PU350

UNDERGROUND GATE OPENER

for swing gates – 24V

EN

POWERTECH

INDEX

A. GENERAL SAFETY WARNINGS AND PRECAUTIONS

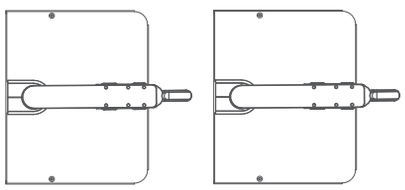
WARNING!

Please read this instruction manual carefully before the installation of gate-automated system.
This manual is exclusively for qualified installation personnel. Powertech Automation Inc. is not responsible for improper installation and failure to comply with local electrical and building regulations.
Keep all the components of the kit content and this manual for further consultation.
In this manual, please pay extra attention to the contents marked by the symbol:
Be aware of the hazards that may exist in the procedures of installation and operation of the gate-automated system.
Besides, the installation must be carried out in conformity with local standards and regulations.
If the system is correctly installed and used following all the standards and regulations, it will ensure a high degree of safety.
Make sure that the gates work properly before installing the gate-automated system and confirm the gates are appropriate for the application.
Do not let children operate or play with the gate-automated system.
Do not cross the path of the gate-automated system when operating.
Please keep all the control devices and any other pulse generator away from children to avoid the gate-automated system being activated accidentally.
Do not make any modifications to any components except that it is mentioned in this manual.
Do not try to manually open or close the gates before you release the gear motor.
If there is a failure that cannot be solved and is not mentioned in this manual, please contact qualified installation personnel.
Do not use the gate-automated system before all the procedures and instructions have been carried out and thoroughly read.
Test the gate-automated system weekly and have qualified installation personnel to check and maintain the system at least every 6-month.
Install warning signs (if necessary) on the both sides of the gate to warn the people in the area of potential hazards.

B. PRODUCT DESCRIPTION AND INTENDED USE

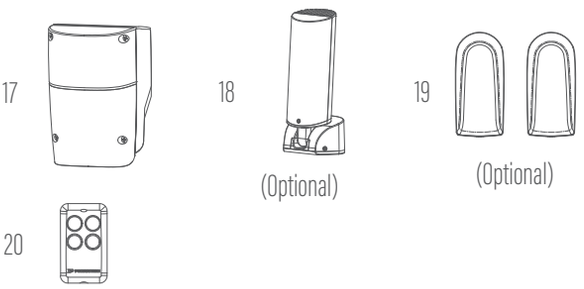
B1. KIT CONTENT

▸ MOTORS ◂

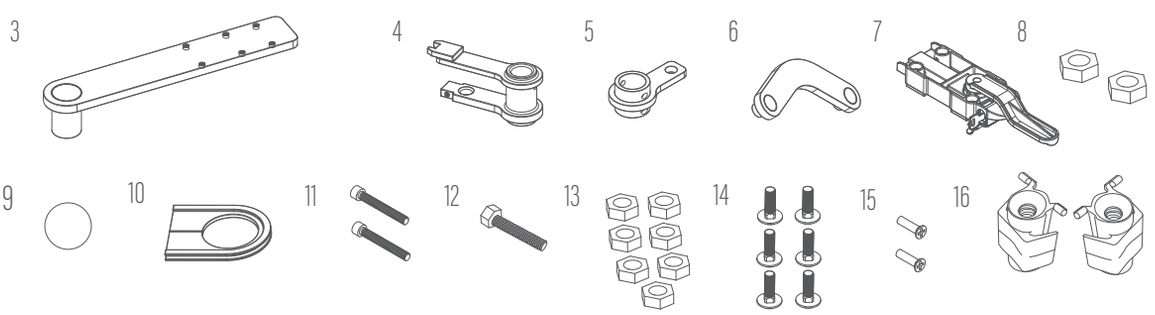


1 2

▸ ACCESSORIES ◂



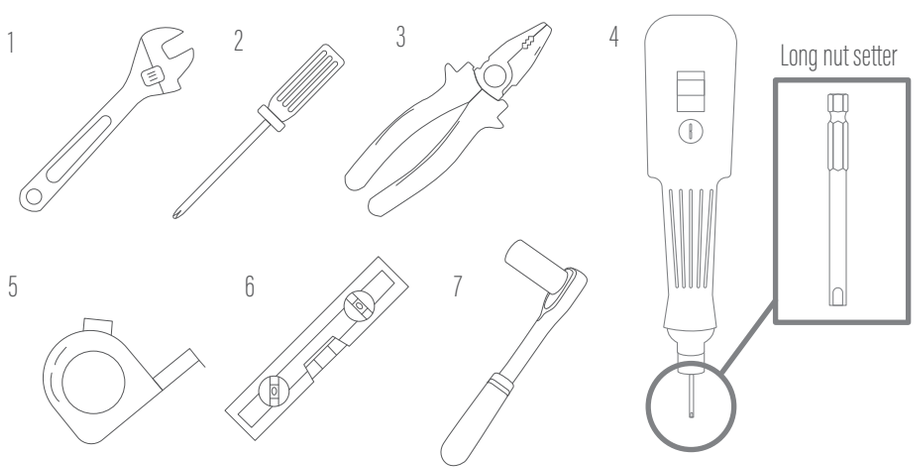
▸ Fasten ◂



▸ REF	DESCRIPTION	QUANTITY ◂
1.	Motor 1 (Master)	1
2.	Motor 2 (Slave)	1
3.	Mounting bracket to gate	2
4.	Couple release lever	2
5.	Straight arm	2
6.	Curved arm	2
7.	Release set	2
8.	Nut M10	4
9.	Steel ball	2
10.	Plug	2
11.	Screw M10	4
12.	Screw M12	2
13.	Nut M12	14
14.	Screw M12 (Locked)	12
15.	Screw ∅6	4
16.	Screw hole (Locked)	4
17.	PC190U Control box	1
18.	Flashing light (Optional)	1
19.	Photocells (Optional)	1
20.	Remote	2

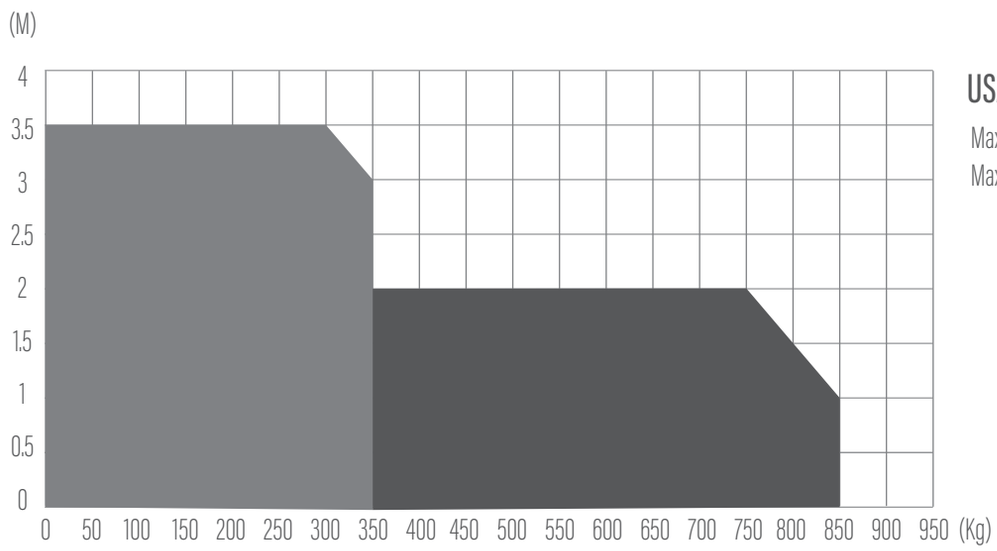
B2. TOOLS

Below is a list of tools recommended for installation. Please have them prepared before you start your installation to save time.



1. Adjustable wrench
2. Philips screwdriver
3. Pliers
4. Electric screw driver
5. Tape measure
6. Level
7. Socket wrench

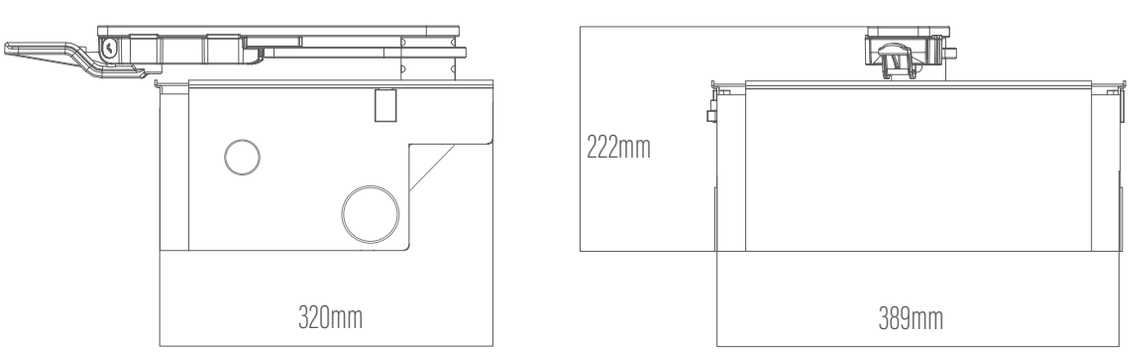
B3. PRODUCT USAGE LIMITS



USAGE LIMITS

Max gate weight : 350kg
Max gate length : 3.5Meters

B4. DIMENSIONS



PU350

C. INSTALLATION

C1. PRE-INSTALLATION CHECKS

Installation must be carried out by expert qualified personnel and in full compliance with current regulations.

Before commencing the installation of the motor, make sure to:

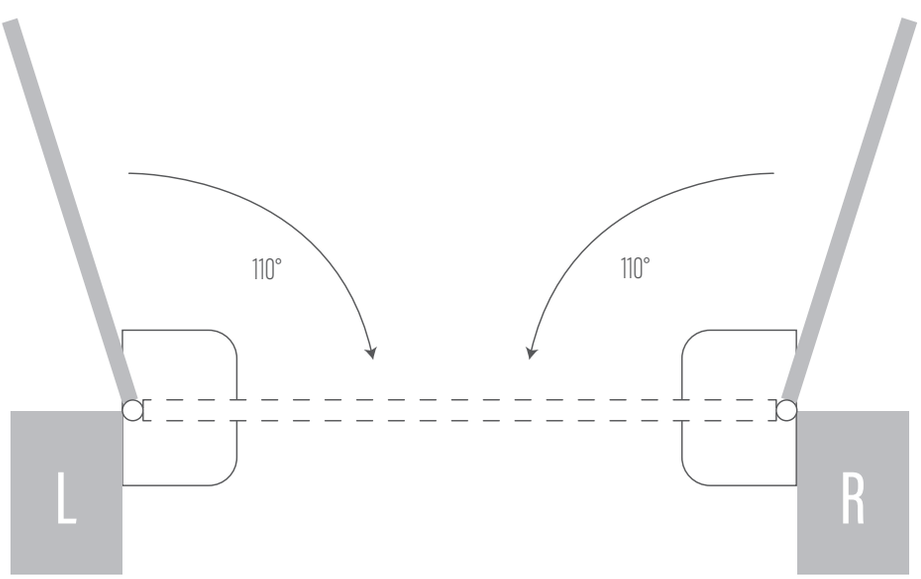
1. Check that all the materials are in good working order and suited to the intended applications.

2. . Gate status verification :
– Make sure the structure of the gate is sturdy, the hinges work.
– Ensure that the gate has been properly installed and that it swings freely in both directions.
– Make sure that there are no frictions between moving and non-moving parts.

3.Make sure that the weight and dimensions of the gate leaf fall within the operating limits
➡ Max leaf weight : 350kg
Max leaf length : 3.5 meters

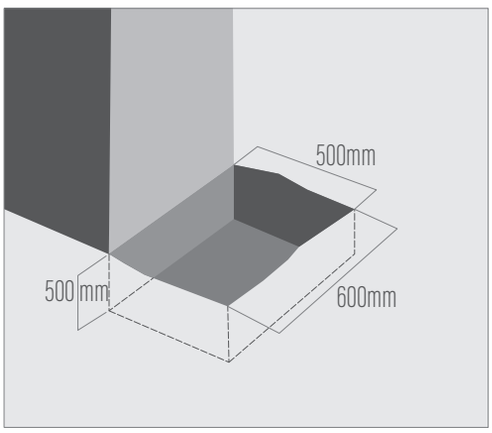
C2. INSTALLATION OF THE MOTORS

- DIMENSION CHART
  Refer to the dimension chart to choose the correct dimensions of the motors and installation position.



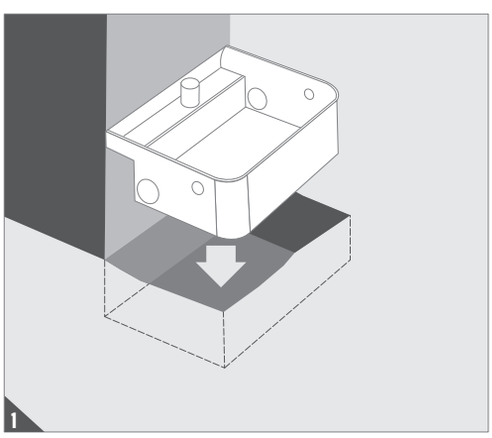
HOLE MAKING AND WIRING

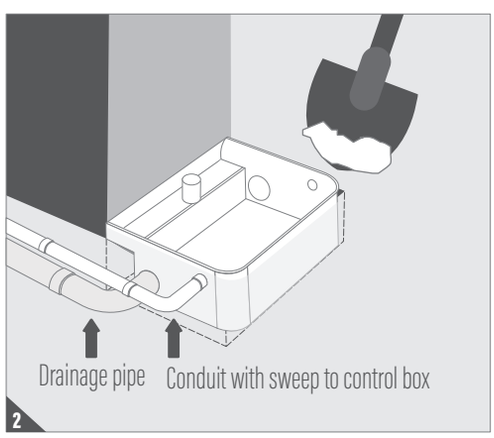
Please dig out a place of appropriate size under the gate shaft, and pre-bury pipes and junction boxes of appropriate length.
Estimate the number of wires you need and use pipe with right size .



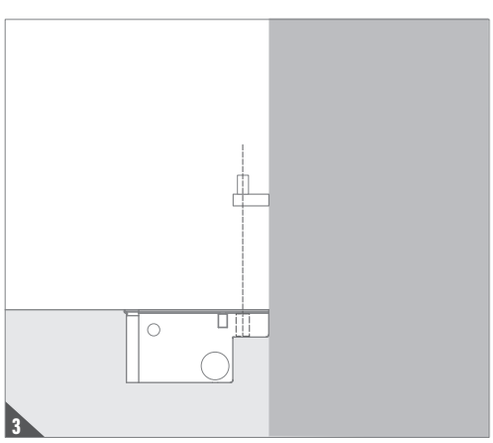
INSTALL THE OUTER BOX

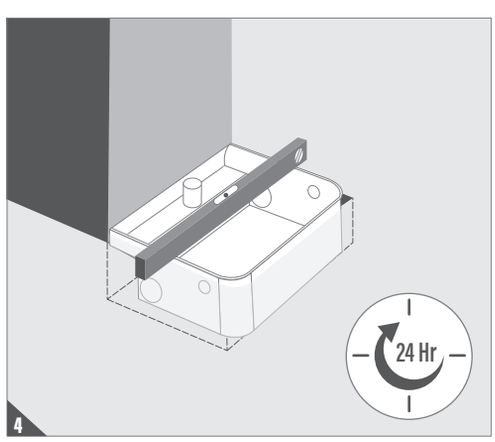
Alige the outer box close to the doorpost and put it into the pre-dug installation position.
Please make sure that the pre-bury pipe is connected to the outer box.
Fill the outer gap with cement.



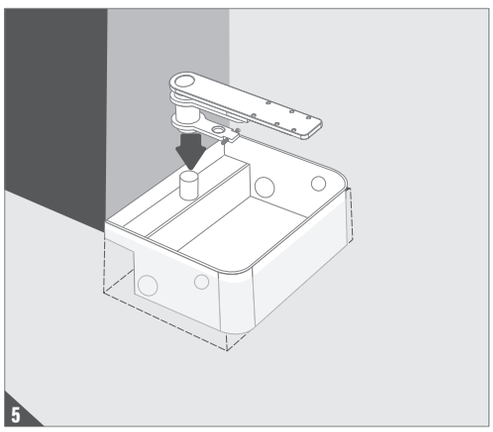


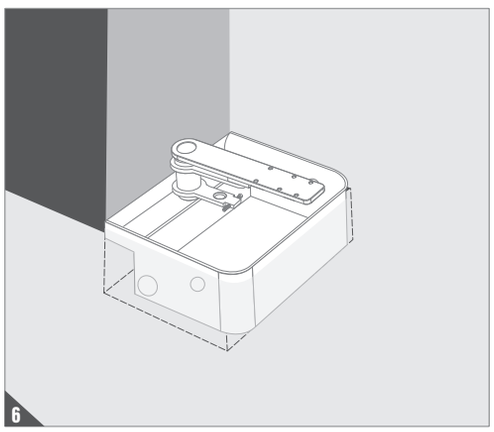
Please adjust the outer box level with the ground, and align the metal pin of the outer box with the gate shaft, wait for more than one day and confirm that the cement is completely dry.



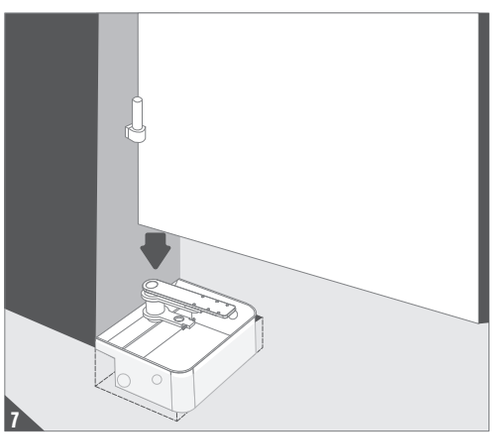


Please install the main arm and connecting arm to the metal pin, and lubricate the junction properly.



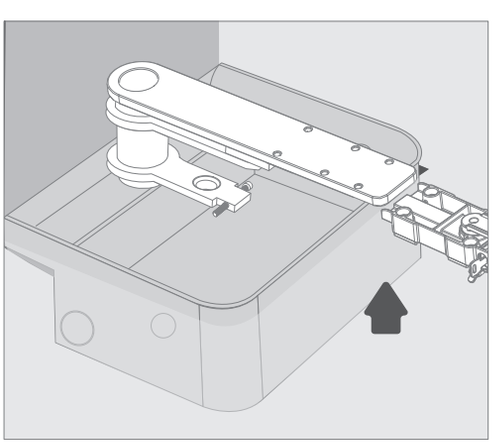


Put the gate back and confirm that the gate can be opened and closed smoothly, then fasten the gate and the main arm.



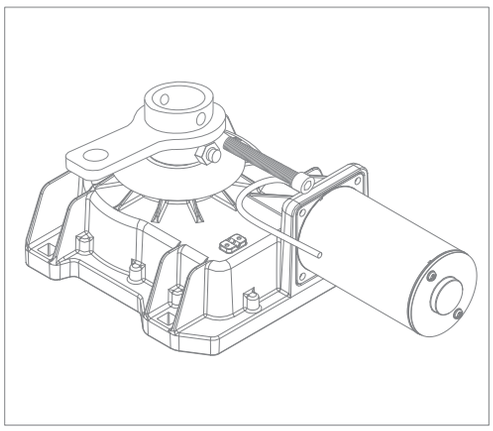
● INSTALL RELEASE SET

Please lubricate the joint of the release set before installation, and use screws to lock the release set on the main arm.

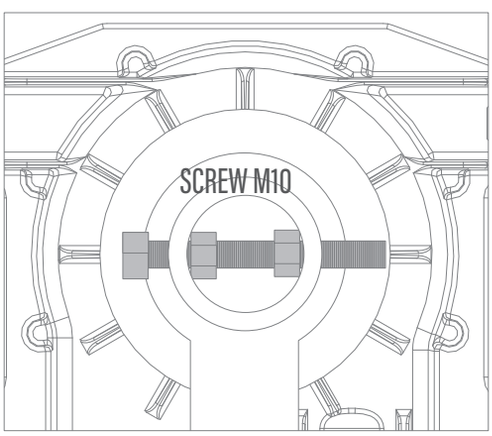


● INSTALL THE MOTOR

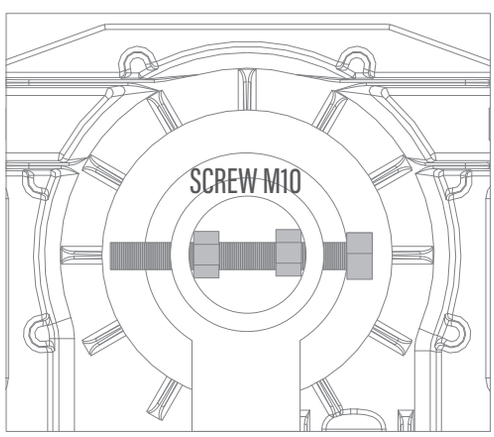
Adjust the position of the screw according to the picture below, and adjust it according to the left and right motors .



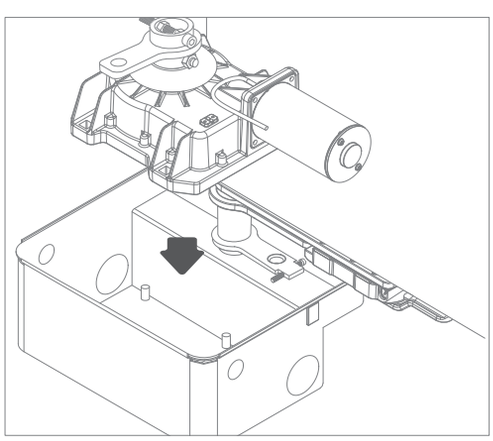
● LEFT SIDE

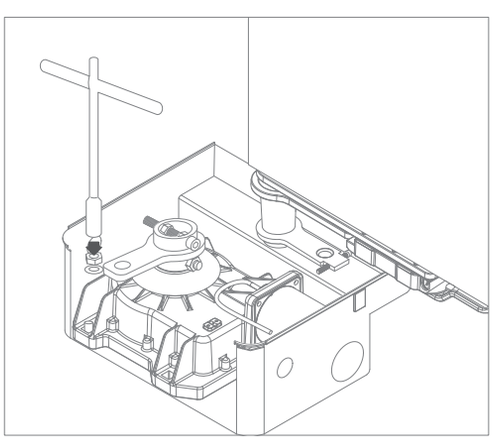


● RIGHT SIDE

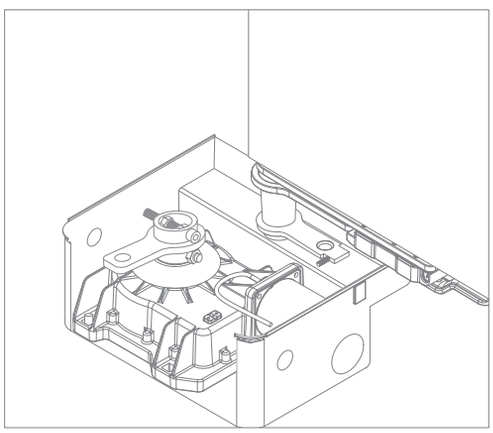


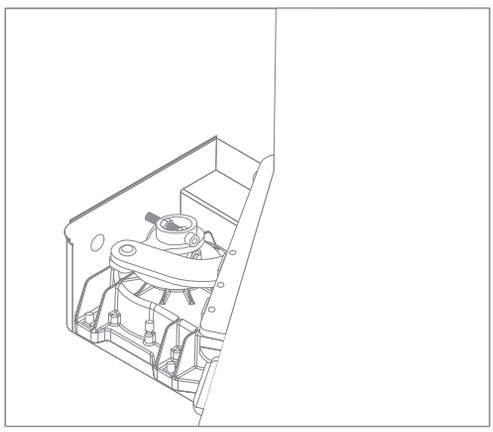
Fasten the motor on the outer box with nuts .





Release and move the door to 75% of the travel. Install the articulated arm between the motor and the release set, please lubricate the joint properly.





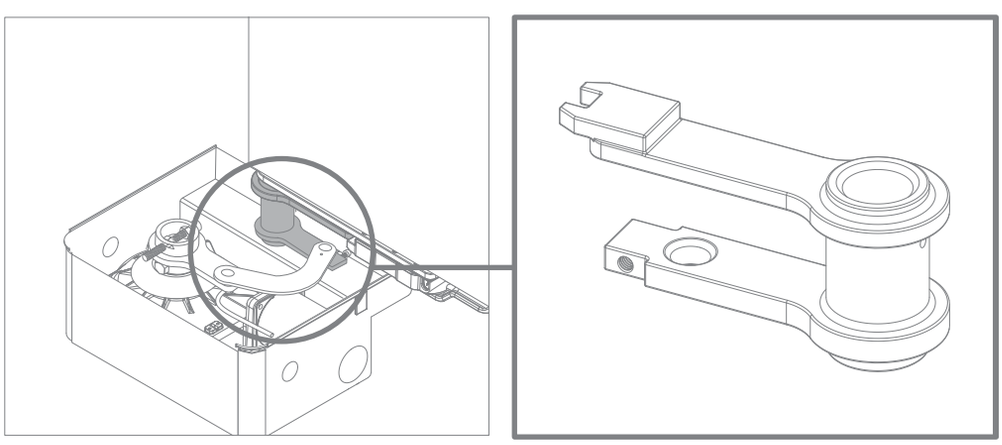
C3. SET UP THE POSITION OF THE END POINTS

- SET UP THE OPEN POSITION

1. Open the gate to the maximum angle
2. Loosen and extend the screw until it touches the outer box
3. Tighten the nut to fix the screw position

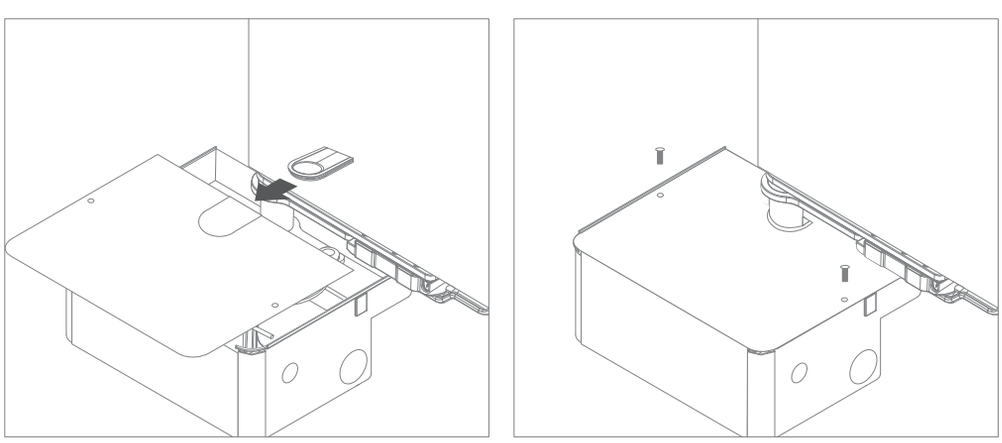
- SET THE CLOSED POSITION

4. After the screw is loosened, move the gate to the closed position
5. Tighten the screw until the screw touches the articulated arm to determine the closed position
6. Tighten the nut to fix the screw position



- INSTALL THE COVER

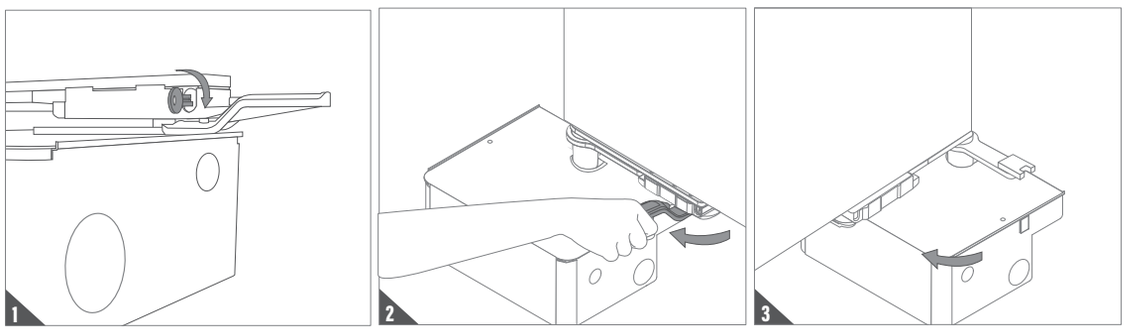
Put the upper cover on the outer box and fix it with screws.



C4. MANUAL RELEASE OF THE MOTOR

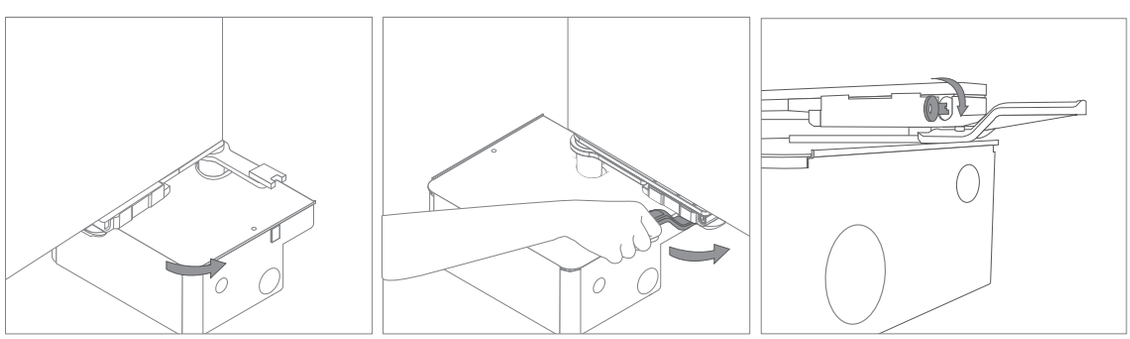
● TO UNLOCK THE DEVICE

1. Insert the key and unlock
2. The lever turns to 90°.
3. The gate leaf can be moved manually to the desired position with lever .



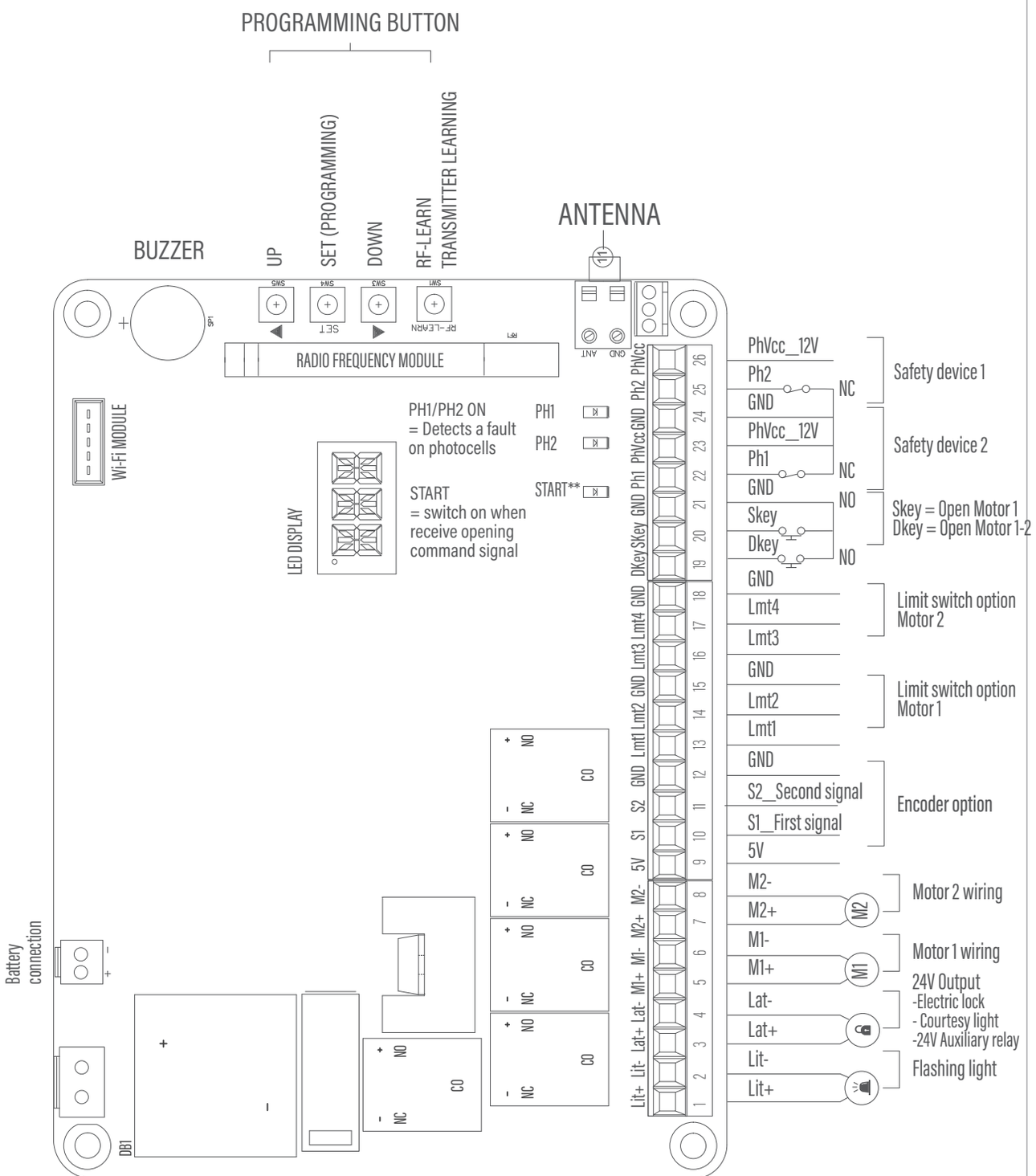
● TO LOCK THE DEVICE

1. Move it back to closed position .
2. The lever turns to 180°
3. Insert the key and lock



D. COMISSIONING

D1. PC190U CONTROL BOARD



MOTOR is the MASTER Motor that will open first and close last.

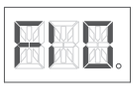
WARNING !

When powering on for the first time, the LED display will show N-L = System learning not completed.
DURING STANDARD OPERATION, the photocells are wired and aligned, the 3 LED indicator are OFF.
Control : By passing your hand in front of the photocell beam, LED 1 will switch ON.

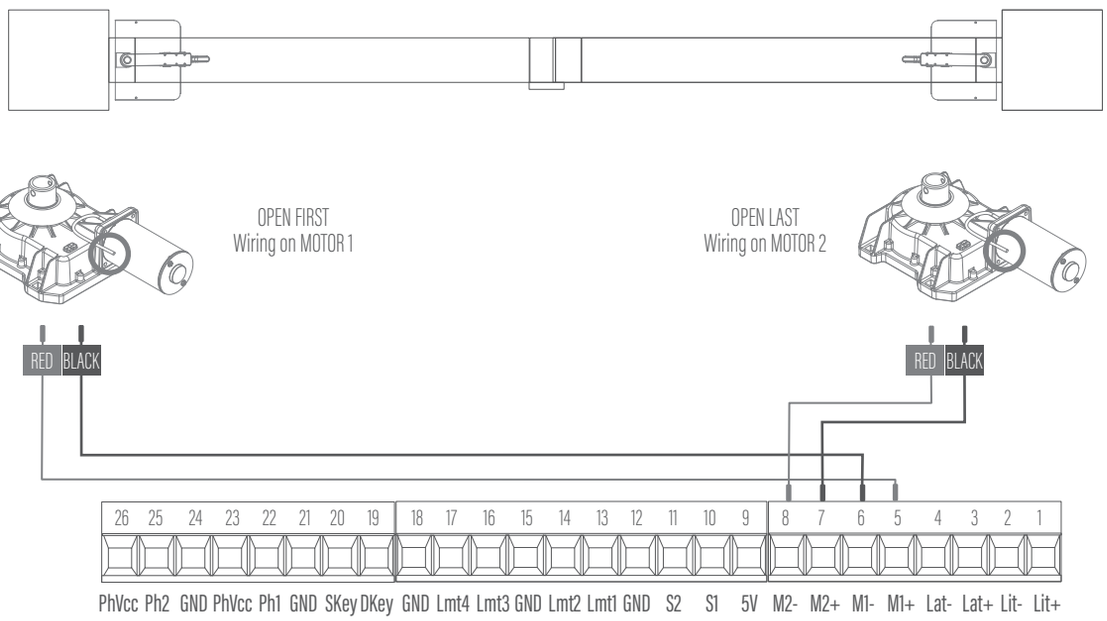
D2.MOTOR WIRING

- MOTOR WITHOUT LIMIT SWITCH

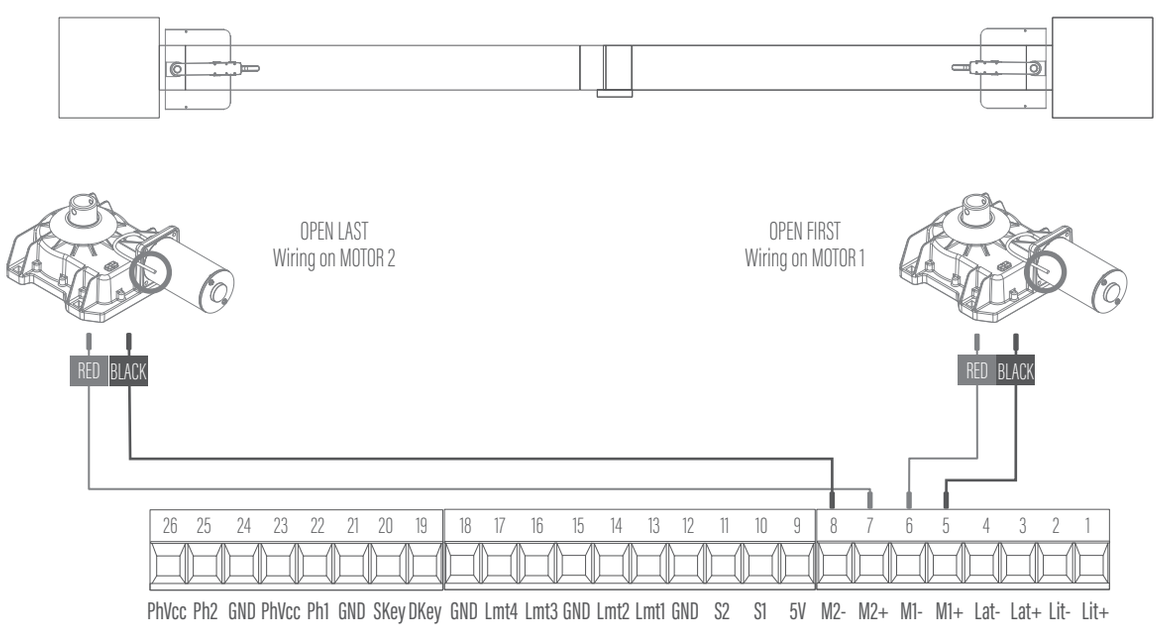
⚠ *MANDATORY : Make sure stoppers are placed on the ground or on the motors*

- Refer to parameter table - PARAMETER  (DEFAULT SETTING)

- MOTOR 1 INSTALLED ON THE **LEFT** PILLAR

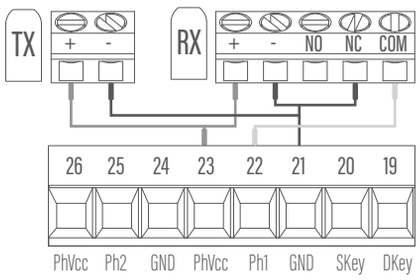


- MOTOR 1 INSTALLED ON THE **RIGHT** PILLAR

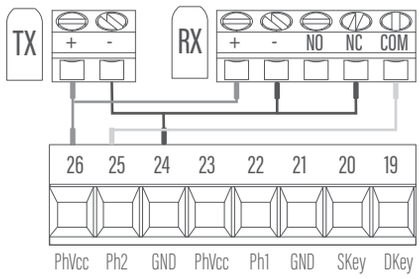


D3. WIRING OF ACCESSORIES

- SAFETY DEVICE 1 WIRING

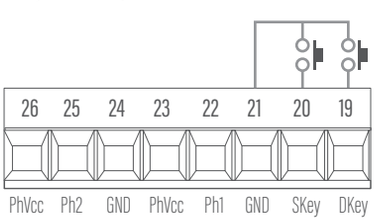


- SAFETY DEVICE 2 WIRING

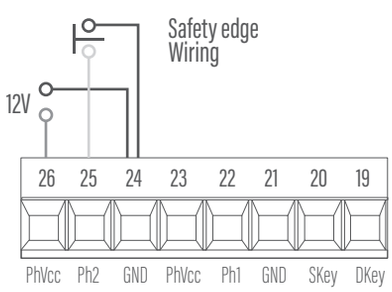


- AUXILIARY DEVICE WIRING

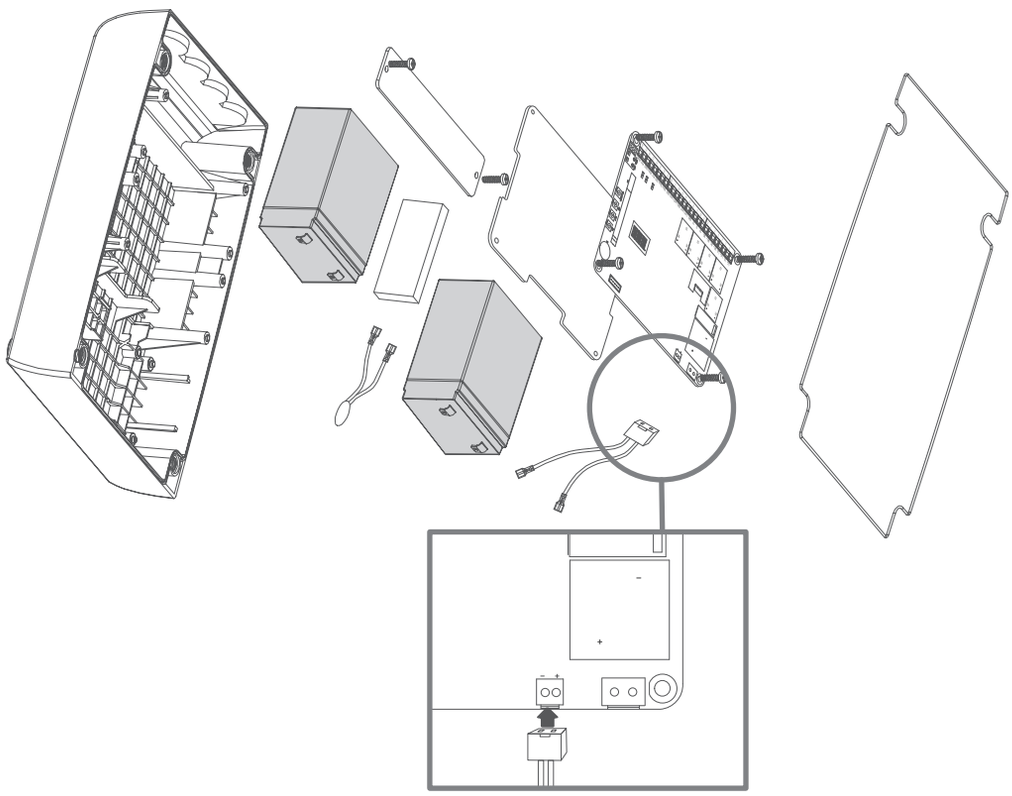
Dkey : Complete open
Skey : Partial open



- 12V AVAILABLE TO POWER ACCESSORIES



- Battery wiring (optional)



D4. ELECTRICAL CONNECTION SPECIFICATIONS

Terminal	230V System
Lit +/-	Max 36V (Only for 24v) / Max 0.5A
Lat +/-	Max 36V (Only for 24v) / Max 10A
M1 +/-	Max 36V (Only for 24v) / Max 8A
M2 +/-	
5V	Max 5V/ Max 50mA
S1 / S2	Max 5V/ Max 0.5mA
Lmt 1/2	
Lmt 3/4	
Dkey	Max 5V/ Max 1mA
Skey	
Ph1	Max 12V/ Max 1.2mA
Phvcc	Max 14V/ Max 0.5A
Ph2	Max 12V/ Max 1.2mA
Phvcc	Max 14V/ Max 0.5A

D5. REMOTE LEARNING

MANDATORY : Before processing system learning, you must first memorize the remotes.

● OPEN/CLOSE/STOP ON DUAL GATE

Press RF Learn button. The LED display show [OSC] .
Press and hold a button on the remote for at least 1 second then release. [OSC] blinks 3 times, completing the memorization process.
You have 10 seconds to memorize another remote.

● OPEN/STOP/CLOSE ON SINGLE GATE (PEDESTRIAN OPENING)

Press RF Learn button . Press RF button a 2nd time, the LED display show [PED] .
Press and hold a button on the remote for at least 1 second then release. [PED] blinks 3 times, completing the memorization process.
You have 10 seconds to memorize another remote.

● REMOTE LEARNING WITHOUT CONTROL BOARD

Press the button on the NEW radio transmitter and hold it down for at least 5s, then release it.
Press the button on the OLD radio transmitter 3 times. (Tip: Don't press too fast; make sure you see the blue flash when pressing the button each time.)
Press the button on the NEW radio transmitter once.
Done, at this point the NEW radio transmitter will copy the same command of the OLD one.

● DELETING MEMZORY OF SINGLE COMMAND

Single deletion stage is needed for each memorized button.
Press and hold down RF-LEARN button (Figure1) on the control board for 5 seconds.
Wait until the LED display shows "DKY", then, within three seconds:
Press the button of the remote to be deleted. If the remote has been deleted, the LED display will flash quickly five times.
Repeat above steps if more button to be deleted.

● RESET (DELETE) ALL THE REMOTES

Press and hold RF button. After 10 seconds, the LED display will first show [DKY]
then [DAL] that confirms that all the transmitters have been deleted.

D6. SYSTEM LEARNING

- PRE-CHECK UP BEFORE LEARNING PROCEDURE

Please make sure motors are well installed.
Please make sure the photocells are well installed or turn off the photocells parameter.
The stoppers or limit switchs are installed and adjusted.
The remotes are memorized.
Unlock the motors. Manually move the gate to 75% of the travel and lock the motors.

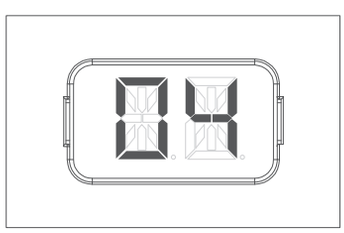
- SYSTEM LEARNING PROCEDURE ⚠ MANDATORY

1. Press and hold SET for 3 seconds.
2. The LED display [LEA] . Release the button to launch the system learning procedure.

The first movement of the motors must be in the closing direction. If it is not the case, power off and invert the wiring of the 2 motors M+/M-

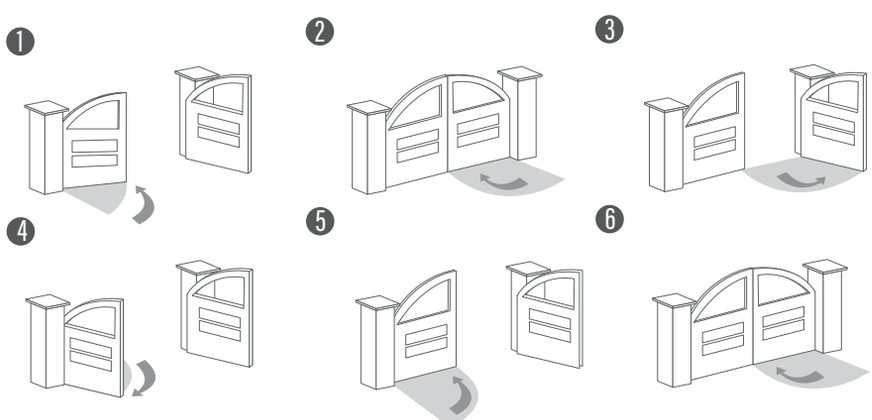
3. , The motor(s) perform(s) closing/opening movements then stop.
4. , The display of [DG] (2 motors) or [SG] (1 motor) confirms that the learning procedure has been completed successfully..

During the learning phase, the LED display the motor power consumption (in Ampere). If this value fluctuates a lot during the gates movement, make sure to verify if there are any hard spots.



- DUAL GATE MOVEMENT DURING SYSTEM LEARNING PROCEDURE :

1. Motor 2 close
2. Motor 1 close
3. Motor 1 open
4. Motor 2 open
5. Motor 2 close
6. Motor 1 close



D7.RESET TO DEFAULT SETTINGS

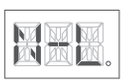
1. Press and hold down ▲ / SET / ▼ on the control board for 5 seconds .
2. The LED display [CLR] confirming that the system has successfully returned to default settings .

Release the buttons => The LED display [N-L] (System learning not completed)

D8. PROGRAMMING

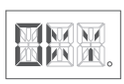
● INDICATIONS ON THE LED DISPLAY

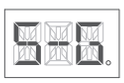
⚠ *During the programming and operation, the LED display is ON and provides indications.*
After the motor operates 2 sec, the LED display will show real-time current.

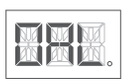

N-L = System learning not completed

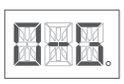

CLR = Return to default setting

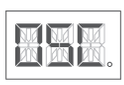

LEA = In process of system learning

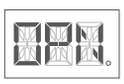

DKY = Deleting memory of single command

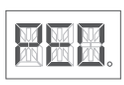

S-G = Completed system learning for single gate

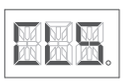

DAL = Deleting all memory of all remotes

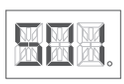

D-G = Completed system learning for dual gate

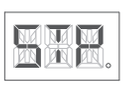

OSC = Remote Learning - Open/Close/Stop On Dual Gate


OPN = Motors in opening phase


PED = Remote Learning - Open/Stop/Close On Single Gate (Pedestrian Opening)


CLS = Motors in closing phase


S01 = The panel did not detected the M1+/M1 and M2+/M2 both been connected before the system learning procedure , check for 2 motor wire connection , for dual gate system.


STP = Stop (display for 10second)

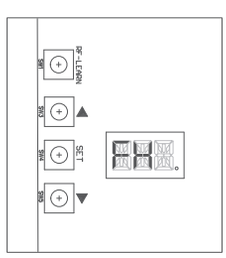

S02 = The panel did not detected the M1+/M1 but detected M2+/M2 been connected ,notice the installer to check the motor wire connection , if this is single gate system , motor wire should connect to M1+/M1 not on M2+/M2

● PARAMETER SETTINGS

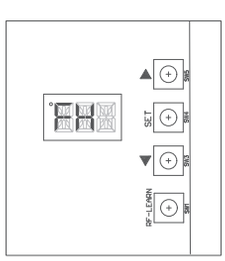
⚠ *WARNING ! Depending on the placement of the control unit, the programming buttons may be located on the right or left side, the RF button at the top or bottom . (FH LED Direction)*

1. Press and hold ▲ / SET for 3 seconds.
2. The LED display « F1 » parameter setting.
3. Select main setting with ▲ / ▼ then confirm with SET
4. Display of the sub-setting (ex: parameter F1-subvalue=1)
5. Modify sub-setting value with ▲ / ▼ (ex: F1-0, F1-1, F1-2・・・)
6. Validate sub-setting with SET.
7. Press ▲ / ▼ to display and configure other settings・・・.

⚠ *The LED display will switch off after 8 seconds if no button is pressed.*



When terminal block is at top



When terminal block is at bottom

D9. PARAMETER TABLE

SETTING	DESCRIPTION	DEFAULT SETTING
F1	Motor type F1-0 Overcurrent F1-1 Limit Switch F1-2 Hall Sensor	F1-0
F2	Overcurrent for Gate Opening F2-0 2A F2-1 3A F2-2 4A F2-3 5A F2-4 6A F2-5 7A F2-6 8A F2-7 9A F2-8 10A	F2-1
F3	Overcurrent for Gate Closing F3-0 2A F3-1 3A F3-2 4A F3-3 5A F3-4 6A F3-5 7A F3-6 8A F3-7 9A F3-8 10A	F3-1
F4	Motor Speed for Opening F4-0 40% F4-1 50% F4-2 75% F4-3 100%	F4-2
F5	Motor Speed for Closing F5-0 40% F5-1 50% F5-2 75% F5-3 100%	F5-2
F6	Deceleration Speed F6-0 40% F6-1 50% F6-2 60% F6-3 70%	F6-1
F7	Time gap b/w two gates (opening) F7-0 0 sec F7-1 2 sec F7-2 5 sec F7-3 10 sec F7-4 15 sec F7-5 20 sec F7-6 25 sec F7-7 35 sec F7-8 45 sec F7-9 55 sec	F7-1
F8	Time Gap b/w Two Gates (Closing) F8-0 0 sec F8-1 2 sec F8-2 5 sec F8-3 10 sec F8-4 15 sec F8-5 20 sec F8-6 25 sec F8-7 35 sec F8-8 45 sec F8-9 55 sec	F8-1

F9	Auto-Closing		F9-0
	F9-0 Function OFF F9-1 3 sec F9-2 10 sec F9-3 20 sec F9-4 40 sec F9-5 60 sec F9-6 120 sec F9-7 180 sec F9-8 300 sec	Auto-close mode activates when the gates move to the end position or stopped manually. If the transmitter , push button , or the key selector is activated before the auto-close counting , the gate will close immediately.	
FA	Safety Device Function Mode		FA-0
	FA-0 Mode 1 FA-1 Mode 2 FA-2 Mode 3 FA-3 Mode 4	Please see D10.SAFETY DEVICE LOGIC for photocell logic.	
FB	Pedestrian Mode		FB-1
	FB-0 Function OFF FB-1 Function ON		
FC	Flashing Light		FC-0
	FC-0 Function OFF FC-1 Function ON	When funtion FC-1 ,will flash for 3 seconds before the gate operates. If set OFF , the flash light will operate with motor at the same.	
FD	Photocell Activation		FD-0
	FD-0 Function OFF FD-1 Function ON		
FE	Photocell 2 Activation		FE-0
	FE-0 Function OFF FE-1 Function ON		
FF	Alarm Buzzer		FF-0
	FF-0 Function OFF FF-1 Function ON		
FG	Electric Latch Mode		FG-1
	FG-0 Standard gate opening FG-1 Opening(gate reversing for 0.25s)	If the function is FG-1 , motor will be reversed for 0.25 sec to release the tension.	
FH	LED Direction		FH-1
	FH-0 When terminal block is at top FH-1 When terminal block is at bottom	The UP▲and Down▼buttons will switch according to the parameter setting. When FH-0 , button SW5 stands for ▼Down . When FH-1 , button SW5 stands for ▲Up , and button SW3 stands for ▼ Down .	
FI	Dual / Single gate		FI-1
	FI-0 Single gate FI-1 Dual gate		
FJ	Overcurrent reverses time when close		FJ-0
	FJ-0 Function OFF FJ-1 0.1 sec FJ-2 0.2 sec FJ-3 0.3 sec FJ-4 0.4 sec FJ-5 0.5 sec FJ-6 0.6 sec		

Note (overcurrent setting in hall sensor mode F1-2)

Only in "F1-2" hall sensor mode , the PCB will record all the current value in learning mode.

Please adjust over current value by setting F2 , F3 function after learning mode.

The recorded current values will increase according to the value shown on LED display as over current value.

D10. SAFETY DEVICE LOGIC

FA-0 Photocell open/close (standard set up)		
Position of gate	When safety devices are activated	
Type of safety device	PH1 Photocell-CLOSE	PH2 Photocell-OPEN
Fully closed	No effect	Open not allowed
Fully opened	Reload automatic closing time	No effect
Stop during moving	Reload automatic closing time	Open not allowed
Closing	Open	No effect
Opening	No effect	Close

FA-1 Safety edge		
Position of gate	When safety devices are activated	
Type of safety device	PH1 Photocell-CLOSE	PH2 Safety edge
Fully closed	No effect	Open not allowed
Fully opened	Reload automatic closing time	
Stop during moving	Reload automatic closing time	Open/close not allowed
Closing	Open	Reverse to open for 2 seconds
Opening	No effect	Reverse to close for 2 seconds

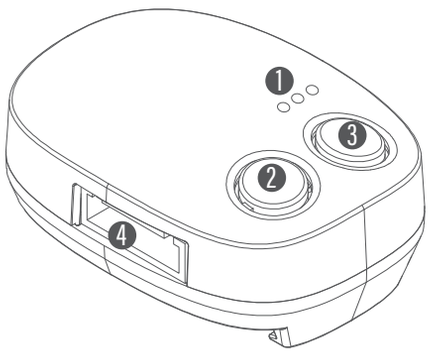
FA-2 Open only device (Vehicle detector)		
Position of gate	When safety devices are activated	
Type of safety device	PH1 Photocell-CLOSE	PH2 Opening device
Fully closed	No effect	Open
Fully opened	Reload automatic closing time	
Stop during moving	Reload automatic closing time	Open
Closing	Open	Open
Opening	No effect	No effect

FA-3 Double photocell set up		
Position of gate	When safety devices are activated	
Type of safety device	Photocell-Fasting closing	Photocell-OPEN
Fully closed	No effect	Open not allowed
Fully opened	Closing after 2 seconds	No effect
Stop during moving	Close not allowed	Open not allowed
Closing	Open	No effect
Opening	No effect	Close

● Auto-closing refer to F9 setting

E. SMARTPHONE CONTROL WITH EYEOPEN MOBILE APPLICATION

E1.Wi-Fi/Bluetooth BOX



1. LED display
2. R button (press to restart)
3. P button
4. Terminals

- LED INDICATORS

Blue LED
The blue LED is an indicator of connection of Bluetooth.
The blue LED blinking indicates the WB3 is waiting for pairing.
The blue LED is **ON** when WB3 is connected to Bluetooth.
Green LED
The green LED is an indicator of Wi-Fi signal.
The green LED blinking indicates weak Wi-Fi signal.
Red LED
The red LED blinking indicates wrong operations or system errors.
Please refer to FAQ when the red LED is **ON**.

- BUTTON AND FUNCTION

R button: A reset button

P button: A pairing button
To restore the default settings: Press and hold the P button for 5 seconds and press the R button once. The blue LED will flash to indicate that the reset is complete.

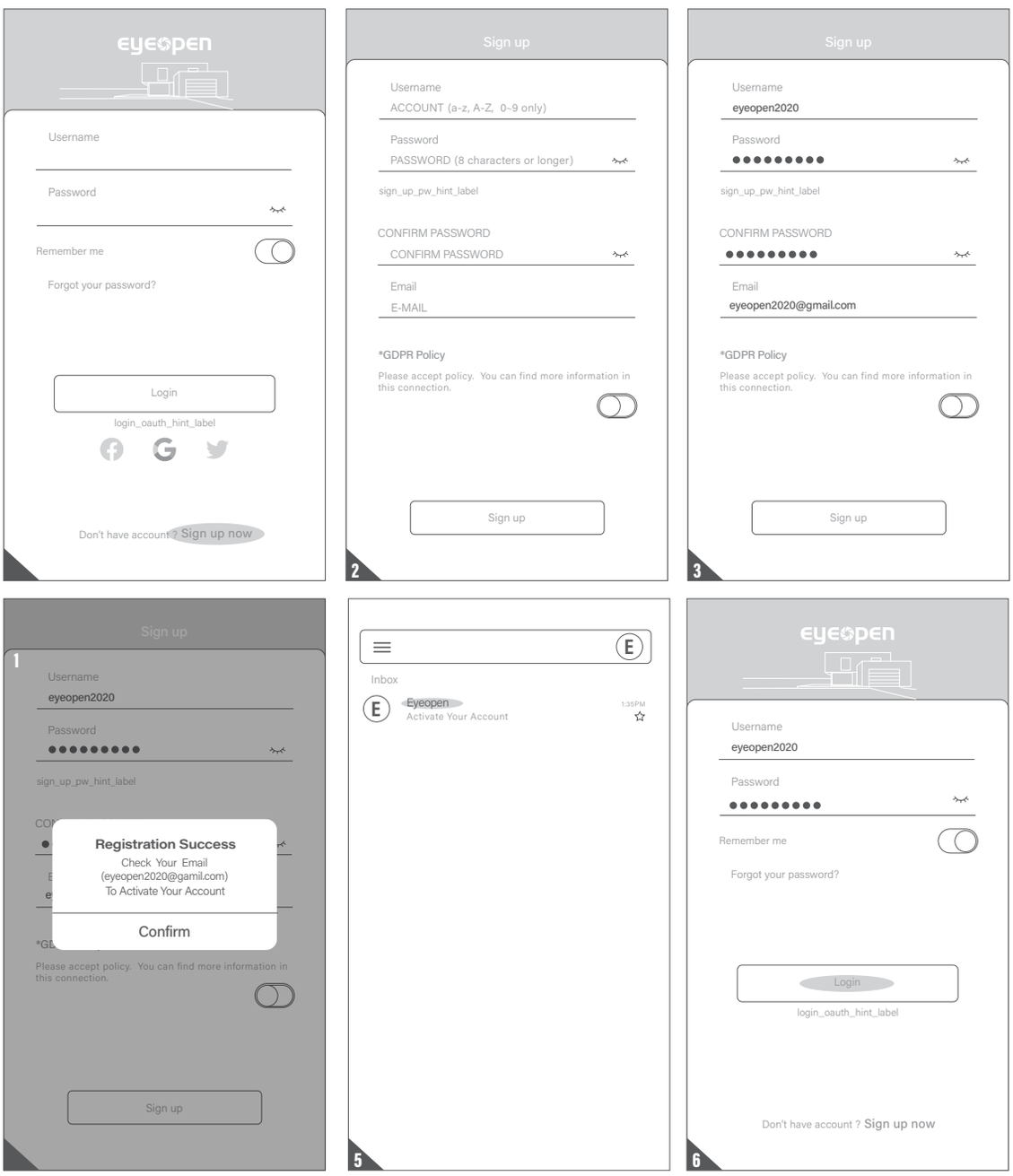
E2.Eyeopen SYSTEM

Eyeopen is the App system on the smartphone provided by Powertech, allows you to operate your Powertech gate automations remotely through this App.

E3. APPLY FOR A NEW ACCOUNT

1. Please scan the QR code and download Eyeopen.
2. Press sign up icon and press the agree icon to continue
3. Please type the following information for registration:

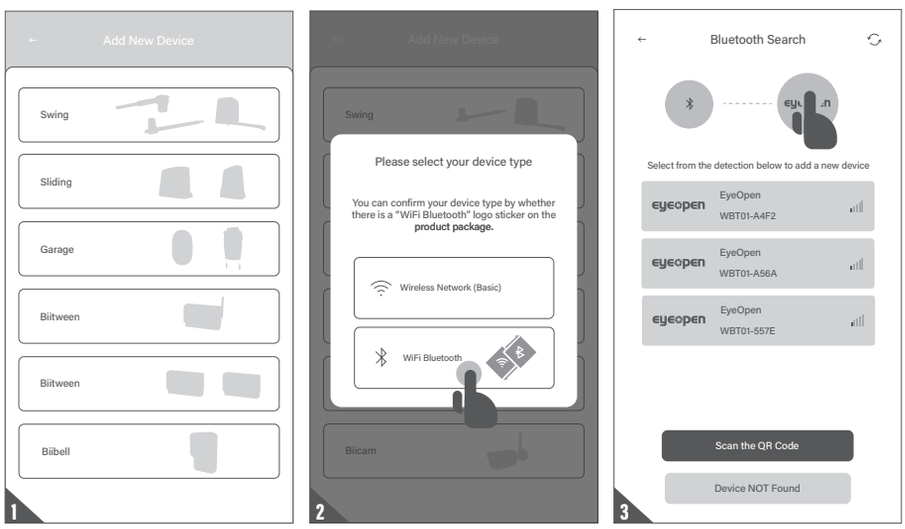
   a. Password (enter twice for verification)
   b. The password should have at least 1 English character and at least 8 characters/numbers in total.

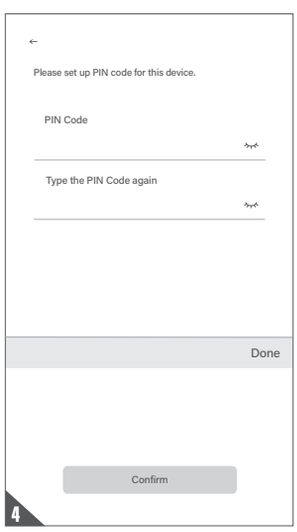


4. The system will send a link to your email when the registration succeeds
5. Please go to your email , and click the link to activate your account.
6. Please log in to your account.

E4. CONNECTING TO Eyeopen

1. Please login your Eyeopen account. (Turn on the Bluetooth function of your smart phone.)
2. Tap the (+) icon to add a new device. Choose your product from the list.
3. Tap the Bluetooth icon and tap the device you are going to connect.
4. Set a PIN code twice and confirm.
5. Choose the device you are going to connect at available Eyeopen interface.
6. The device will start connecting.
7. After countdown, the device will show on the main page.



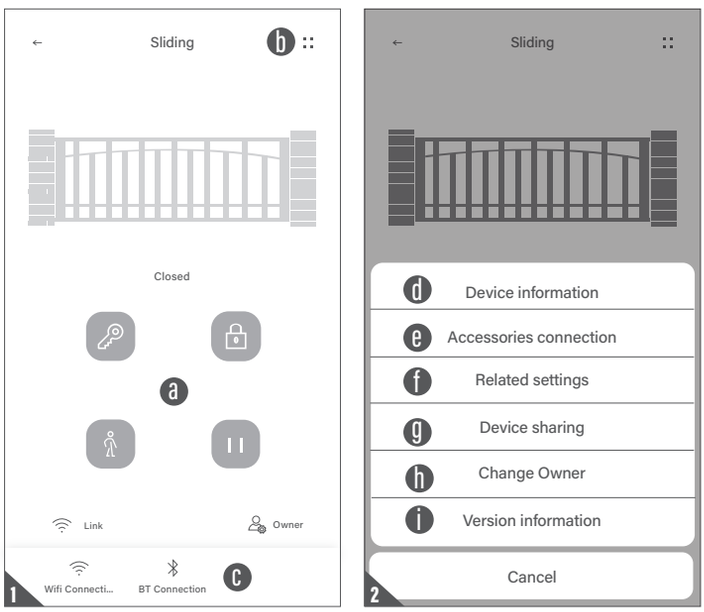


Please keep your PIN code for further usage. PIN code will be used when you
1. Login on the new smart phone / 2. Enter the parameter settings interface. / 3. Return to the factory default.

If you forgot your PIN code, please follow the indications in FAQ - Question 7 - Return to the factory setting

E5. OPERATION PAGE

1. Open / Stop / Close / Pedestrian
2. Settings page

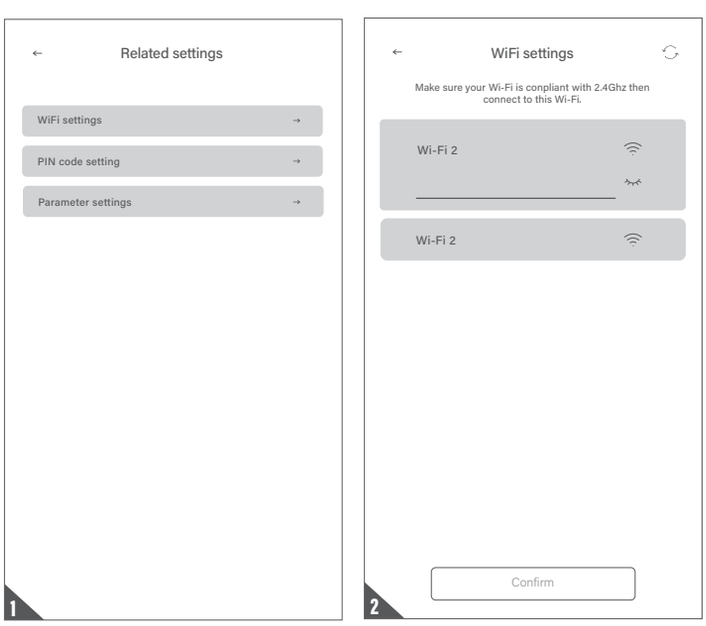


a. Operation button
b. Setting page
c. Wifi / Bluetooth icon
d.Device information
e.Accessories connection
f .Related settings
g.Device sharing
h.Change Owner
i .Version information

E6. RELATED SETTINGS – Wi-Fi SETTINGS

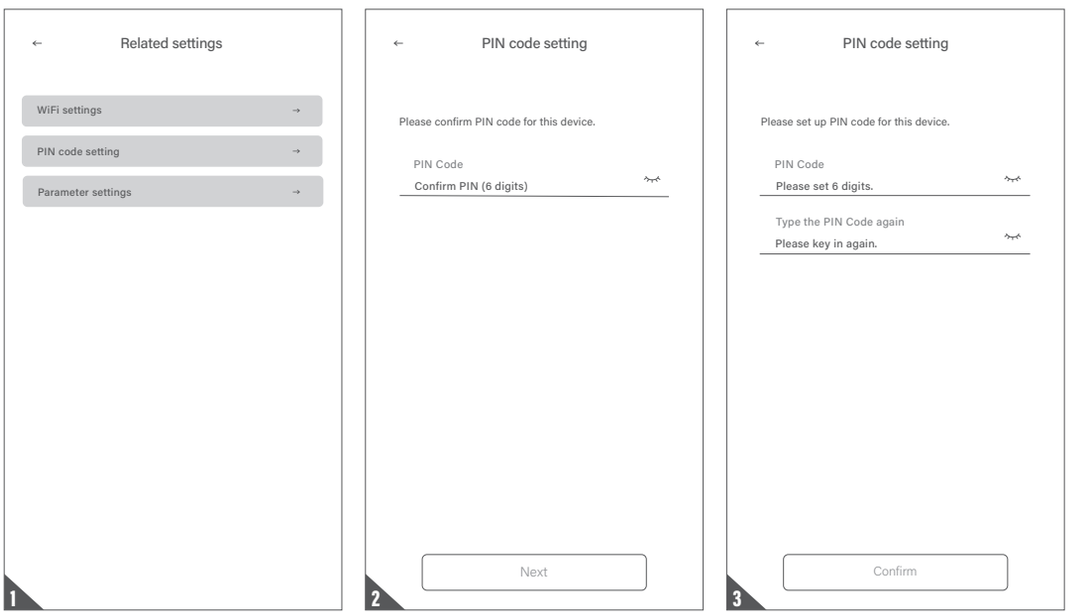
1. Tap the Wi-Fi setting page to enter.
2. Select a new Wi-Fi . Tap confirm to start connection.

Please make sure the password is correct .



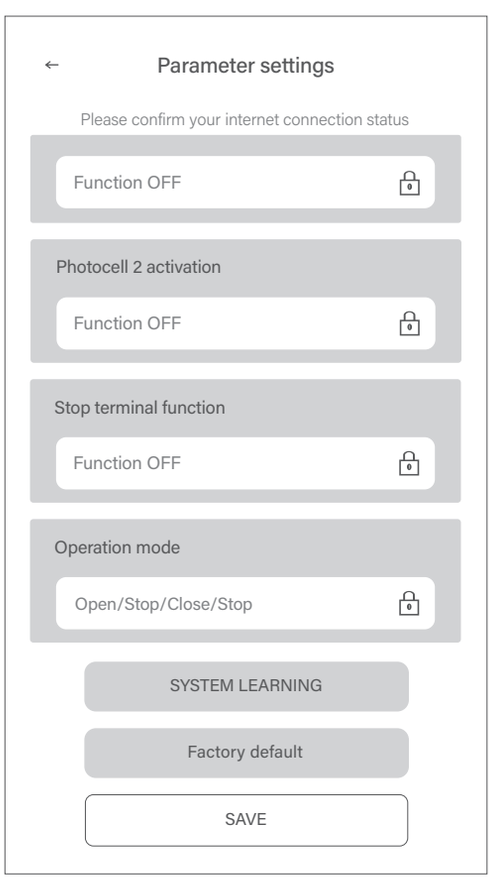
E7. RELATED SETTINGS - PIN CODE SETTING

1. Tap the PIN code setting to enter.
2. Enter current PIN code
2. Set a new PIN code and confirm.



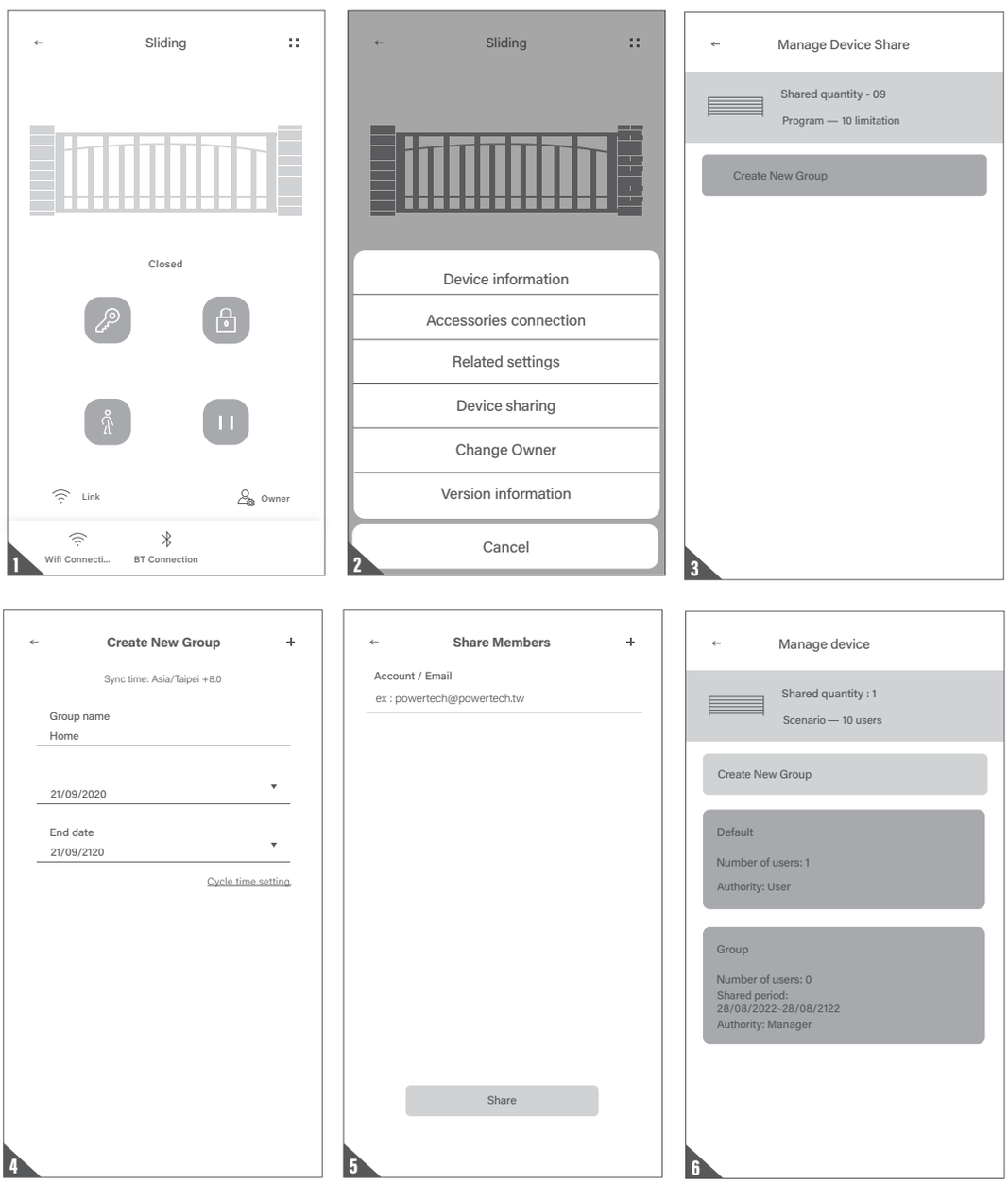
E8. RELATED SETTINGS - PARAMETER SETTINGS

1. Tap the Parameter settings to enter.
2. Key in the PIN code
3. Change the parameter and save your changes.
4. Start the system learning via Eyeopen.



E9. OWNER SHARE DEVICE TO USERS

1. Tap the device on you main interface and enter the operation page.
   Tap the (::) icon to enter the setting page.
2. Tap the device sharing.
3. Tap the create new group.
4. Name your group and set a duration for this group.
5. Invite users by an Eyeopen account and tap share.
6.The group icon will show at the (Device sharing) page



E10. PUSH NOTIFICATION

1. Press the icon on the upper left corner to enter the account management page.
2. Tap the push notification setting.
3. Turn **ON** the switches of the notification.

Please go to the settings page of your smartphone. Find Eyeopen and allow the notifications.

E11. FAQ

Question 1

The blue LED is **NOT** blinking when pairing.

Answer 1

Press the P button for 5 seconds and press the R button.

Question 2

Blue and green LED blinks alternatively when connecting to Eyeopen by the first user.

Answer 2

Entering a wrong password to your Wi-Fi network.

Question 3

Red LED blinks when connecting to Eyeopen by the first user.

Answer 3

The Eyeopen cannot get a IP from the router. Please disconnect other device.

Question 4

Red LED blinks when enter the PIN code.

Answer 4

Entering the wrong PIN code. Please confirm the correct PIN code with the first user.

Question 5

Green LED blinks.

Answer 5

The Wi-Fi signal is weak. Please adjust the antenna of the Wi-Fi box or adding an Wi-Fi amplifier to enhance Wi-Fi signal.

Question 6

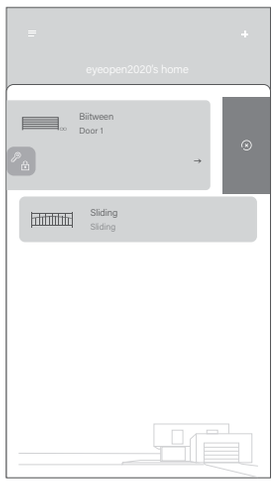
Red LED on.

Answer 6

Red LED on indicates a system error. Please return to the factory setting as mentioned below.

Question 7

Return to the factory setting.



Answer 7

Return to the factory setting is used when you lose your PIN code for sharing the device.
After return to the factory setting, please follow the previous indications to reconnect Eyeopen.
Slide the device icon on the main page and tap the (delete) icon.
Open the cover of your motor and get to the Wi-Fi box.
Press the P button for 5 seconds and press the R button once.
The blue LED of the Wi-Fi box is blinking which indicates the device has returned to the factory default.

Please refer to page E4. CONNECTIONG TO Eyeopen

Question 8

How should I change my PIN code.

Answer 8

Enter the operation page of the device in EyeOpen ➡ Click the (Device Parameters) in the setting page ➡ Tap (Reset PIN).

F. TECHNICAL SPECIFICATIONS

Model Name	PU350
Category	Underground gate opener
Max gate length	3.5 meters
Max gate weight	350 kilos
Power supply	110-240Vac (50-60Hz)
Motor power supply	24Vdc
Gear type	Worm gear
Duty cycle	50%
IP Rating	IP X7
Working/Operating temperature	-20°~55°C
Current (A)	10.5A
Power (W)	250W
Release	Key
Dimensions	389mm x320mm x 222mm

G. MAINTENANCE AND TROUBLESHOOTING

MAINTENANCE

Conduct the following operations at least every 6 months. For intensive use scenarios, shorten this delay.

Disconnect the power supply

1. Clean and lubricate the screws, hinges with grease.
2. Make sure the fastening are properly tightened.
3. Make sure the wire connection is in good functioning conditions.

Connect the power supply

1. Double check the parameter settings.
2. Check the manual release.
3. Check the photocells and other safety devices.

TROUBLESHOOTING

Problem	Solution
The gate is not moving when pressing the buttons on the remote	1. Check if LED2 blinks when pressing buttons on the remote . 2. Check if the voltage on the batteries is above 22V . 3. Check if LED3-4 are "ON". 4. Make sure all the wires are connected to the PCB terminals 5. Make sure the fuse is fully functional on the panel and power socket.
Transmission range on the remote/keypad is too short	1. Make sure the antenna is well attached and screwed on the control board 2. Make sure there is no obstruction of the antenna (power or motor cables) 3.Please check the battery .
Flashing light does not function	1. Make sure the wiring is correct
The gate stops during movement.	1. Manually move the gate and check if there are any hard spots 2. Increase the F2-F3 settings (Force)
The gate does not move or only move towards a single direction.	1. Verify the motors wiring. 2. Check the fuse status . 3. Make sure there are no obstacles obstructing the photocells beam. 4.Increase the F2-F3 settings (Force) .
One gate fully closes but the other gate stops.	1. Manually move the gate and check if there are any hard spots. 2. Verify the motors wiring. 3. Check the fuse status 4. Make sure there are no obstacles obstructing the photocells beam. 5. Increase the F2-F3 settings (Force)