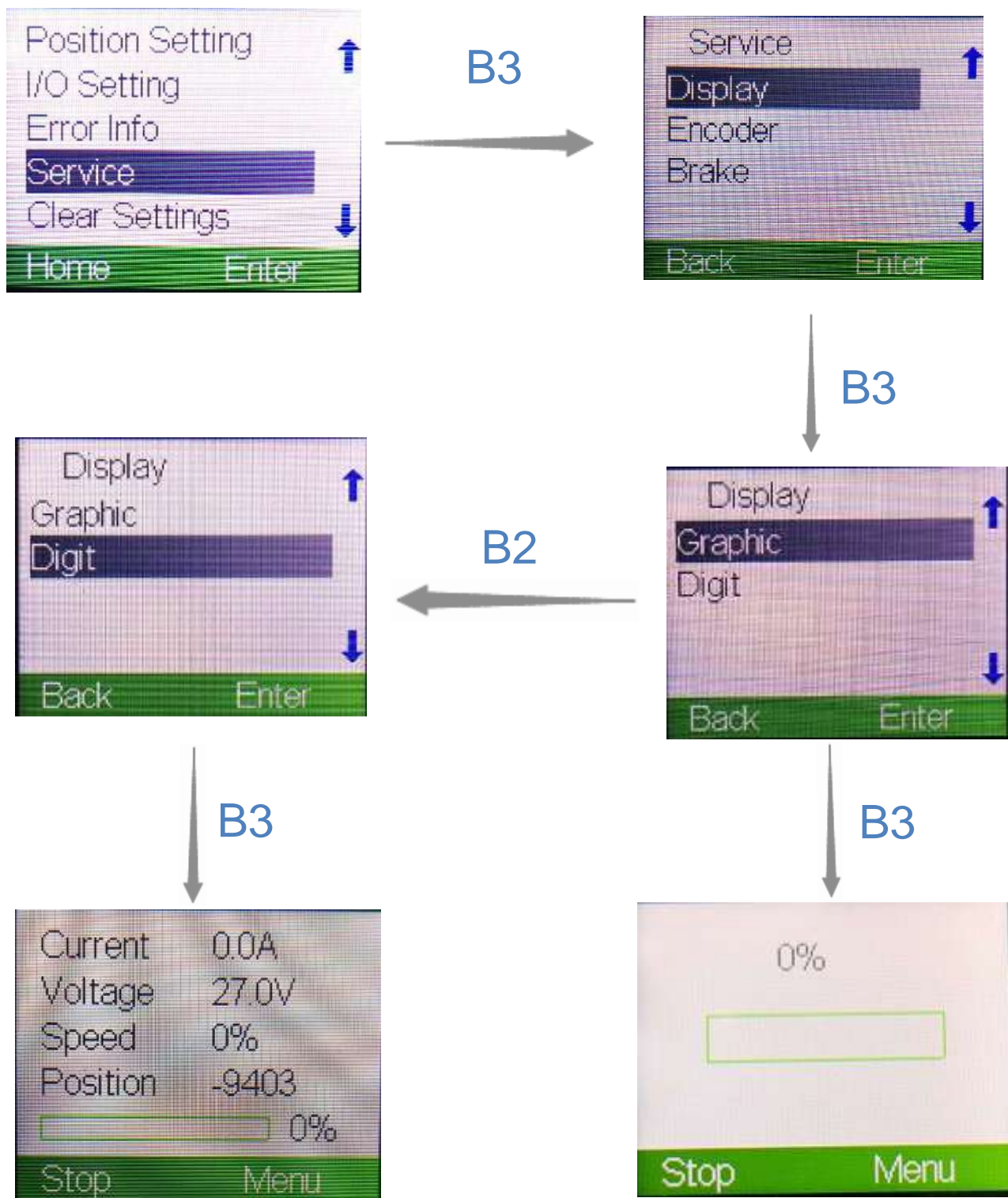
Error Message	Explanation	Solution
Water Level 1	Water Level 1 is not OK	Is the water level switch 1 set correctly? Is the water level switch damaged? If not resolved: contact customer service
Water Level 2	Water Level 2 is not OK	Is the water level switch 1 set correctly? Is the water level switch damaged? If not resolved: contact customer service
Opposite Hall	Hall-reversal protection	Is the motor cable A / B signal cable properly connected? Is the motor power cable M + / M- correctly connected? "
Hall A Error	Motor A phase signal error	Is the motor signal line A connected correctly? Irrespective of whether the motor cable is in a strong or a strong magnetic environment (the motor cable should be more than 1 meter away from the high voltage cable)
Hall B Error	Motor B phase signal error	Is the motor signal line B connected correctly? Irrespective of whether the motor cable is in a strong or a strong magnetic environment (the motor cable should be more than 1 meter away from the high voltage cable)
Hall Miss Pulse	Hall signal loss of the motor	Regardless of whether the motor cable is in a strong or a strong magnetic environment (the cable of the drive motor should be more than 1 meter away from the high voltage cable)
Hall Phase Error	Hall signal error of the motor	Regardless of whether the motor cable is in a strong or a strong magnetic environment (the cable of the drive motor should be more than 1 meter away from the high voltage cable)

**Attention:** The above methods are for reference only. If you do not solve the problem in a timely manner, contact Customer Service.



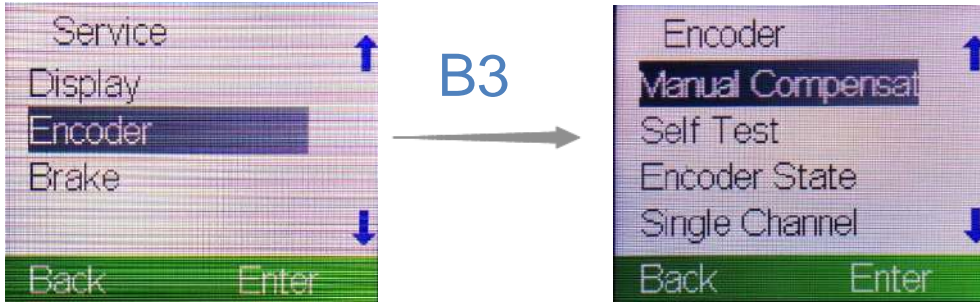
# 10. Service

## 10.1 Display



When the Motor is running, the real-time parameters are displayed in the image.

## 10.2 Encoder



### Manual Compensation:

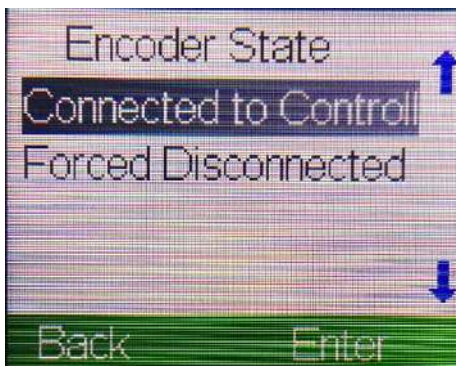
Increase or decrease the length of the pool cover.

If the switch position changes due to external factors, you can move the pool cover by manual compensation without programming again to have to adjust.

### Self Test:

If the pool cover can not be set to the set position, you can run the motor after turning on the self-test function. If the speed exceeds 50%, the motor will perform an error check. If an error message appears on the screen, you can use the error message table to correct the error.

### Encoder State:



The encoder transmits the motor signal to the controller.

### Note:

The manual compensation is an additional function. If the length of the cover is increased or decreased, re-execute the position adjustment to ensure that the drive motor and pool cover can be used properly.

If you use this device to control other motors, please contact customer service in advance, otherwise the company will not bear any responsibility and loss.

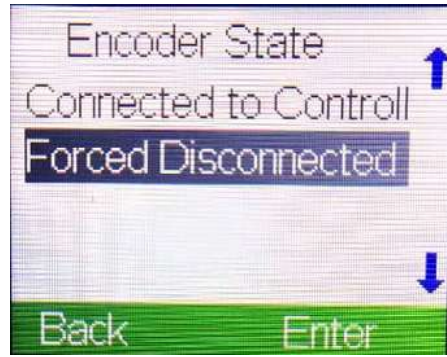
**Note:**

If the motor is our product, you need to select the right model in the system.

The encoder is a precision signal device and should not be installed near a strong power supply or a strong magnetic field.

The cable of the drive motor must be more than 1 meter away from the high voltage cable.

This feature is used as an additional detection feature. Please do not open the forced disconnect brake in normal operating condition.

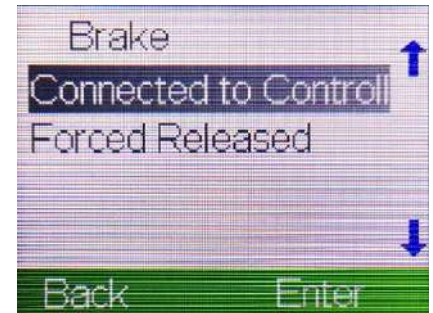


If the encoder is faulty, the pool cover can not be stopped in the correct position, the encoder is disconnected from the controller and the pool cover can be operated manually.

**Single Channel:**

The encoder is a single channel. When single channel mode is activated, the control system can be used normally.

**10.3 Brake**



**Connected to Controller:**

The brake is controlled by the controller and connected to the drive motor

**Forced Released:**

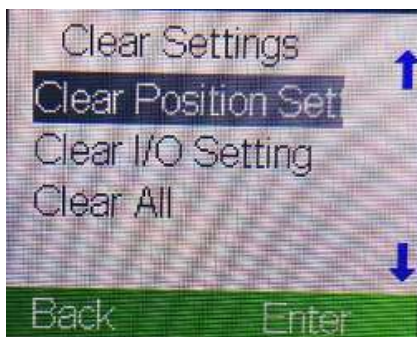
The brake is forcibly released and the drive motor loses its braking function.



# 11. Clear Settings

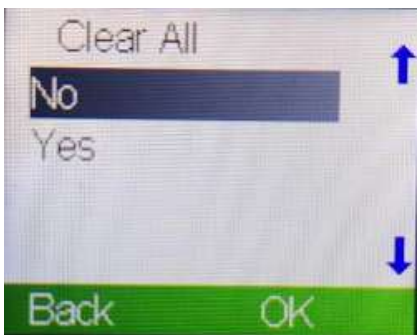


Press B3 to enter Clear Settings



Through B1 and B2 you choose which Setting to delete

Press B3 to confirm



When you are sure you want to clear this setting, press B2 and select Yes, then press B3 again to confirm.

If you do not want to clear the setting, then directly press B3.