



Single Swing Gate Opener User's Manual

Model:

KNL100E-01

KNL200E-01

⚠ Please note, if the installation manual is not followed, any problem caused by improper installation or use will not be covered by warranty.

- ★ Please read and follow all warnings, precautions and instructions before installation and use
- ★ A 24VDC battery is required to power the gate opener. Adapter included in the package is used to charge the battery.
- ★ Never connect the solar panel to the control board directly to charge the battery.
- ★ Periodic checks of the opener are required to ensure safe operation
- ★ Save this manual

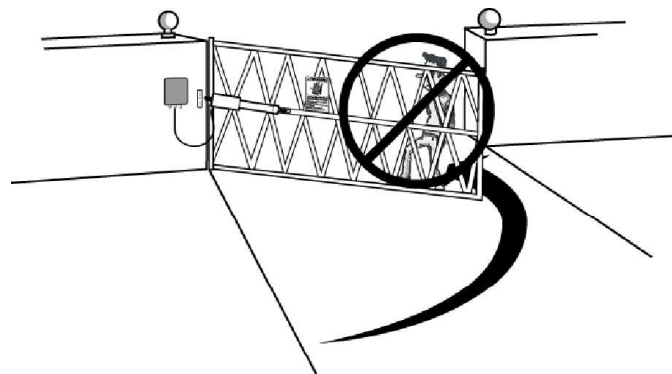
 N27983

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Safety Installation Information

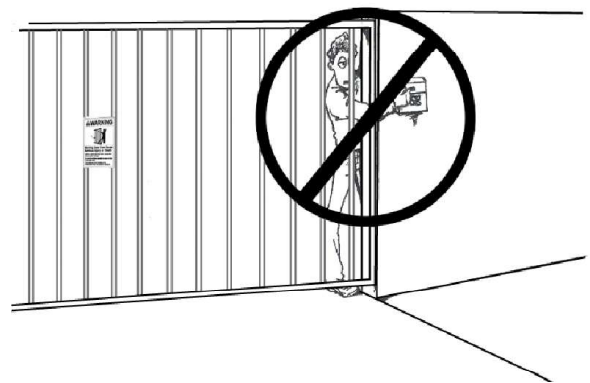
1. READ and FOLLOW all instruction.
2. The gate opener is intended for use with Class I vehicular swing gates.
Class I denotes a vehicular gate opener (or system) dwellings, a garage or parking area associated with. Install the gate opener only when the opener is appropriate for the construction and the usage class of the gate.
3. Gate opening system designers, installers and users must take into account the possible hazards associated with each individual application. Improperly designed, installed or maintained systems can create risks for the user as well as the bystander. Gate system design and installation must reduce public exposure to potential hazards. All exposed pinch points must be eliminated or guarded.
4. A gate opener can create high levels of force during normal operation. Therefore, safety features must be incorporated into every installation. Specific safety features include safety sensors.
5. The gate must be properly installed and work freely in both directions prior to the installation of the gate opener.
6. The gate must be installed in a location so that enough clearance is provided between the gate and adjacent structure when opening and closing to reduce the risk of entrapment. Swinging gates shall not open into public access areas.
7. The opener is intended for use only on gates used for vehicles. Pedestrians must be supplied with a separate access opening. The pedestrian access opening shall be designed to promote pedestrian usage. The pedestrian access shall be located where person(s) will not come in contact with the moving vehicular gate.



8. Pedestrians should never cross the pathway of a moving gate. The gate opener is not adequate for pedestrian use. Pedestrians must be supplied with

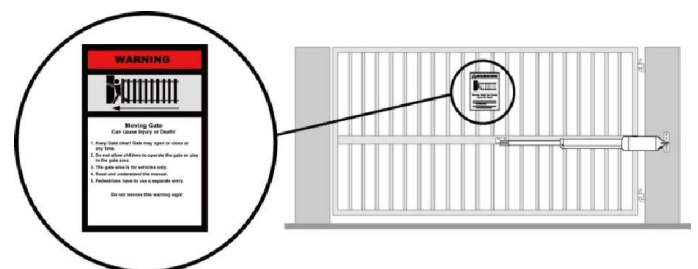
a separate pedestrian access.

9. For an installation utilizing non-contact sensors (safety sensors), see product manual on the placement of non-contact sensors (safety sensors) for each type of application.
 - a. Care shall be exercised to reduce the risk of nuisance tripping, such as when a vehicle trips the safety sensor while the gate is still moving.
 - b. One or more non-contact sensors (safety sensors) shall be located where the risk of entrapment of obstruction exists, such as the perimeter reachable by a moving gate or barrier.
10. Never mount any device that operates the gate opener where the user can reach over, under, around or through the gate to operate the controls. Controls are to be placed at least 6' (1.8m) from any part of the moving gate.



11. Controls intended to be used to reset an operator after 2 sequential activations of the entrapment protection device or devices must be located in the line of sight of the gate, or the controls that have easy access shall have a security feature to prevent unauthorized use. Never allow anyone to hang on or ride the gate during the entire travel of the gate.
12. Each gate opener is provided with two safety warning placards. The placards are to be installed on the front and back of the gate where they are fully visible. The placards may be mounted using cable ties through the four holes provided on each placard.

All warning signs and placards must be installed where visible from the gate area.



13. To AVOID damaging gas, power, or other underground utility lines, contact underground utility locating companies BEFORE digging.
SAVE INSTRUCTION.















 **WARNING**

To prevent SERIOUS INJURY or DEATH from a moving gate:

- Install warning signs on the front and back of the gate in PLAIN VIEW.
- Permanently secure each warning sign in a suitable manner using fastening holes.

14. Do not permit children to play on or around the gate and keep all controls out of their reach.

Parts List

 <p>Gate Opener (1 pc) <KLN100E-01></p>		 <p>Gate Opener (1 pc) <KLN200E-01></p>		
 <p>Control Box (1 pc)</p>	 <p>CE Remote Control (3 pcs)</p>		 <p>Warning Signs (2 pcs)</p>	
	 <p>Release Key (1 pcs)</p>			
 <p>AC Transformer (1 pc)</p>	 <p>Battery Cable (1 m)</p>	 <p>Post Bracket (2 pcs)</p>	 <p>Post Pivot Bracket For Pull To Open Gate Opener (1 pc)</p>	 <p>Gate Bracket (1 pc)</p>
Hardware				
 <p>Φ10 Washer (7 pcs)</p>		 <p>M10×200 Bolt (4 pcs)</p>		
 <p>Φ10 Lock Washer (7 pcs)</p>		 <p>M10×75 Bolt (2 pcs)</p>		
 <p>Φ8 Washer (1 pc)</p>		 <p>M10×30 Bolt (1 pc)</p>		
 <p>M10 Nut (7 pcs)</p>		 <p>M8×30 Bolt (1 pc)</p>		
 <p>M8 Nut (1 pc)</p>		 <p>12×40 Clevis Pin (1 pc)</p>		
 <p>Hairpin Clip (2 pcs)</p>		 <p>12×30 Clevis Pin (1 pc)</p>		

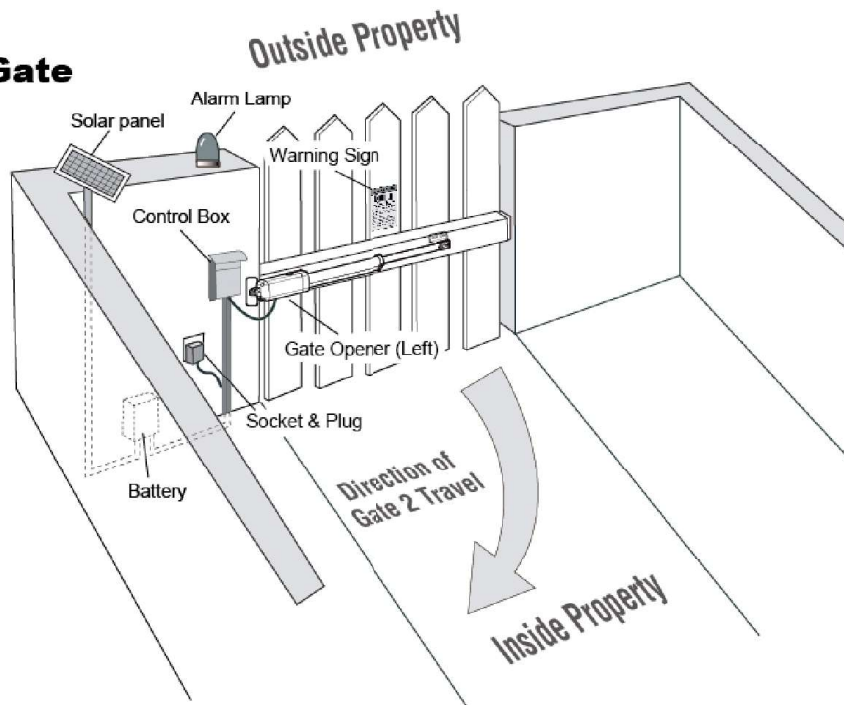
Installation Overview

Single Gate Overview

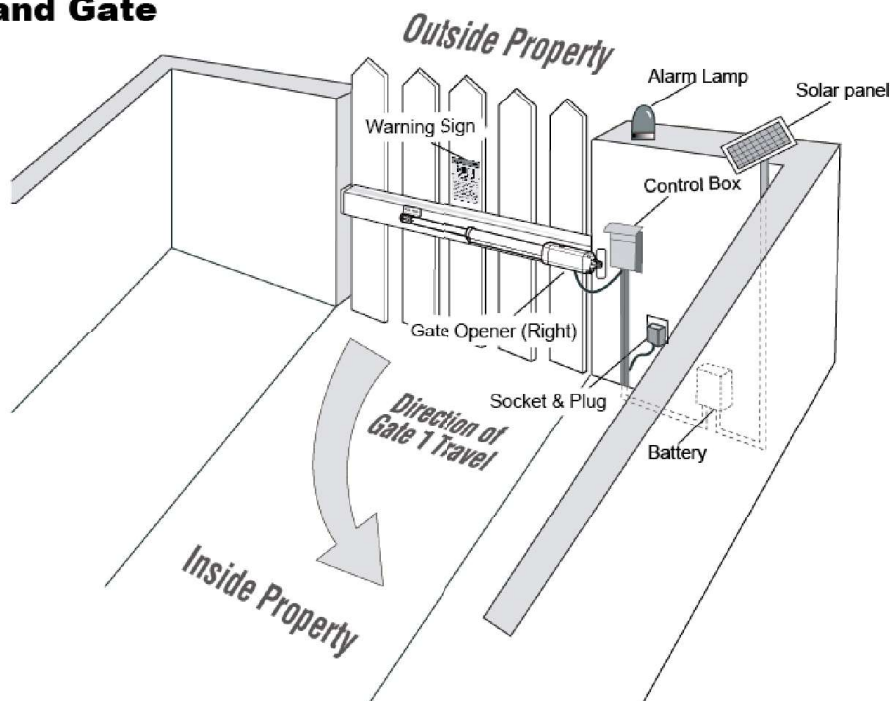
Pull-to-Open Gate

⚠ WARNING
To prevent SERIOUS INJURY or DEATH , at least one non-contact sensor should be located where the risk of entrapment or obstruction exists.

Left-Hand Gate



Right-Hand Gate



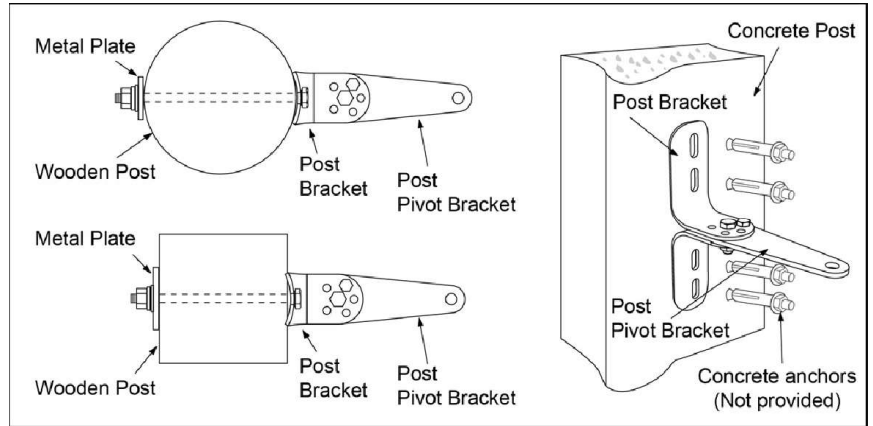
Preparation for Installation

There are two installation types for the gate opener, Pull-to-Open and Push-to-Open.

⚠ Our gate opener is designed for Pull-to-Open, in the Push-to-Open installation, please purchase Push-To-Open Bracket from your supplier.

NOTE: Ensure the gate does not open into public areas.

The gate opener is mounted to the gate and to the gate post. Both round and square posts can be used because the Post Brackets are curved. When mounting the Post Brackets, use bolts long enough to pass through the entire post. M10 x 200 bolts are included. Concrete anchors are not provided. When mounting the Post Brackets to wooden posts, a larger-size washer or metal plate should be used between the

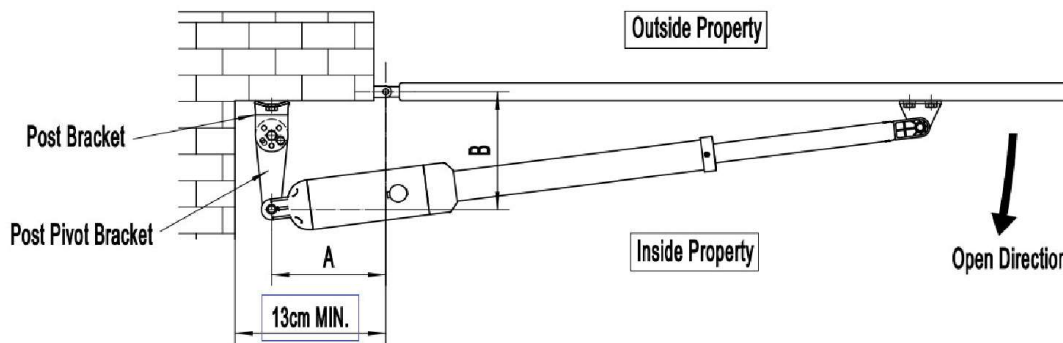


bolts and the wooden post to ensure the stability of the fastening hardware. If the post is smaller than 6" diameter or square, it should be made of metal and set in cement to ensure its stability.

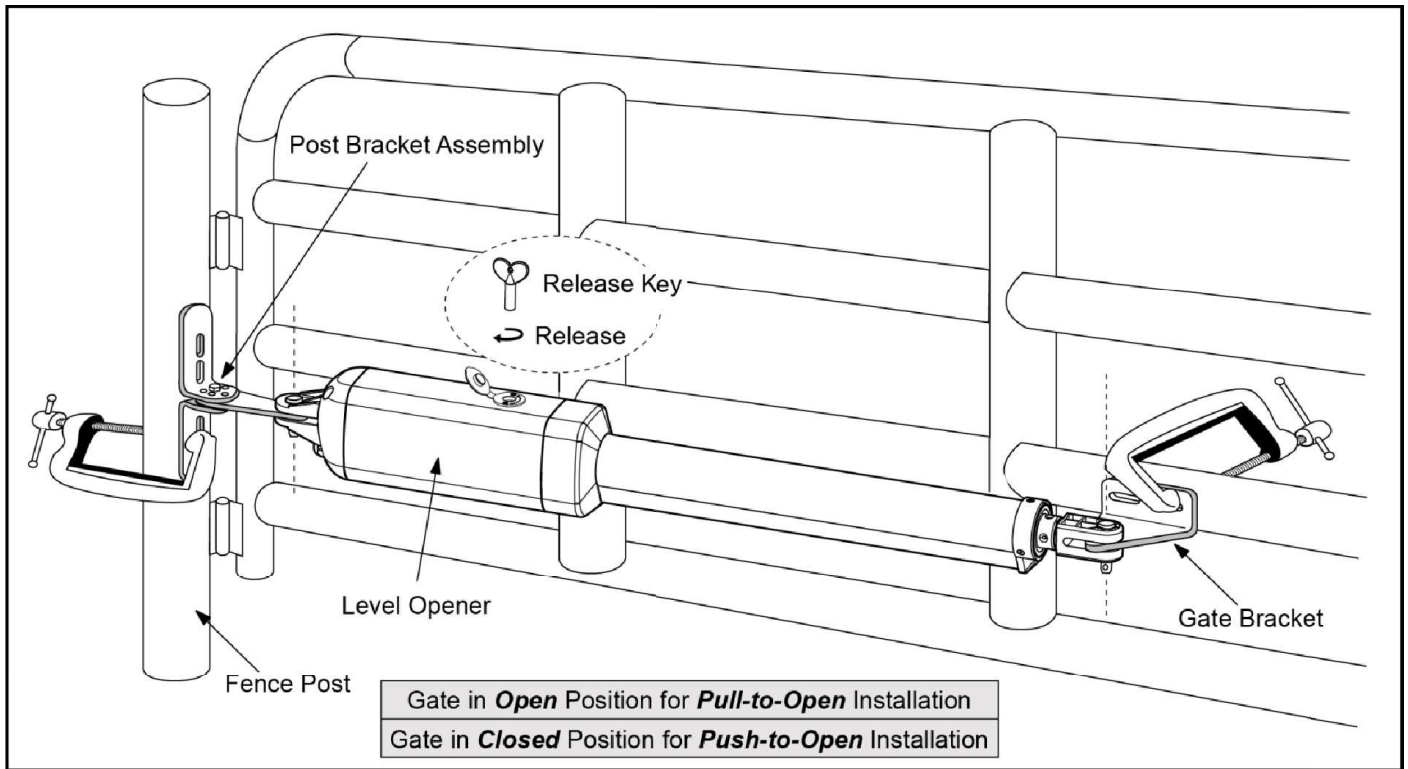
Install the Gate Opener on the Gate

The position of Post Bracket is very important. The following illustrations and tables are required to determine the proper mounting position for the Post Bracket. The tables show the maximum opening angle of the gate for a given A and B. For example, if A is 15 cm and B is 20 cm, the maximum opening angle of the gate is 110°.

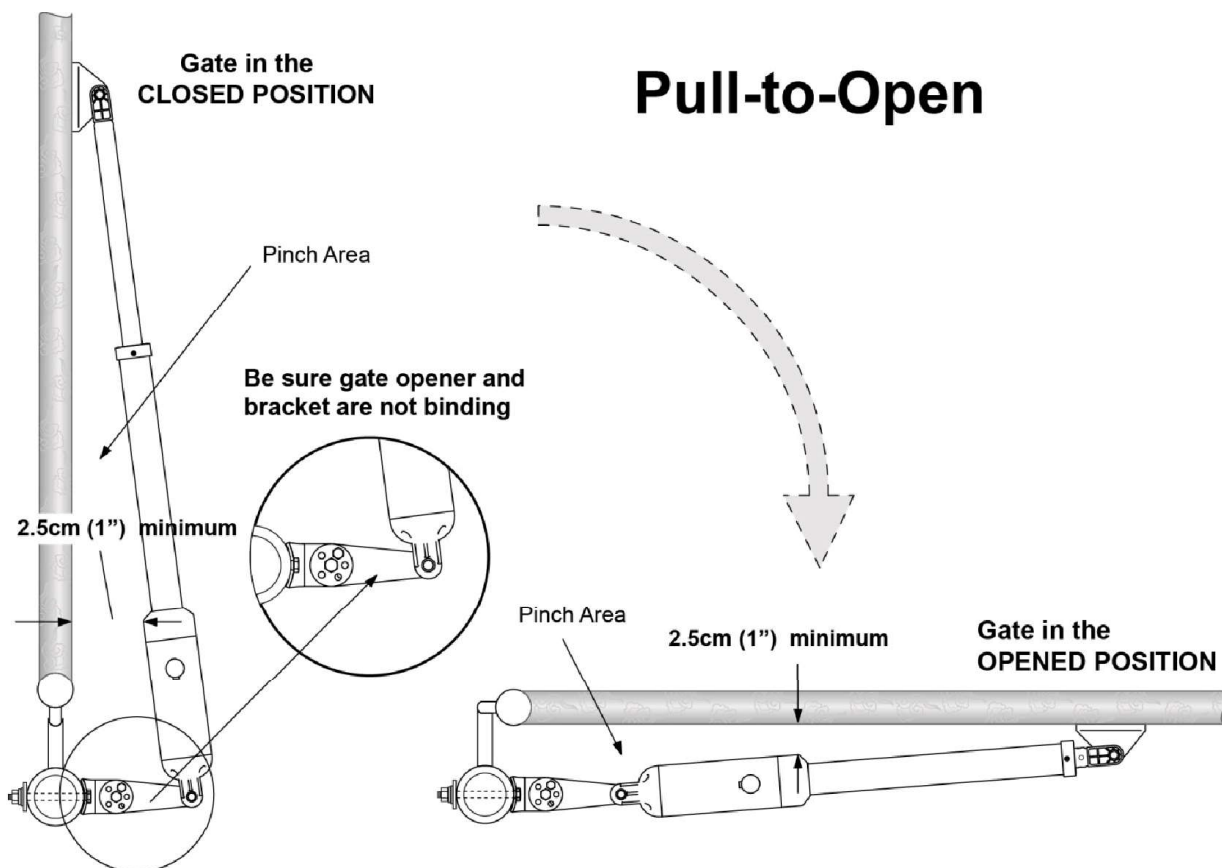
Pull-to-Open Installation — Gate in Closed position (Moving-Rod is extended)

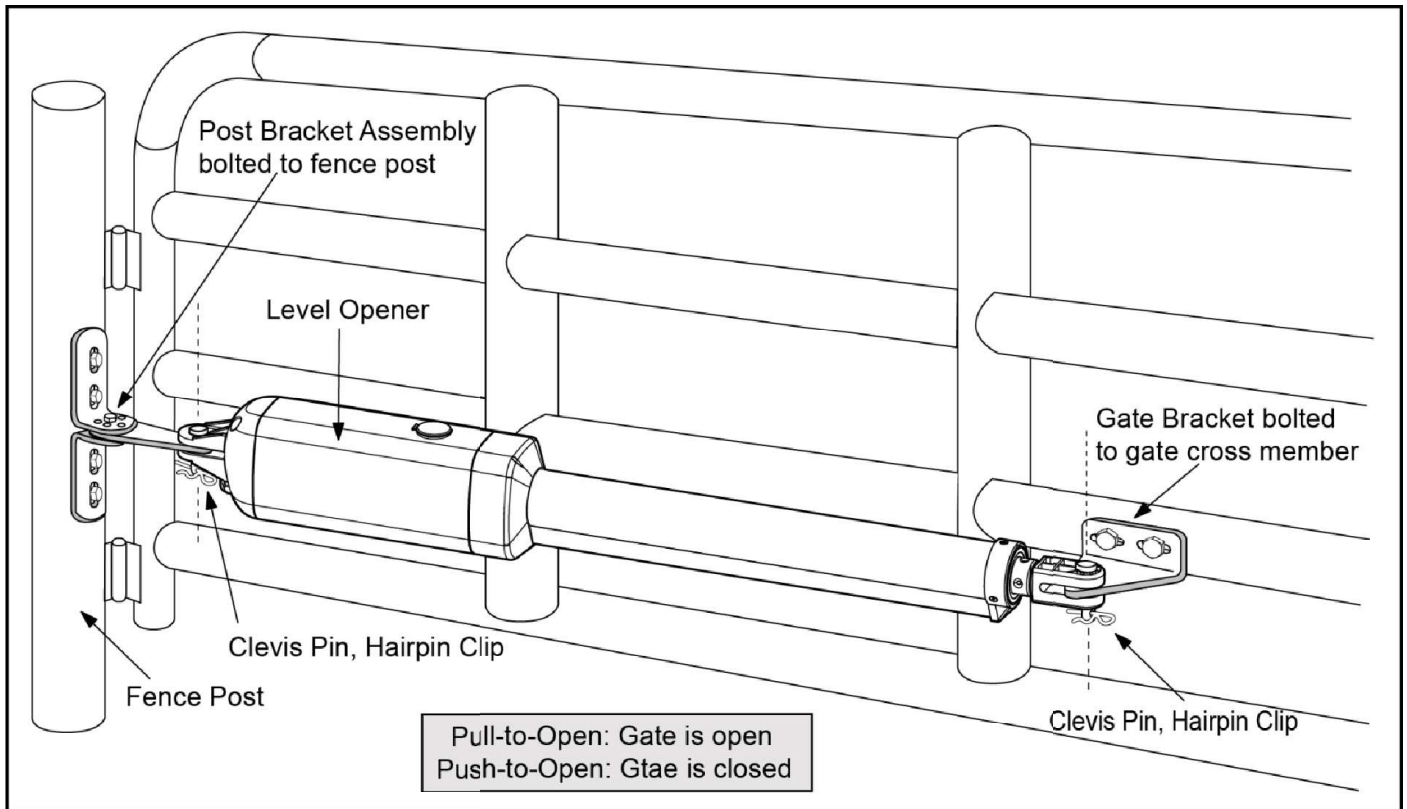


	A=8cm	A=9cm	A=10cm	A=11cm	A=12cm	A=13cm	A=14cm	A=15cm	A=16cm	A=17cm	A=18cm	A=19cm	A=20cm	A=21cm	A=22cm
B=19cm	90°	93°	96°	98°	101°	104°	106°	108°	110°	105°	102°	98°	95°	93°	91°
B=20cm	91°	93°	95°	98°	100°	103°	107°	110°	104°	99°	96°	94°	92°	90°	89°
B=21cm	91°	93°	95°	97°	100°	103°	106°	103°	99°	96°	93°	91°	89°	88°	
B=22cm	91°	94°	95°	97°	99°	101°	103°	98°	95°	92°	90°	89°	87°		
B=23cm	92°	94°	96°	98°	100°	103°	98°	94°	92°	90°	88°	86°			
B=24cm	90°	92°	95°	97°	99°	97°	93°	91°	88°	87°	85°				
B=25cm	90°	92°	94°	97°	96°	92°	90°	87°	85°	84°					
B=26cm	90°	92°	94°	95°	91°	88°	86°	84°							
B=27cm	90°	92°	95°	90°	87°	85°									
B=28cm	90°	93°	89°	86°	84°										



5. Make sure there is a minimum clearance of 2.5cm between the gate and the opener and that the opener and the Post Pivot Bracket are not binding in both the gate-open and gate-closed positions. If there is not at least 2.5cm of clearance or if the opener and the Post Pivot Bracket are binding, rotate the Post Pivot Bracket and/or move the Post Bracket Assembly to obtain the minimum clearance and eliminate the binding. When the minimum clearance has been obtained and any binding has been eliminated, place the M8 x 30 bolt through the aligned holes in the Post Bracket and the Post Pivot Bracket.

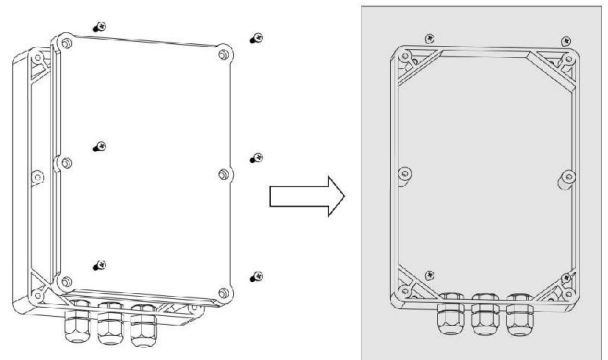




12. Open the release hole plug on the top of the gate opener, insert the release key, and turn the key 90° counterclockwise. This restores normal operation.

Mounting of the control box

Remove the cover of the control box and use 4 deck screws (not provided) to install the control box. Ensure the control box is installed in a secure surface and at least 100 cm (40 inches) above the ground to protect it from rain, snow, etc. which probably cause damage to the control box.



Connection of the Power Supply

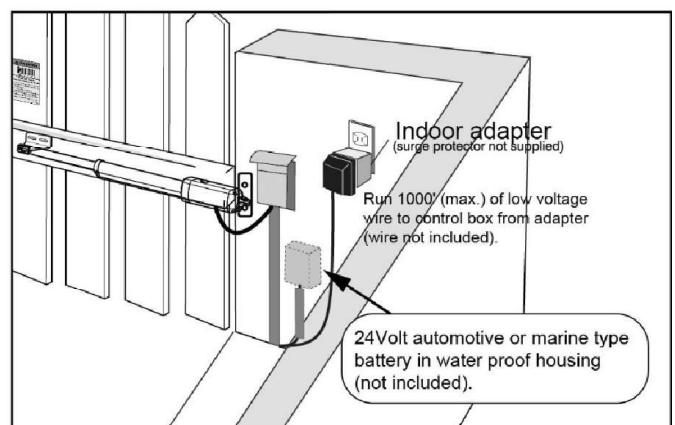
⚠ The gate opener can be powered by 24V 12Ah battery (NOT INCLUDED) OR a 24VDC AC-DC power supply (NOT INCLUDED) with minimum output power 150W. The adapter included in the package is ONLY used to charge the battery.

⚠ Instead of using a battery, the AC-DC Power Supply is highly recommended as the power source to save the cost where AC electricity is accessible and stable.

⚠ If batteries are chosen as the power source, Marine or Automotive Type Battery with capacity greater than 7Ah is required. The batteries should be waterproof type, or be placed in water proof circumstance.

⚠ 2 PCS 12VDC batteries can be connected in series to function as 24VDC. The following diagram shows on how to connect 2 PCS

⚠ batteries in series. Charging mode for the battery could be by the adapter, by the solar panel, or both of them at the same time.

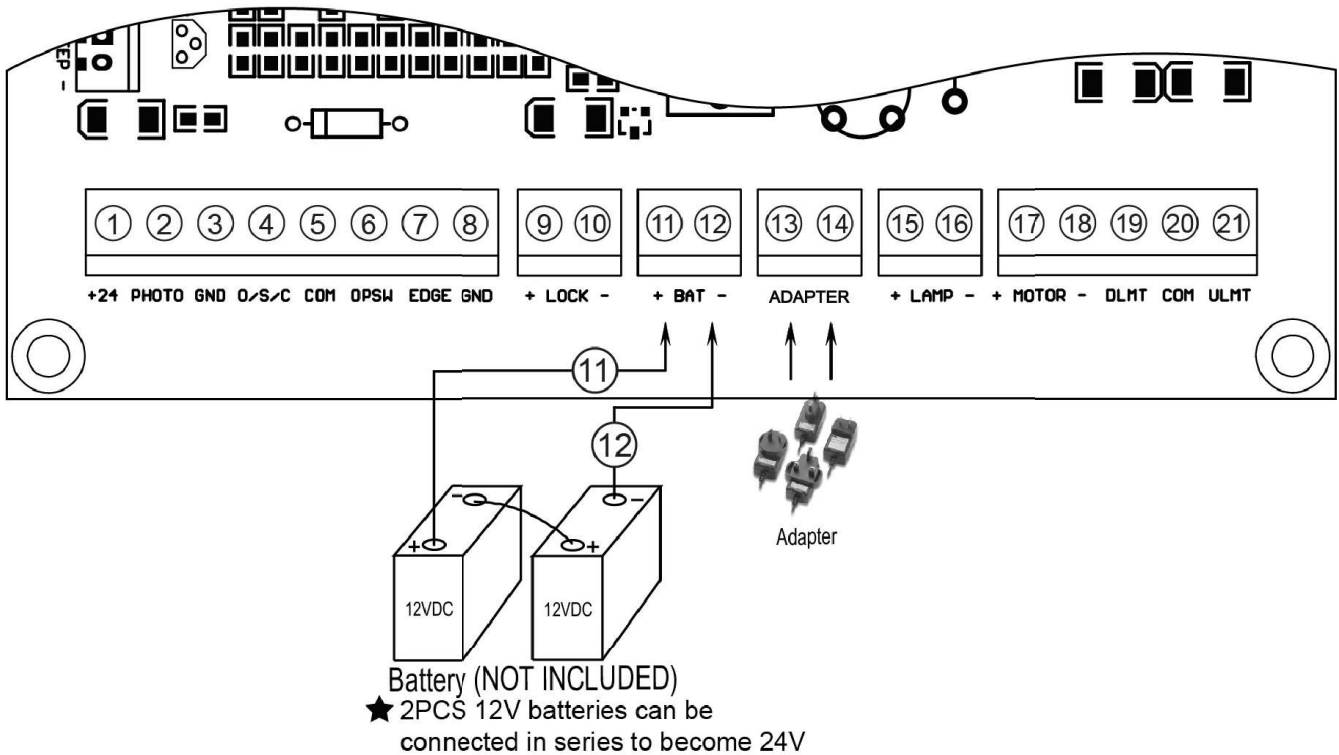


Please note that the wire connection of the power supply system is very important. Incorrect wire connection will damage the control board.

⚠ WARNING: NEVER connect the gate opener to the power outlet before all the installations have been done.

1. Use the batteries as the power source and only use the adapter to charge the batteries

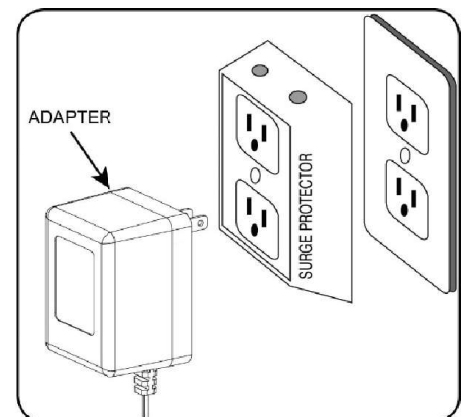
The “24V+” of the battery should be wired to the BAT+ (#11) terminal, “24V-” should be wired to “BAT-” (#12) terminal. The wire (2*0.75mm², 1meter long) for connecting the battery has been provided and connected to the control board in factory. The adapter should be wired to the “ADAPTER” (#13, #14) terminals of the control board, no matter the polarity. The length of the wire of the adapter is 1.2m (4’). So if the distance between the outlet and the control box is longer than that, you should use an extended wire to connect the adapter to the control board. The wire size should be at least 16AWG. If the distance is more than 100m (300’), the wire size should be at least 14AWG. The maximum distance from the adapter to the control box is 300m (1000’).

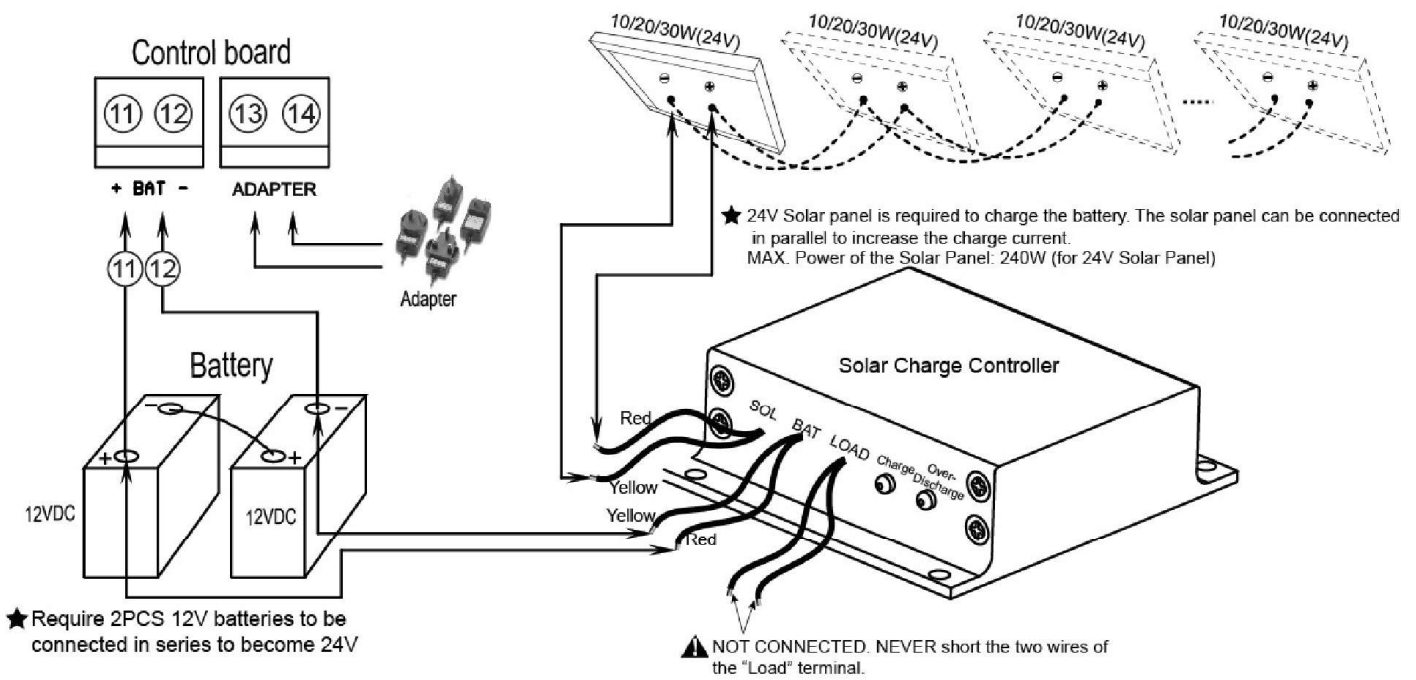


You can plug the adapter into the electrical outlet after all the wire connections are completed. Use a surge protector with the adapter is strongly recommended. If electrical outlet is located outdoors, outlet and adapter should be protected by a weatherproof cover.

2. Use the batteries as the power source and use the adapter & solar panel to charge the batteries at the same time

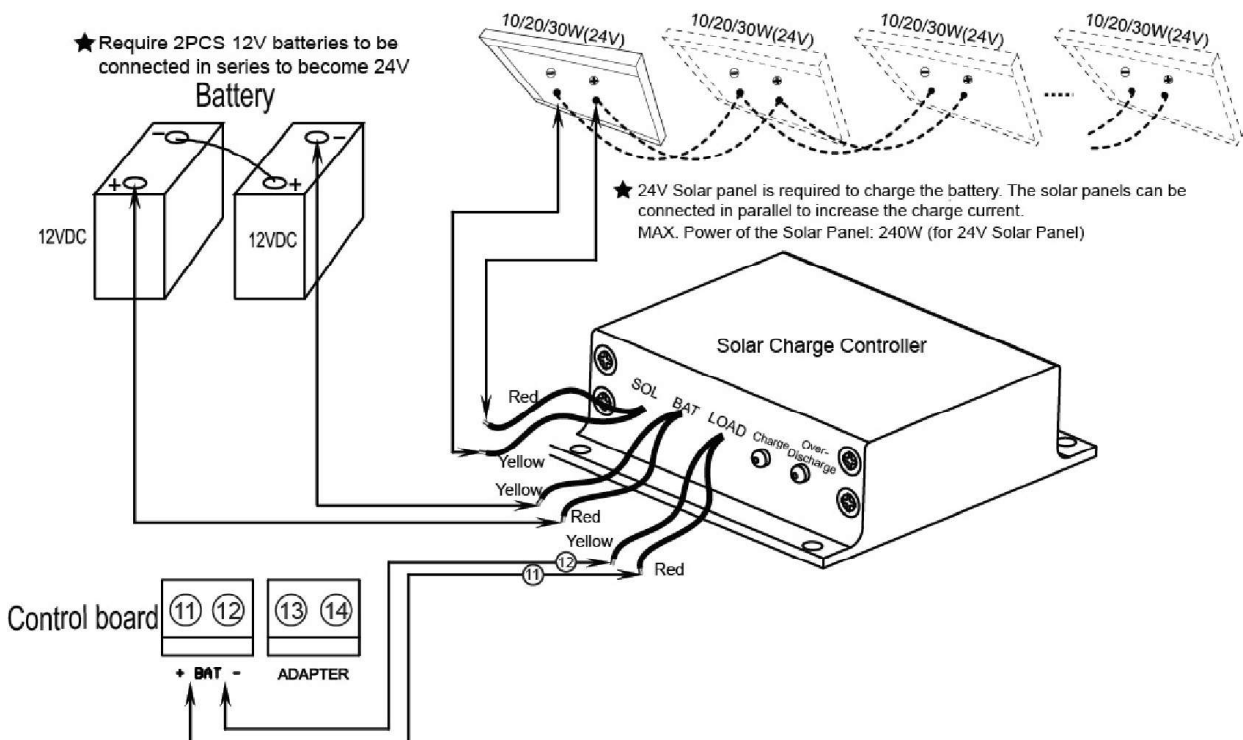
If you want to use an optional solar panel to charge the battery with the adapter at the same time, a solar charge controller must be used to control it to charge the battery. You can connect adapter, the solar panel and the solar charge controller refers to the following illustration.





3. Use the batteries as the power source and only use the solar panel to charge the batteries

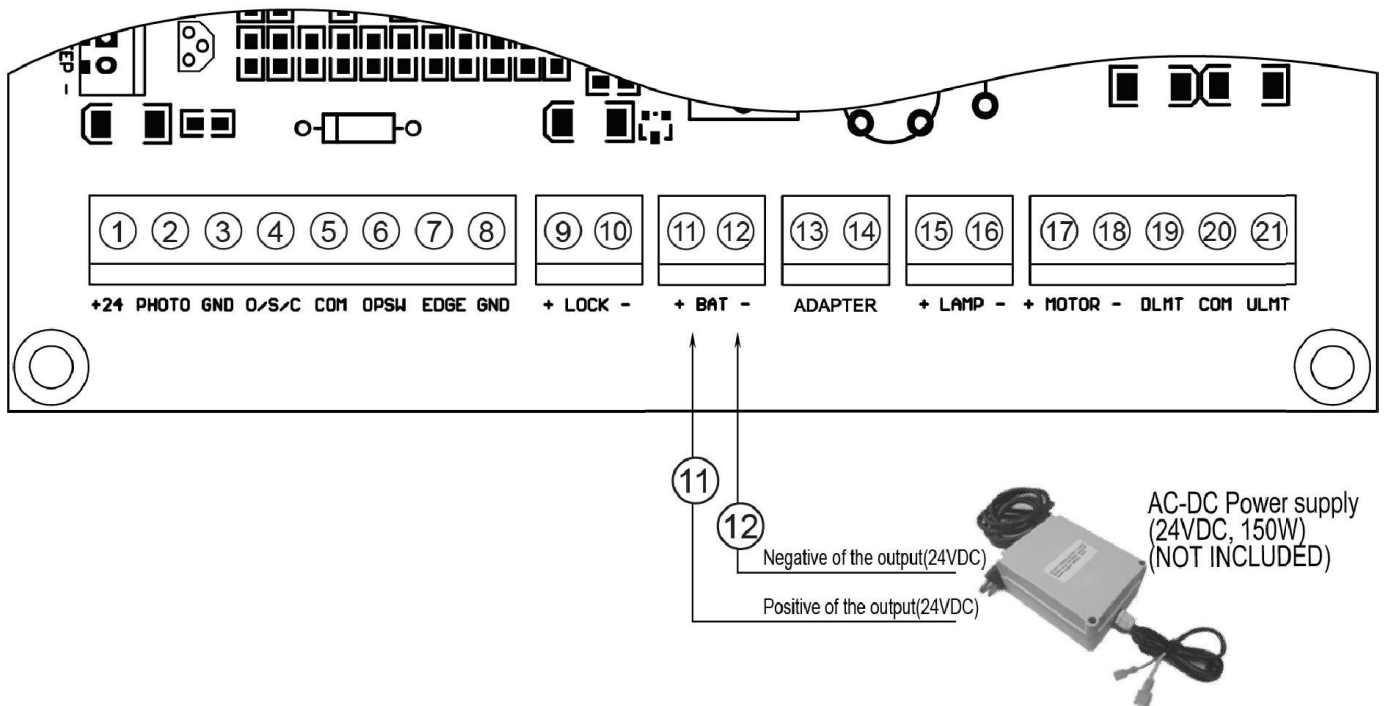
If you only use the solar panel to charge the batteries, please note the power of the solar panel should be at least 20W. The gate opener can work for 10 cycles per day if there is no other accessory except photocell & electric lock & push button & alarm lamp connected to the control board. The capacity of the batteries and the power of the solar panel should be enlarged if you want to use more. You can connect the solar panel and the solar charge controller refers to the following illustration.



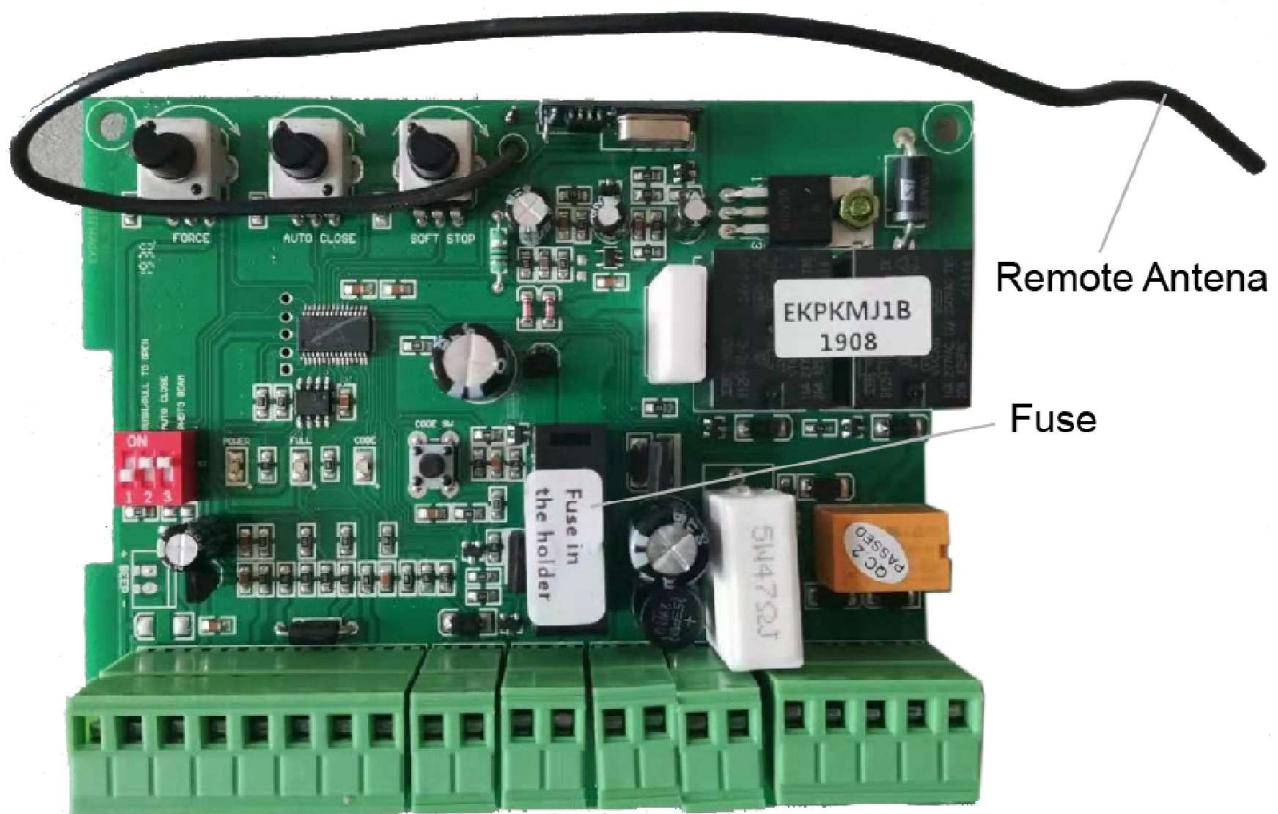
4. Use the 24VDC AC-DC power supply as the power source if AC electricity is accessible and stable

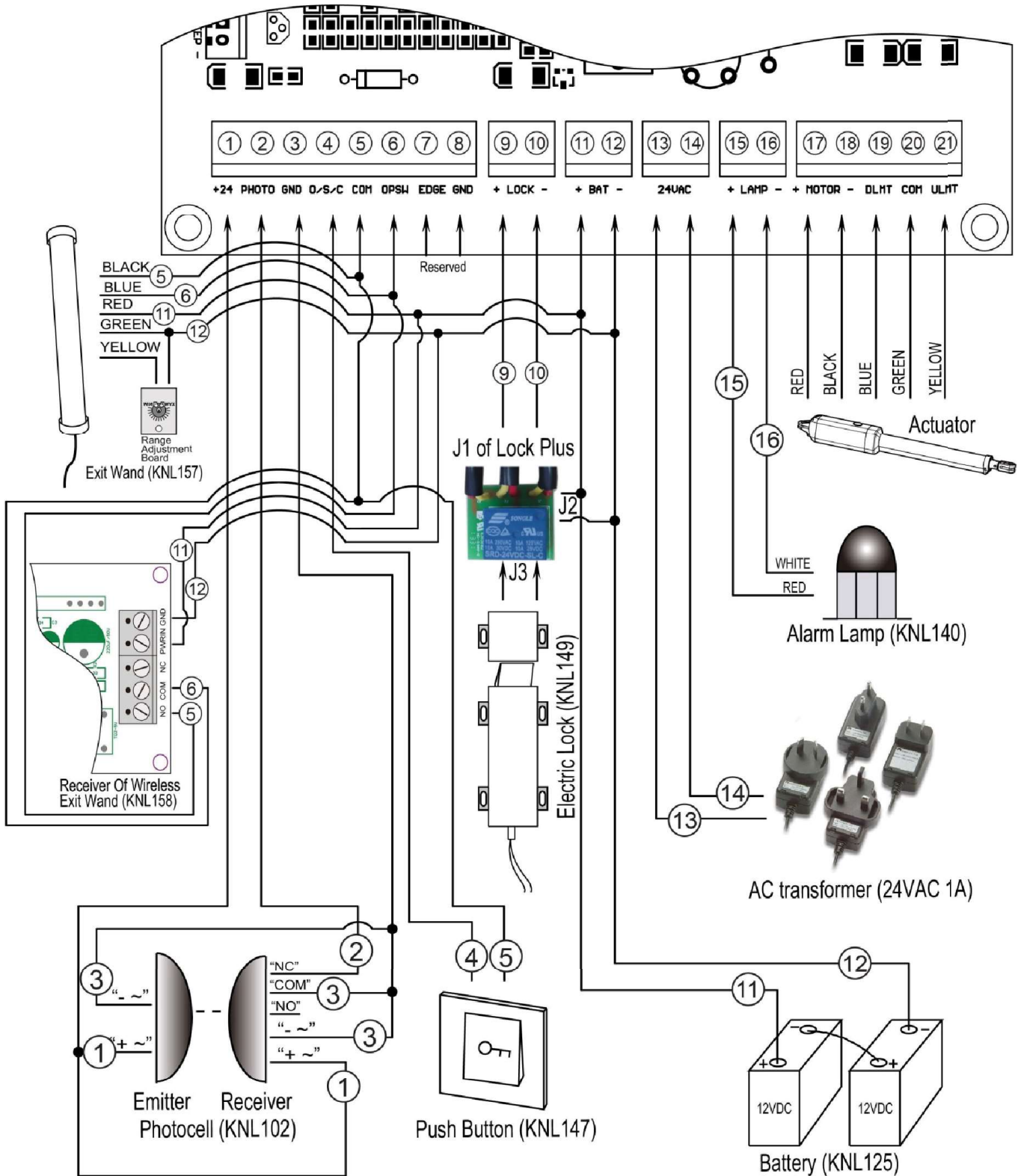
The gate opener can be powered by an AC to DC 24V Power Supply (NOT INCLUDED). Instead of using

batteries, this alternative save costs and is strongly recommended. The positive output of the 24VDC power supply should be wired to the BAT+ (#11) terminal, the negative output should be wired to "BAT-" (#12) terminal. There is no need to use the adapter in this situation.



Connection of the control board





1. Actuator

Insert the stripped cable wires into the appropriate terminals on the opener terminals block. The red wire should be inserted into the “+MOTOR” terminal(#17), the black wire into “MOTOR-” terminal (#18), the blue wire into “DLMT” terminal(#19), the green wire into “COM” terminal(#20), and the yellow wire into “ULMT” terminal (#21).

2. Battery (Required but not included)

The “24V+” of the battery should be wired to the +BAT (#11) terminal, “24V-” should be wired to “BAT-” (#12) terminal. 2*12VDC batteries can be connected in series to become 24V.

3. AC transformer (Only used to charge the batteries)

Insert the stripped cable wires into AC24V (#13) terminals to the control board. No matter the polarity.

4. Alarm Lamp (optional)

The red wire of the alarm lamp should be inserted into either LAMP (#15) terminal, the white wire into the other one (#16).

5-1. Photocell Beam System (PBS) (optional)

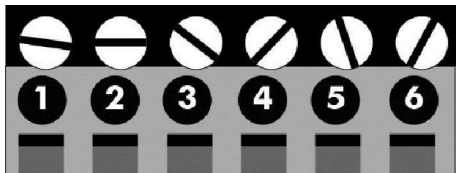
Use a 2-core cable to connect the “+ ~” terminal of the photocell emitter to the “+24” (#1) terminal, the “- ~” terminal to the “GND” (#3) terminal. Also the “+ ~” and “- ~” terminals of the photocell receiver should be connected to the “+24” and “GND” terminals in parallel.

Use another 2-core cable to connect the “NC” terminal of the receiver to the “PHOTO”(#2) terminal, the “COM” terminal to the “GND”(#3) terminal.

5-2. KNL104B Reflective Photocell (optional)

Use a 2-core cable to connect the “#2” terminal of the KNL104B photocell to the “+24” (#1) terminal of gate opener control board, the “#3” terminal of the KNL104B photocell to the “GND” (#3) terminal of gate opener control board.

Use another 2-core cable to connect the “NC” (#5) terminal of the KNL104B photocell to the “PHOTO” (#2) terminal of the gate opener control board, the “COM” (#6) terminal of KNL104B photocell to the “GND” (#3) terminal of gate opener control board.



TS AC10-25V NO NC COM
DC12-30V

Terminals of KNL104B Photocell Emitter

6. Push Button (optional)

The push button should be wired to the “#4 and “#5” terminals. No matter the polarity. The gate operator works alternately by pressing the button (open-stop-close-stop-open).

7. Electric Lock (optional)

A lock plus board (should be purchased separately) is required to connect the electric lock to the control board. The 2 wires of J1 of lock plus should be wired to the “9#” and “10#” terminal of the control board. No matter the polarity. Red wire of J2 should be wired to the 11# terminal and yellow wire of J2 should be wired to the 12# terminal. Red wire of J3 should be connected to the red wire of electric lock and also the yellow wire of J3 should be connected to the yellow wire of electric lock.

8. Exit Wand (optional)

The BLACK wire of the exit wand should be connected into the “#5” terminal.

The BLUE wire of the exit wand should be connected into the “#6” terminal.

The RED wire of the exit wand should be connected into the “#11” terminal.

The GREEN wire of the exit wand should be connected into the “#12” terminal.

The sensitivity adjustment board should be wired to the GREEN wire and the YELLOW wire of the wand. No matter the polarity.

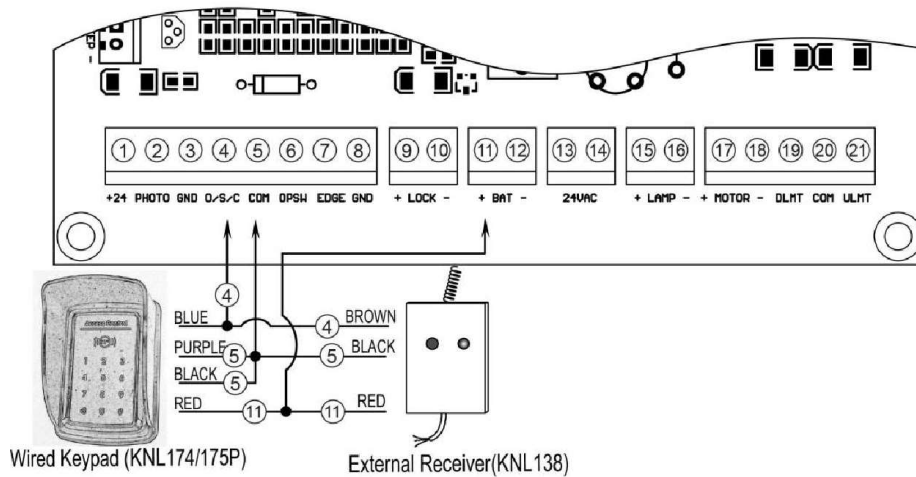
9. Wireless Exit Wand (optional)

The “NO” terminal of the receiver should be wired to the “#5” terminal of the control board.

The “COM” terminal of the receiver should be wired to the “#6” terminal of the control board.

The “PWR” terminal of the receiver should be wired to the “#11” terminal of the control board.

The “GND” terminal of the receiver should be wired to the “#12” terminal of the control board.



10. Wired Keypad (optional)

The RED wire of the wired keypad should be connected into the “#11” terminal.
 The BLACK wire of the wired keypad should be connected into the “#5” terminal.
 The PURPLE wire of the wired keypad should be connected into the “#5” terminal.
 The BLUE wire of the wired keypad should be connected into the “#4” terminal.

11. External receiver (optional)

The RED wire of the external receiver should be connected into the “#11” terminal.
 The BLACK wire of the external receiver should be connected into the “#5” terminal.
 The BROWN wire of the external receiver should be connected into the “#4” terminal.

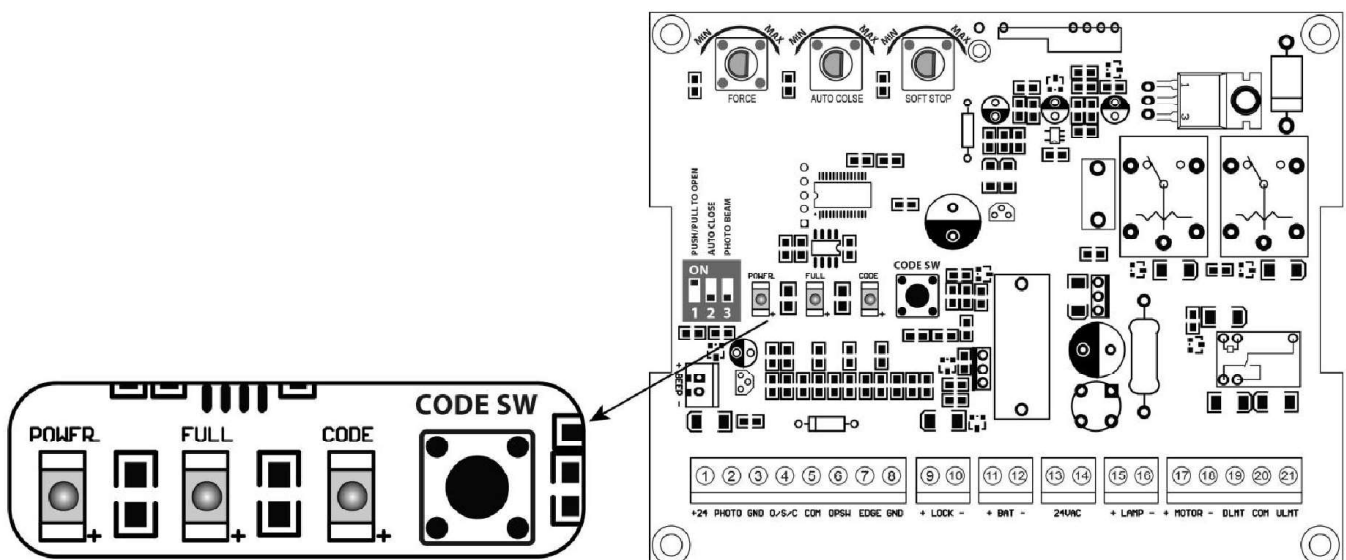
Note: Using of the exit wand, keypad and external receiver would cause the battery exhausted quickly. Big capacity of battery and big power of solar panel (if the solar panel is used as main charger) is required if you want to use either of them.

How to Program the Remote to the Opener

You must program the remote to the opener before operating. You can follow the below steps to program the remote to the opener.

Press and release the CODE SW button, the CODE LED will be ON, then press the key in the remote twice in 4 seconds, the CODE LED will flash for 3 seconds and then to OFF. Now the remote has been programmed successfully.

NOTE: The button of the remote control should be pressed and hold for more than 2 seconds while programming. Max. 10 remotes can be programmed for the opener. If you want program more remotes, you should use an optional external receiver.



How to Erase All the Remote Codes

Press and hold the CODE SW button until the CODE LED from ON to OFF. Now all remote codes have been erased.

How to use the remote to operate your gate opener

Each remote has four buttons, they are A, B, C and D.

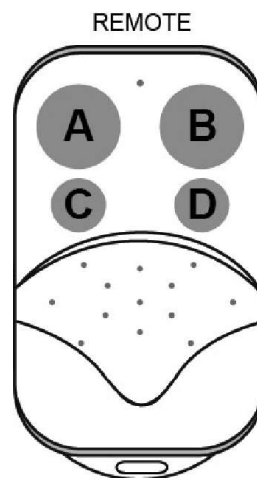
You may use this remote to operate as many as 4 sets our swing gate opener or 1 set our sliding gate opener and 2 sets our swing gate opener.

1. Use this remote to only operate swing gate opener

A, B, C and D four buttons share same function once they are programmed with our swing gate opener. You may choose any button to program it with our swing gate opener. Every press of the button is able to active the gate opener to work alternately (open-stop-close-stop-open).

2. Use one remote to operate swing gate opener & sliding gate opener at the same time

All of our sliding gate opener have midway mode. B is designed for a midway function (refer to more details in sliding gate opener manual). In this case, program A button for sliding gate opener and program either C or D button for swing gate opener.



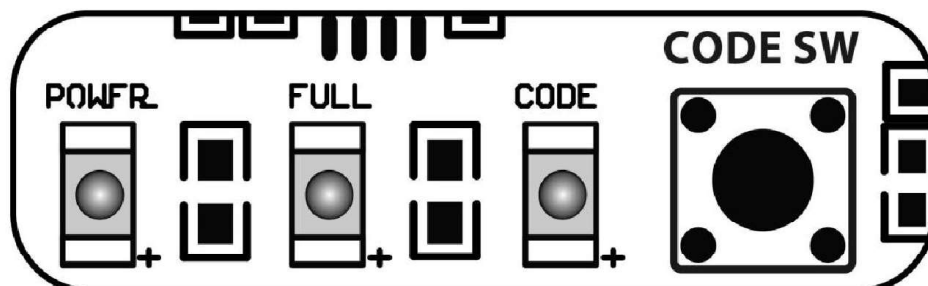
Wireless keypad programming

You can follow the below steps to program wireless keypad to the opener. Press the CODE SW button until the CODE LED is ON, and then release the button. Then press "OK" button on keypad and CODE LED will flash for 3 seconds and then be OFF which indicates the keypad has been programmed successfully. You can use the default password "888888" to operate the opener after programming. You can press "PIN" "8 8 8 8 8 8" and then press "OK" to confirm to operate the opener.

Also you can change the password of the keypad follow the below steps. Press "PIN" and then input the six digits old password and then press "PIN" again, the CODE LED will be ON. Input the six digits new password and then press the "PIN" to confirm the new setting, CODE LED will flash for 3 seconds and then be OFF which indicates the password has been changed successfully. You can press "PIN" "6 digits new password" and then press "OK" to confirm to operate the opener.



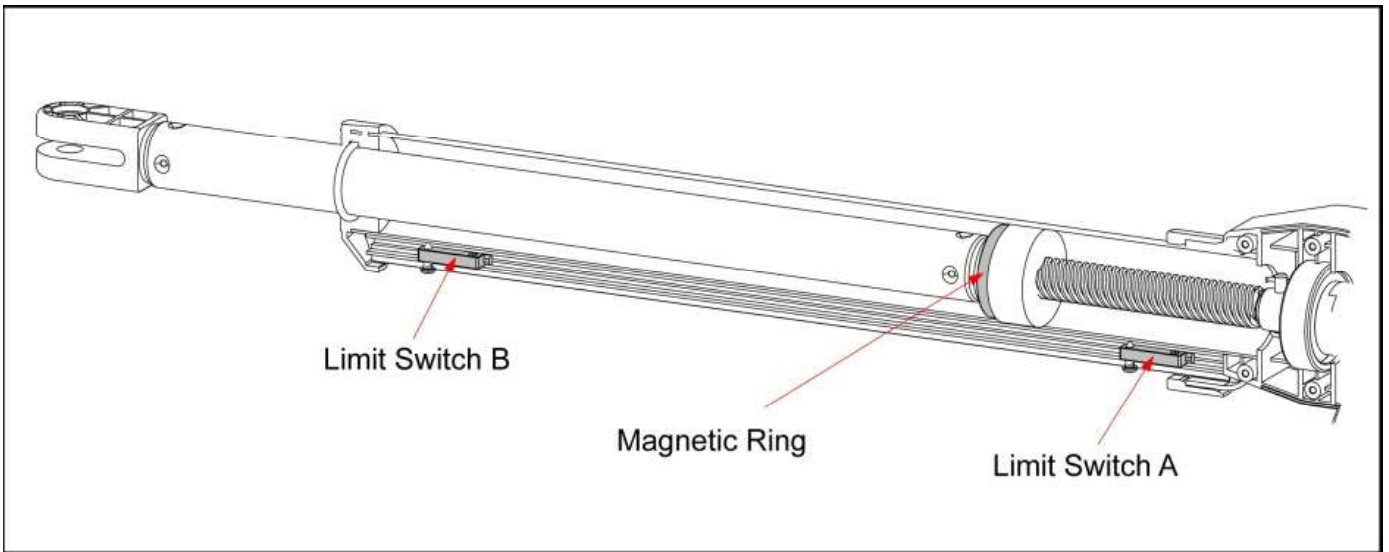
Wireless Keypad



NOTE: Every step for pressing button during program must be finished within 1 second to ensure successful

programming.

Adjusting the Limit Switch



⚠ The position of Limit Switch A was fixed in factory, do not adjust it again. Plug on the power to running gate opener, use a screwdriver to loosen the screw of Limit Switch B, slide Limit Switch B to the desired closed position and fix it. Limit setting for Gate 1 is finished now.

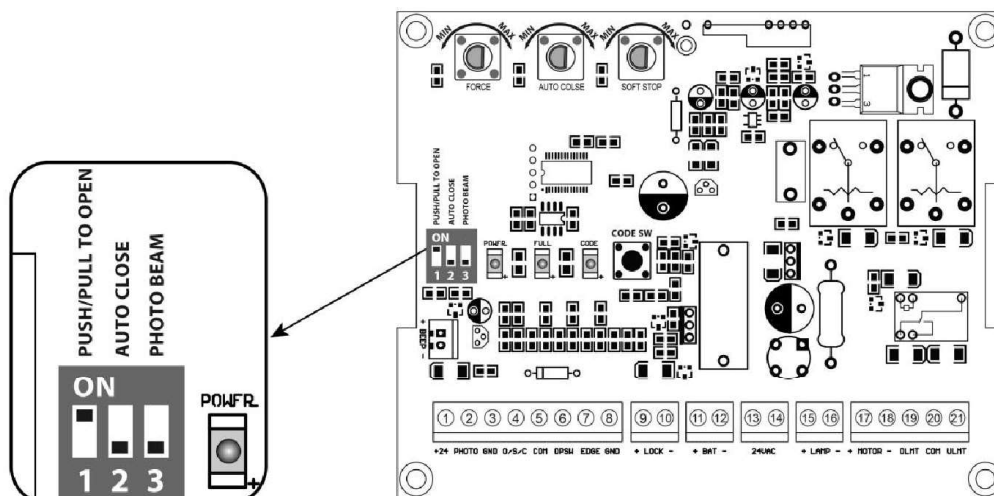
NOTE: Always place the magnetic ring between the Limit Switch A and B.

Setting of the Control Board

⚠ **WARNING:** Ensure the gate opener is Power Off when you make any adjustment. Keep away from the gate, while setting the system in case of any unexpected gate moving. Carefully adjust the DIP switches to avoid the risk of machine damage, injury or death. Always ask the help of professional technician /electrician if you have any question.

1. DIP Switches

The DIP switches are used to select push/pull to open, enable/disable auto close function, enable/disable photocell beam function.



DIP Switch #1: Select push/pull to open

If the gate opens into the property (pull to open), the DIP Switch is set to OFF (factory default setting). If your gate opens out from the property (push to open) the DIP Switch must be set to the ON position.

Factory default setting is OFF.

DIP Switch #2: Auto close function enabled/disabled

ON – Auto close function enabled

OFF – Auto close function disabled

Set the switch #2 to ON to enable the auto close function. Factory default setting is OFF.

DIP Switch #3: Photocell function enabled/disabled

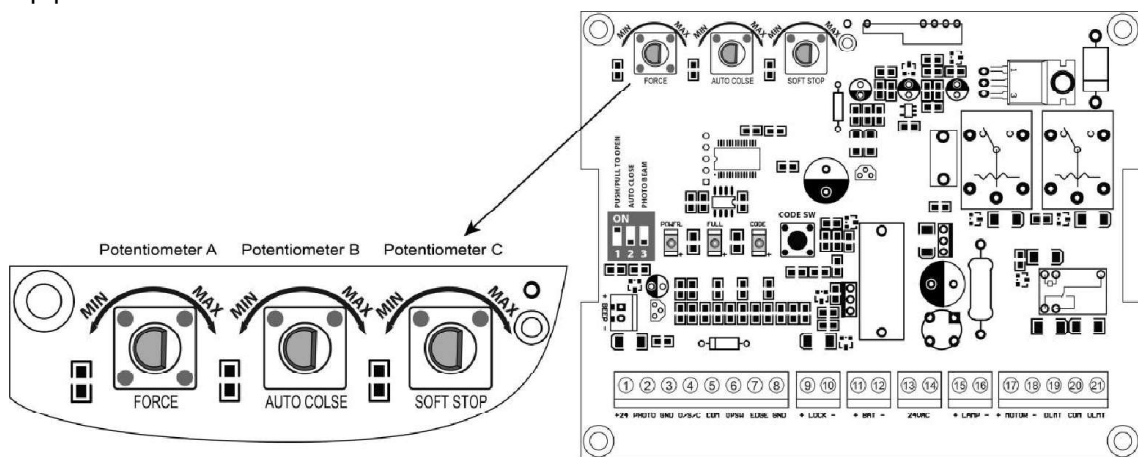
ON – Photocell function enabled

OFF – Photocell function disabled

You must set the switch #3 to ON to enable the photocell function if you want to use the photocell with the gate opener. Factory default setting is OFF.

2. Potentiometers

There are 3 potentiometers located in the control board. They are used to adjust the stall force, auto-close time and soft stop period.



Potentiometer A is used to adjust the stall force the gate opener. Turn the potentiometer clockwise to increase the stall force, and turn it counter-clockwise to decrease the stall force.

Potentiometer B is used to adjust the auto close time of the gate opener. Turn the potentiometer clockwise to increase the auto close time, and turn it counter-clockwise to decrease the auto close time. The auto close time can be adjusted steplessly from 3 to 120 seconds.

Potentiometer C is used to adjust the soft stop period of the gate opener. Turn the potentiometer clockwise to increase the soft stop period, and turn it counter-clockwise to decrease the soft stop period. The auto close time can be adjusted steplessly from 1 to 5 seconds.

Trouble Shooting

Have a multimeter to check voltage and continuity. Use caution when checking high voltage terminals.

Symptom	Possible Solution(s)
The opener does not run. Only the CODE LED is ON slightly.	1. The batteries are not connected to the control board or the wire connection of the batteries is loosened. Please note that a 2*12V batteries is required to power up the gate opener. The AC transformer included in the package is only to be used to charge the batteries.

<p>The opener does not run. Power LED flash rapidly (the LED is ON 200ms per second, normally the LED ON 500ms per second).</p>	<p>1. Battery is over-discharged. Check the voltage of the battery. The voltage of the battery should above 22V to make the gate opener work normally.</p>
<p>The opener does not run. Power LED does not ON.</p>	<p>1. Make sure the connection between the battery and control board is correct and fastening. 2. Check the fuse in the control board. Replace the fuse if it was burnt out. 3. Check the control board. Replace the control board if necessary.</p>
<p>Gate moves a little and then reverse or stop</p>	<p>1. The selected force is too small to move the gate. Turn the Potentiometer clock-wise to increase the force. 2. Disconnect the gate from the gate operator and check that the gate slides freely without any binding.</p>
<p>Gate opener does not run when you press the remote control</p>	<p>1. Make sure the remote has been programmed to the control board before using. 2. The battery of the remote may be exhausted. Replace the battery and try it again. 3. Check the control board. Replace the control board if necessary.</p>
<p>Gate can open but does not close</p>	<p>1. Make sure the connection of the photocell beam is not blocked if the photocell is used. 2. Check if the close limit switch is broken. 3. Check the control board. Replace the control board if necessary.</p>
<p>Gate automatically opens, but does not automatically close</p>	<p>1. Setting of DIP switch #1 would be wrong. Please set the dip switch correctly according to the push/pull to opener installation of the gate opener.</p>



According to Waste of Electrical and Electronic Equipment (WEEE) directive, WEEE should be separately collected and treated. If at any time in future you need to dispose of this product please do NOT dispose of this product with household waste. Please send this product to WEEE collecting points where available.

