

**ALEKO®**

# **Sliding Gate Opener User's Manual**

**Model:**

**AR950**



- ★ Please read and follow all warnings, precautions and instructions before installation and use
- ★ Periodic checks of the operator are required to ensure safe operation.
- ★ For residential use only
- ★ Save this manual

**CE EMC**

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Thank you for purchasing our sliding gate opener. We are sure that the products will be greatly satisfying as soon as you start to use it.

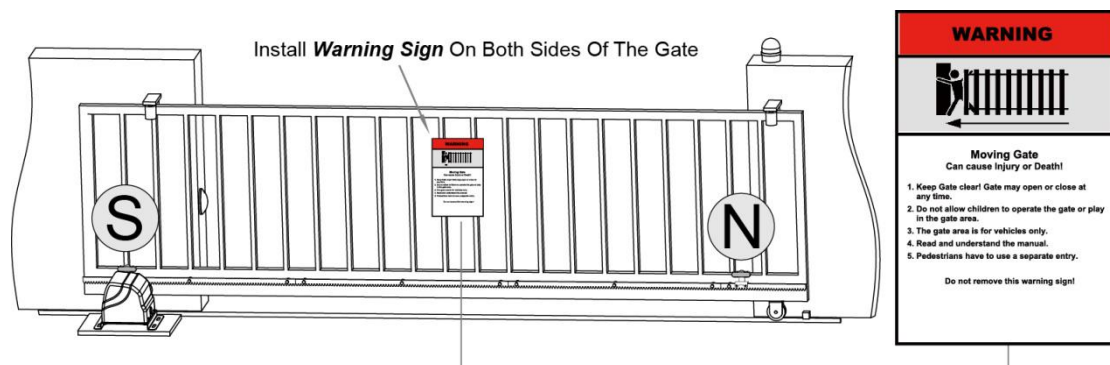
The product is supplied with a user's manual which encloses installation and safety precautions. These should be read carefully before installation and operation as they provide important information about safety, installation, operation and maintenance. This product complies with the recognized technical standards and safety regulations.

## General Safety



**WARNING!** An incorrect installation or improper use of the product can cause damage to persons, animals or properties.

- Scrap packing materials (plastic, cardboard, polystyrene etc.) according to the provisions set out by current standards. Keep nylon or polystyrene bags out of children's reach.
- This product was exclusively designed and manufactured for the use specified in the present documentation. Any other use not specified in this documentation could damage the product and be dangerous.
- The factory declines all responsibility for any consequences resulting from improper use of the product, or use which is different from that expected and specified in the present documentation.
- Do not install the product in explosive atmosphere.
- The factory declines all responsibility for any consequences resulting from failure to observe Good Technical Practice when constructing closing structures (door, gates etc.), as well as from any deformation which might occur during use.
- Disconnect the electrical power supply before carrying out any work on the installation. Also disconnect any buffer batteries, if fitted.
- Fit an omnipolar or magnetothermal switch on the mains power supply, having a contact opening distance equal to or greater than 3,5 mm.
- Make sure a residual current circuit breaker with a 30mA threshold is fitted before the power supply mains.
- Check that earthing is carried out correctly: connect all metal parts for closure (doors, gates etc.) and all system components provided with an earth terminal.
- Fit all the safety devices (photocells, electric edges etc.) which are needed to protect the area from any danger caused by squashing, conveying and shearing.
- Position at least one visible indication device (Alarm lamp), and fix a Warning sign to the structure.



- The factory declines all responsibility with respect to the automation safety and correct operation when other supplier's components are used.
- Only use original parts for any maintenance or repair operation.
- Do not modify the automation components, unless explicitly authorized by the factory.
- Instruct the product user about the control systems provided and the manual opening operation in case of

emergency.

- Do not allow persons or children to remain in the automation operation area.
- Keep radio control or other control devices out of children's reach, in order to avoid unintentional automation activation.
- The user must avoid any attempt to carry out work or repair on the automation system, and always request the assistance of qualified personnel.
- Anything which is not expressly provided for in the present instructions is not allowed.
- Before installing the gate opener, check that all moving part as well as the sliding gate is in good mechanical condition, correctly balanced and opens and closes properly.
- Save these instructions for future use.

## Preparation for Installation

Before proceeding to your opener installation, check if your gate structure is in accordance with the current standards, especially as follows:

The gate sliding track is linear and horizontal, and the wheels are suitable, the gate should be mounted and moving freely. Check that the structure is sufficiently strong and rigid, and that its dimensions and weights conform to those listed in the specifications table of this document. Make sure that the gate is plumb and level. The fence posts must be mounted in concrete. The gate does not bind or drag on the ground.

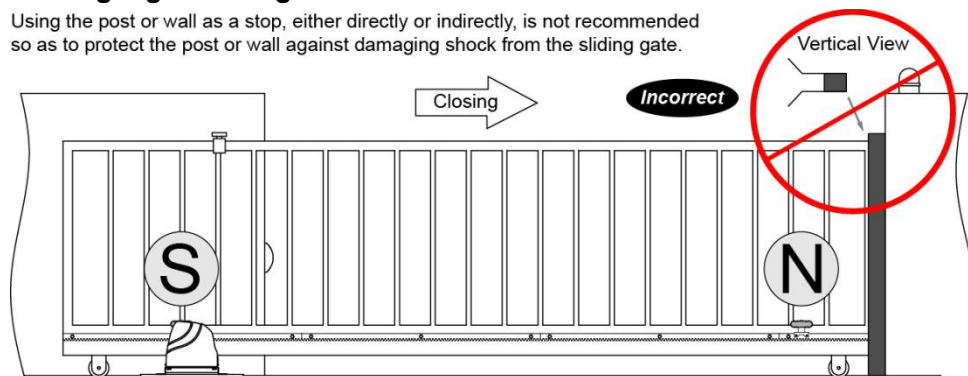
- The gate manual operation can be carried out smoothly along its entire run, and there is no excessive side slipping.
- The opening and closing gate stops are positioned.



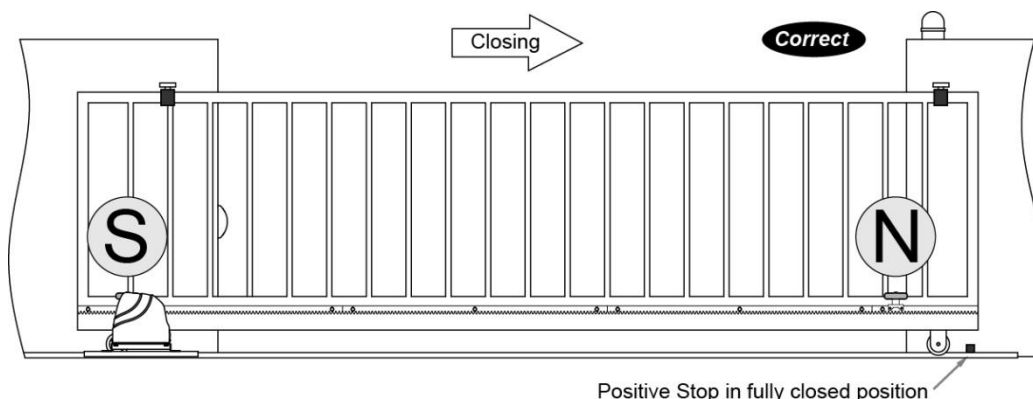
**WARNING:** Remember that control devices are intended to facilitate gate operation, but can not solve problems due to any defects or deficiency resulting from failure to carry out correct installation or maintenance. Take the product out of its packing and inspect it for damage. Should it be damaged, contact your dealer. Remember to dispose of its components (cardboard, polystyrene, nylon, etc.) according to the current prescriptions.

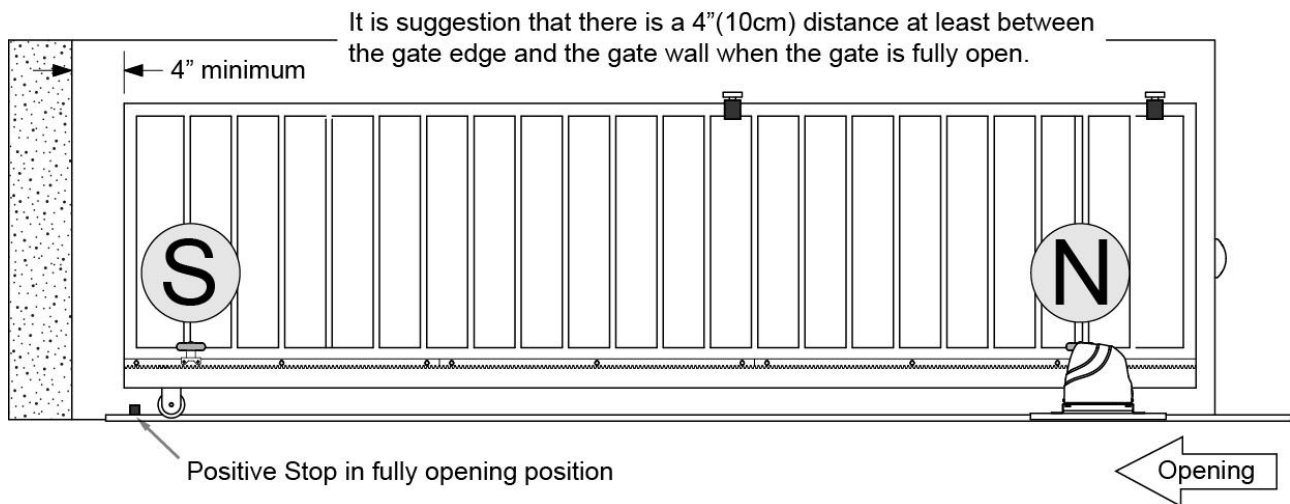
**Refer to the following Figures for gate installation.**

Using the post or wall as a stop, either directly or indirectly, is not recommended so as to protect the post or wall against damaging shock from the sliding gate.

















**In sake of safety, a positive stop must be mounted on the two end of ground track.**





## Parts List

	 Remote Control (2 pcs)	 Expansion Bolt (4 pcs)			 <b>WARNING</b>  <b>Moving Gate</b> Can cause Injury or Death! 1. Keep Gate clear! Gate may open or close at any time. 2. Do not allow children to operate the gate or play in the gate area. 3. The gate area is for vehicles only. 4. Read and understand the manual. 5. Pedestrians have to use a separate entry.  Do not remove this warning sign!
Gate Operator (1 pc)	 Release Key (1 pc)	 Base Plate (1 pc)			
 Magnet Bracket (2 pcs)	 Pan Head Screw M5×12 (8 pcs)		 M8×20 Bolt (4 pcs)	 Φ8 Lock Washer (4 pcs)	 Φ8 Washer (4 pcs)
 Magnet Assembly (N pole) (1 pc)	 Magnet Assembly (S pole) (1 pc)		 4pcs Light Duty Plastic Rack Reinforced with Steel 1005mm×N(pcs) (Optional)		



## Optional Accessories Parts List

Optional			
 Back up battery (1 set) (LM125)	 External Receiver (1 pc) (LM138)	 Wall push button (1 pc) (LM147)	 Wireless Push Button (1pc) (LM173)
 Back up battery box(1 pc) (LM130)	 Alarm Lamp (1 pc) (LM140)	 Photocell Beam System (1 set) (LM102)	 Exit Wand (1 pc) (LM157)
 Solar Controller (1 pc) (LM117 / LM118)	 Solar panel (1 pc) (LM109)	 Supporting frame for solar panel (1 pc) (LM115)	 Bracket for solar panel (1 pc) (LM116)
 Wireless Keypad (1 pc) (LM172)	 Wired Keypad (1 pc)(LM106/24) ID card (LM170)	 Mounting post for keypad (1 pc) (LM107)	 Loop Detector (1 pc) (LM155)
 GSM Remote ControlSwitch (1 pc) (LM182)	 Retro-reflective Photocell (1pc)(LM104)		

## Technical Specifications & Features

### Specifications

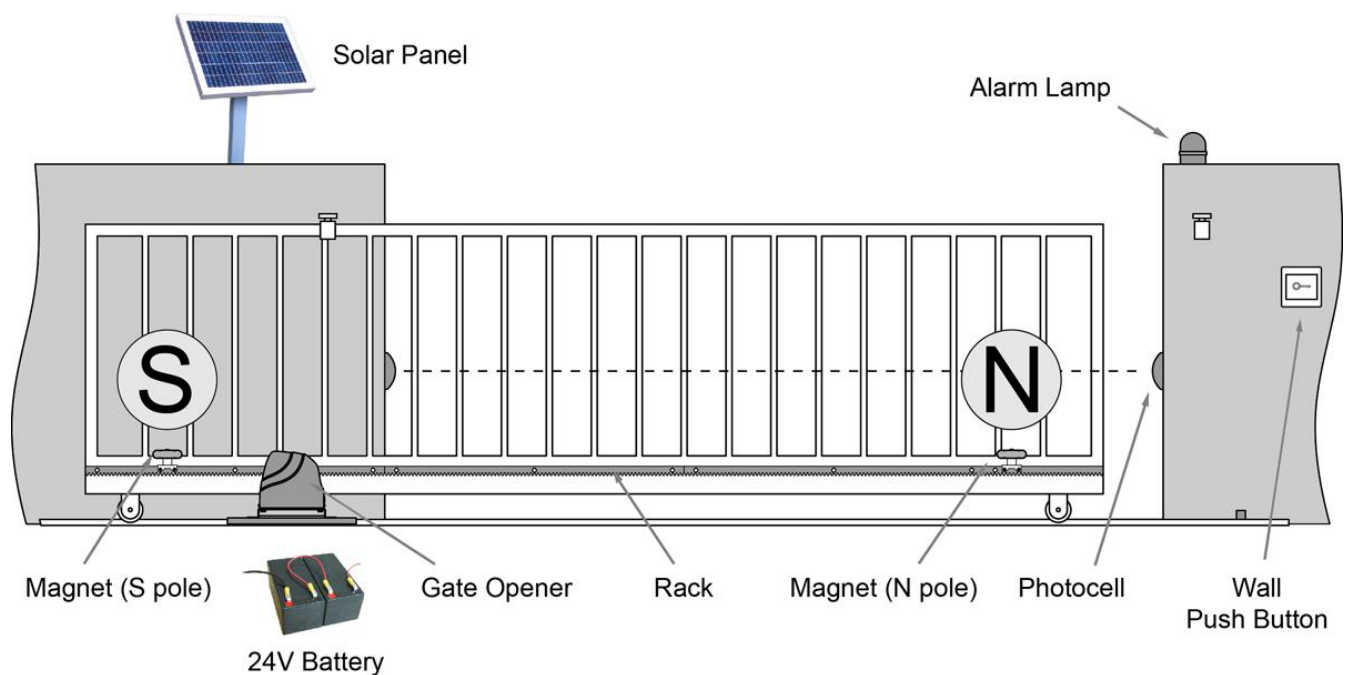
- Power supply: 120V/60HZ or 230V/50HZ
- Motor: 24VDC
- Absorbed power: 120W
- Gate moving speed: (7 "/second) 18 cm/second

- Max gate weight: 400KGS
- Max torque: 8Nm
- Environmental conditions: from -15°C to +40°C
- Protection class: IP44
- Dimensions: 29.5×20×22.5 CM

## Features:

- Soft start and soft stop
- Midway mode
- Easy to install and low maintain
- Quick selection for the gate open/close direction
- Reliable rolling code technology
- Emergency release key in case of power failure
- Stop in case of obstruction during gate opening
- Reverse in case of obstruction during gate closing
- Built in adjustable auto-close (0, 30, 60, 90 seconds)
- Built in max. 90 seconds Motor running time (MRT) for multiple safety protection
- Reliable electromagnetism limit for easy adjustment
- Optional accessories

## Installation Overview



## Installation of the Opener

### Caution:

\*Be sure that the opener is installed in a level and paralleled position and is properly secured. Improper installation could result in property damage, severe injury, and/or death.

\* Before starting installation, ensure that there is no point of friction during the entire movement of the gate and there is no danger of derailment.

\* Ensure that the **Warning Signs** are present.

**Necessary Tools:** The following tools may be necessary to install the Gate opener. You will need screwdrivers, an electric drill, wire cutters and a wire stripper, a socket set, and possibly access to a welder.

When install the opener, you should build a concrete pad to support the base plate of opener in order to maintain proper stability.

### The installation proceeds are as follows:

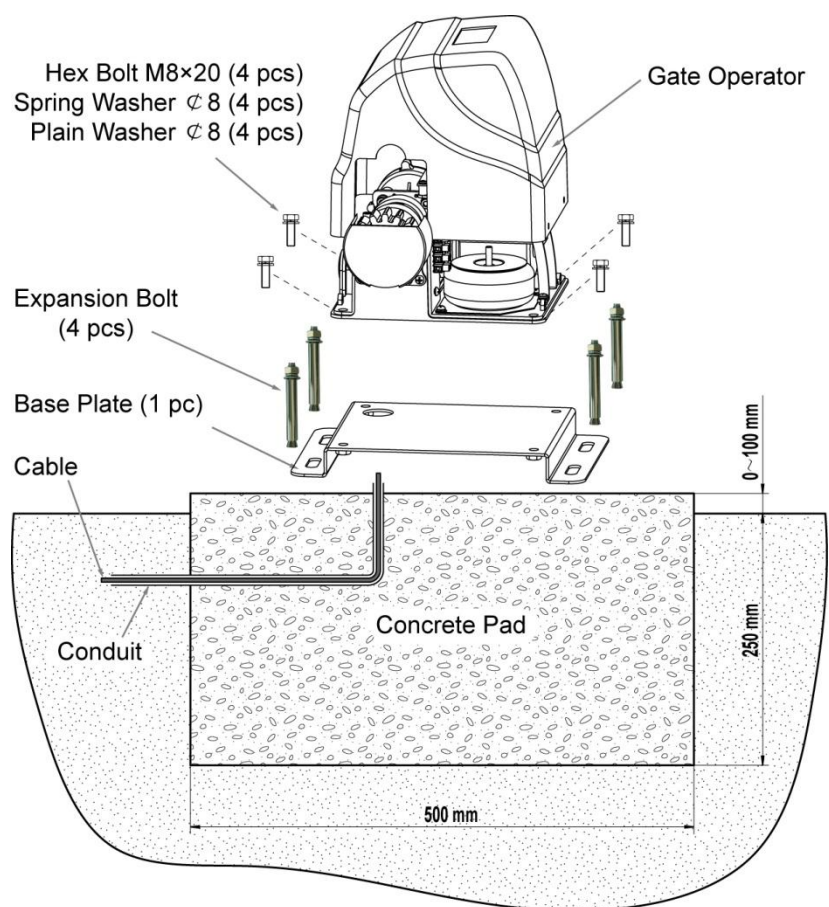
1. Dig a hole for a concrete pad which should be approximately 50 x 32 x 35cm (20 " x 13 " x 14 " ). It may protrude 10 cm (4") above ground and 25 cm (10") in depth underground. Increase the pad height if necessary to protect the system from flooding, heavy snow etc.

2. Prepare one or more conduits for the electrical cables before pour concrete. Remember that cable conduits have to pass through the hole in the base plate.

3. Pour concrete and before it starts to harden, check that it is parallel to the gate leaf and perfectly level.

4. Mark the position of four expansion anchors according to the position of mounting hole on the base plate as soon as concrete become harden. Double check your marking, move the base plate and drill the 4 holes using a 10mm (3/8") masonry bit. Put the 4 expansion anchors (provided) into the holes and firmly tighten.

5. Place the opener onto base plate. Check that it is perfectly parallel to the gate leaf, and then screw the four bolts and washers supplied. It's only temporary installation. Further adjustment will be required when install the rack.



## Manual Operation

The opener should be put in the manual (emergency release) position before fitting the rack, installing the opener and limit switch. The process is as follows:

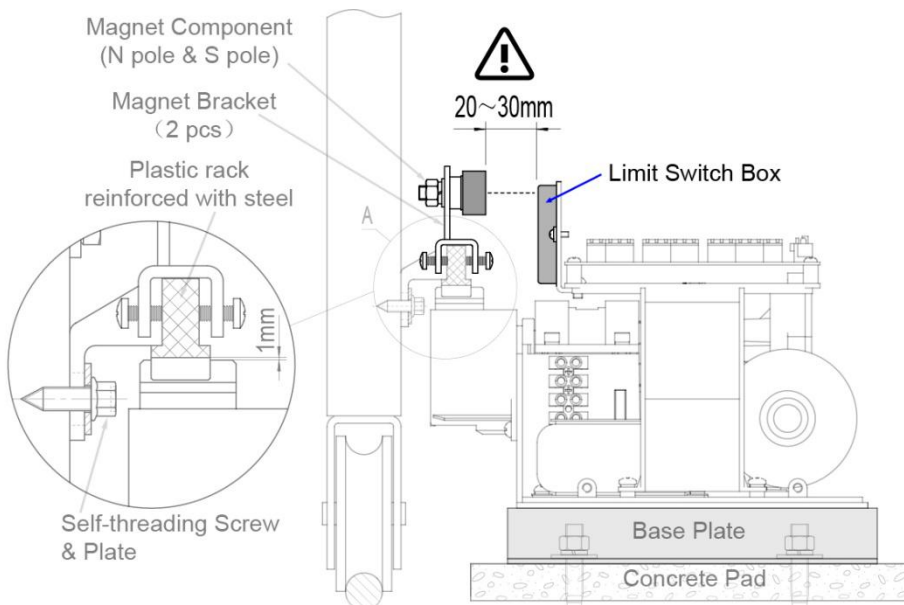


- 1) Take off the rubber stopple.
- 2) Insert the Release Key and turn it in counter-clockwise 90° to disengage the clutch between the gear shaft and power output. Now the opener is in the manual operation.

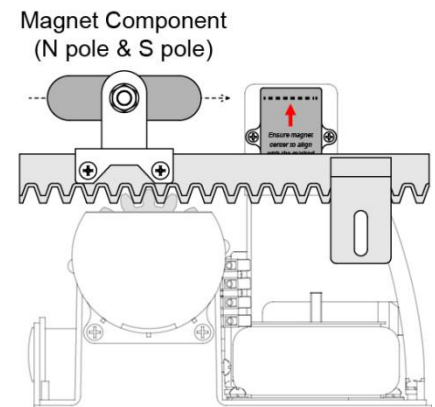


## Fit the plastic rack reinforced with steel

1. Start with gate in closed position
2. There are four sections of plastic rack which is one meter length. (you can order extra rack from dealer if necessary)
2. Put one end of rack section on the gear of opener as a temporary support. Make rack level and mark the rack's mounting holes on the gate.
3. Fit the rack by self-threading screws. This kind of plastic rack is quieter and allows height adjustments to be made even after it has been fixed. Please keep 1.0mm space between the rack and the gear to avoid the weight of the gate leaf effect on the opener.



*Ensure magnet center to align with the marked line above !*



## Installation of the Magnets

Before install limit switch, make sure the gate opener is put in manual operation. (the clutch connected with gear shaft is disengaged) and the mains power supply is disconnected. Position the S&N Magnet Components approximately on the gate and move the gate by hand to fix them in place.

## Fit magnets bracket

Push the gate fully closed by hand. Locate and install the magnet bracket so that the opener will stop at the desired close position when the close limit switch approaches it.

Push the gate fully open by hand. Locate and install the magnet bracket so that the opener will stop at the desired open position when the open limit switch approaches it.

***The magnet component with S pole outside must be installed at left side and the magnet component with N pole outside must be installed at right side from the view inside of property.***

**Ensure magnet center to align with the marked line above !**

The magnets should be **20~30mm** away from the **Limit Switch Box**. If it is too near or too far, the switches will fail to work. Adjust the position of the magnets until the positions of the opening and closing meet the requirement.

**Warning:** Improper magnets installation may cause the gate crash into end barrier, which is very dangerous !

## Important:

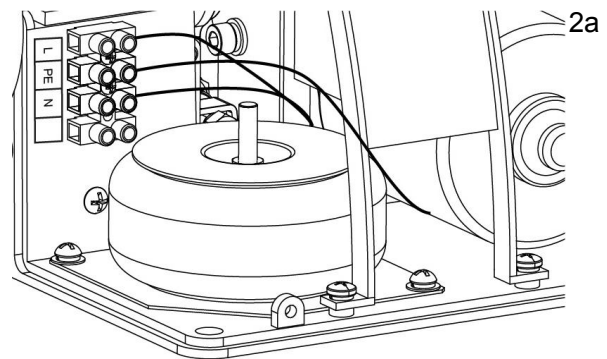
- \* Check that the rack teeth must engage the gear teeth throughout their full thickness. If not, adjust the position of the opener or/and place a few shims between the rack and gate.
- \* Manually slide the gate leaf to ensure the rack is proper on the gear of opener.
- \* Repeat same steps of first rack section to install the rest rack sections until proper length is reached.
- \* Cut away any excess of the rack (Note: rack length must be longer than actual travel of the gate)
- \* Thoroughly fasten the four nuts as well as spring washers onto expansion bolts tightly, enabling the opener is firmly secured on the concrete pad during the whole gate travel.

## Connecting of Power Supply

The power supply cord should not be smaller than  $3 \times 0.75\text{mm}^2$  (18AWG) for its diameter.

Connect the live wire, neutral wire and earth wire to the "L", "N" and "PE" terminal respectively.

**NOTE: The power supply cord is not included in factory.**



## Connecting Of the Control Board

### 1. Motor

The **RED** wire of the motor should be connected into the "1" terminal.

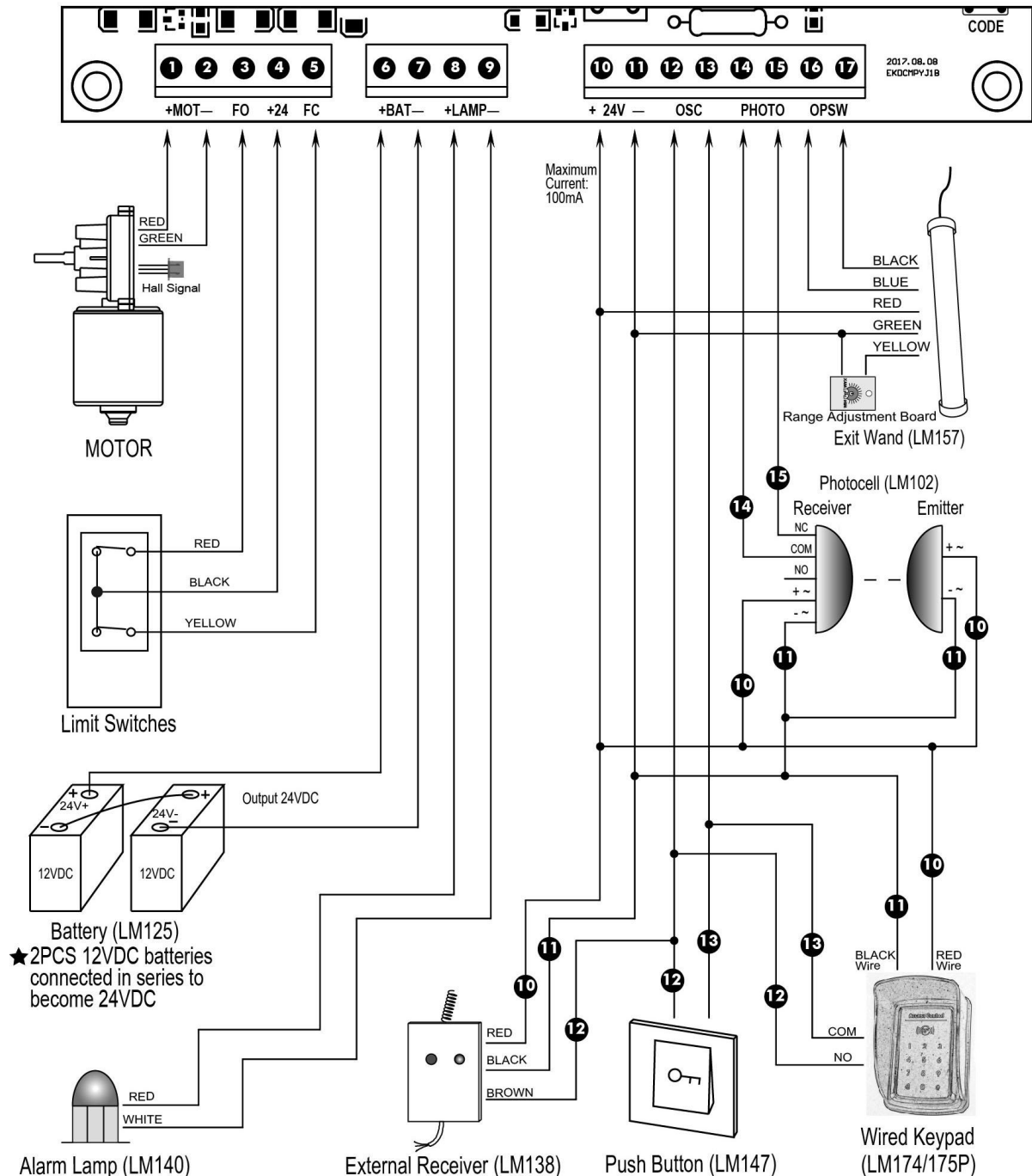
The **GREEN** wire of the motor should be connected into the "2" terminal.

### 2. Limit Switches

The **RED** wire of the limit switches should be connected into the "3" terminal.

The **BLACK** wire of the limit switches should be connected into the "4" terminal.

The **YELLOW** wire of the limit switches should be connected into the "5" terminal.



### 3. Battery

The **positive** terminal of the battery should be wired to the “6” terminal.

The **negative** terminal of the battery should be wired to the “7” terminal.

**The solar controller LM118 is required to protect the battery if the battery is used as the primary power supply in system. Please refer to the user manual of control LM118 separately.**

### 4. Alarm Lamp (24VDC)

The **RED** wire of the alarm lamp should be connected into the “8” terminal.

The **WHITE** wire of the alarm lamp should be connected into the “9” terminal.

### 5. External Receiver

The **RED** wire of the external receiver should be connected into the “10” terminal.

The **BLACK** wire of the external receiver should be connected into the “11” terminal.

The **BROWN** wire of the external receiver should be connected into the “12” terminal.

### 6. Push Button

The push button should be wired to the “12” and “13” terminals. The gate opener works alternately by

pushing the button (open-stop-close-stop-open).

### 7. Wired Keypad (24VDC)

The **RED** wire of the wired keypad should be connected into the “10” terminal.

The **BLACK** wire of the wired keypad should be connected into the “11” terminal.

The “**NO**” terminal of the wired keypad should be wired into the “12” terminal.

The “**COM**” terminal of the wired keypad should be wired into the “13” terminal.

### 8. Photocell

Use a 2-core cable to connect the “+ ~” terminal of the photocell’s emitter to the “10” terminal, the “- ~” terminal to the “11” terminal. Also the “+ ~” and “- ~” terminals of the photocell’s receiver should be connected to the “10” and “11” terminals in parallel.

Use another 2-core cable to connect the “**COM**” terminal of the receiver to the “14” terminal, the “**NC**” terminal to the “15” terminal.

**NOTE: The PHOTO terminal has been shorted by a jumper wire. Please check if the wire is missing if the gate can open but can’t close when a photocell is not used**

### 9. Exit Wand

The **BLUE** wire of the exit wand should be connected into the “16” terminal.

The **BLACK** wire of the exit wand should be connected into the “17” terminal.

The **RED** wire of the exit wand should be connected into the “10” terminal.

The **GREEN** wire of the exit wand should be connected into the “11” terminal.

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

### 10. Solar Panel

Please refer to the manual instruction of solar panel and controller separated.

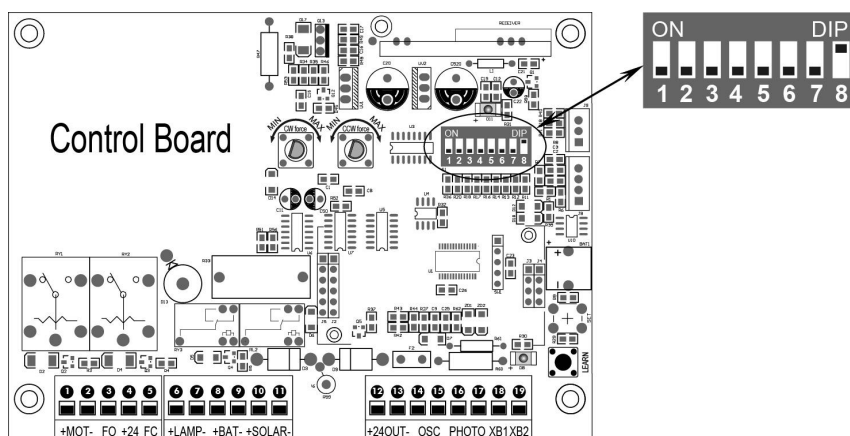
**NOTE: Using of the photocell, exit wand, keypad and external receiver would cause the battery exhausted quickly. Big capacity of batteries and big power of solar panel is required if you want to use any one of them (If the batteries and solar panel is used as main power supply).**

## Setting Of the Control Board

**WARNING: Ensure the gate opener is Power Off when you make any adjustment of the gate opener. Cut off the power before change the settings. Keep away from the gate during you set the gate opener system in case of the unexpected gate moving. Always ask the help of professional technician /electrician if you have any question.**

### 1. DIP Switches

The DIP switches are used to set the running time of the motor in pedestrian mode, fine adjust the soft stop period of the motor, auto close time of the gate opener and fast change the open/close direction which is determined by the position of the gate opener installed.




### DIP Switch #1–#2: Running time of the motor in Midway Mode

DIP Switch #1: ON – 2 Seconds OFF – 0

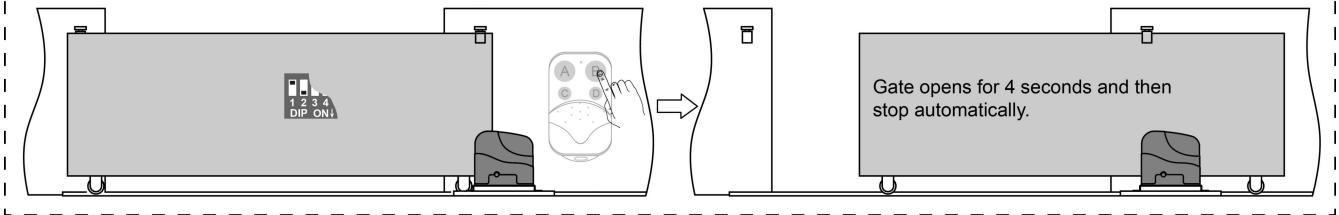
DIP Switch #2: ON – 4 Seconds OFF – 0

**NOTE:** The midway mode function would be disabled if both DIP switches are turned off. Factory default setting is disabled. The midway mode could be activated by pressing button B of the remote control when the gate is in the full closed position.

E.g.  → Running time of the opener in midway mode is 2+4=6 seconds.

Pedestrian mode:

1. Gate in full closed position.
2. DIP Switch 1# or 2# has been set to ON.
3. Press Button "B" of the remote control to open the gate.




### DIP Switch #3–#5: Fine adjust the soft stop period of the motor

DIP Switch #3: ON – 0.5 Second OFF – 0

DIP Switch #4: ON – 1 Seconds OFF – 0

DIP Switch #5: ON – 2 Seconds OFF – 0

**NOTE:** Every time you restart the gate opener after power off, you should use the access control device (such as remote, push button and etc.) to operate the gate opener to run for a complete opening cycle and a complete closing cycle. You would achieve the soft stop in your next opening/closing cycle. Factory default soft stop time is 2 Seconds. You can turn the DIP switches on/off to fine adjust the soft stop time to meet your actual needs.


E.g.  → The soft stop period of the motor is 0.5+1=1.5 seconds.

### DIP Switch #6–#7: Auto close time of the gate opener

DIP Switch #6: ON – 30 Seconds OFF – 0

DIP Switch #7: ON – 60 Seconds OFF – 0

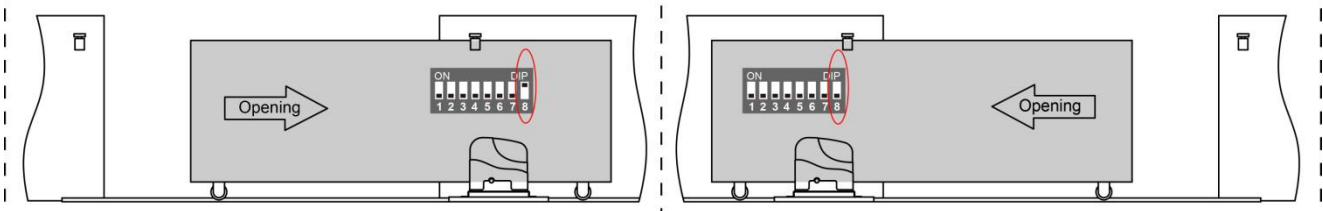
**NOTE:** The auto close function would be disabled if both DIP switches are turned to off (factory default setting).

E.g.  → Auto close time of the gate opener is 30+60=90 seconds.

### DIP Switch #8: Left/Right open

ON — Right open (factory default setting). For gate to open toward right and close toward left.

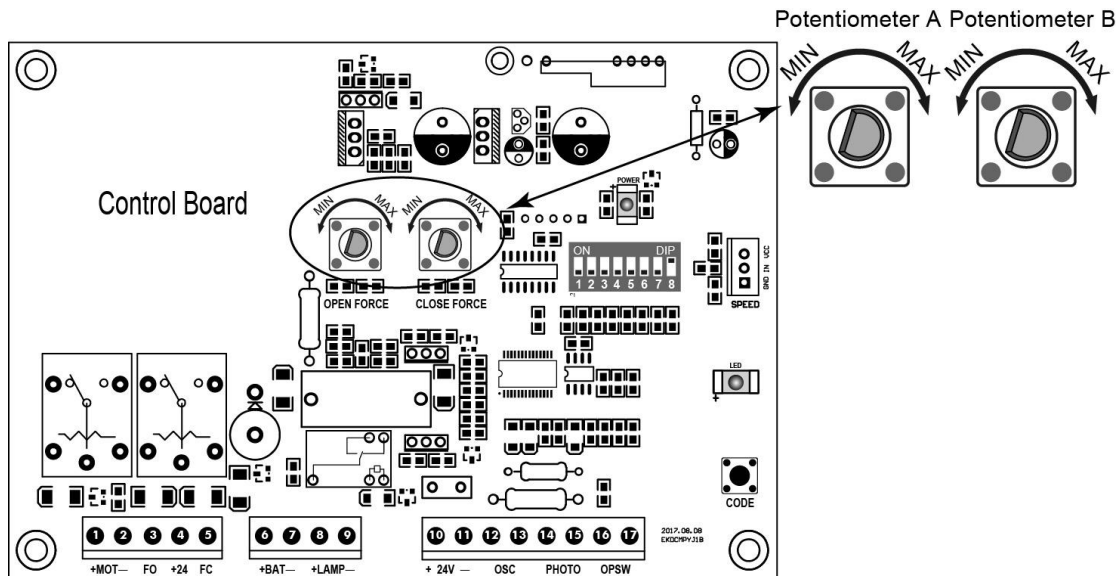
OFF — Left open . For gate to open toward left and close toward right.





## 2. Potentiometers

Potentiometer A and B are used to adjust the stall force of the gate opener. One for opening force and another for closing force. Turn the potentiometer clockwise to increase the stall force. Turn the potentiometer counter-clockwise to decrease the stall force.



## Test the reversing sensitivity

For the sake of safety, it is very important to test the reversing sensitivity as soon as the control board set is finished. The reversing sensitivity adjustment is inverse correlation with stall force adjustment in potentiometer A and B. In other word, the stall force level is higher; the reversing sensitivity level is lower. Put an immobile object along the gate path, and then operate the gate to strike it during the close cycles. The gate must reverse as soon as object is struck with it. If the gate doesn't reverse, please increase the reversing sensitivity by turning the potentiometer in counter-clockwise direction. (Turning the stall force potentiometer toward to MIN position to increase the reversing sensitivity)

**Note 1: If the sensitivity setting is too higher, the gate will stop or reverses very easy by itself while there is little obstruction or resistance such as strong wind or heavy snow sometimes.**

**Note 2: Always check the gate reversing function every each time of control board set or restart after power off.**

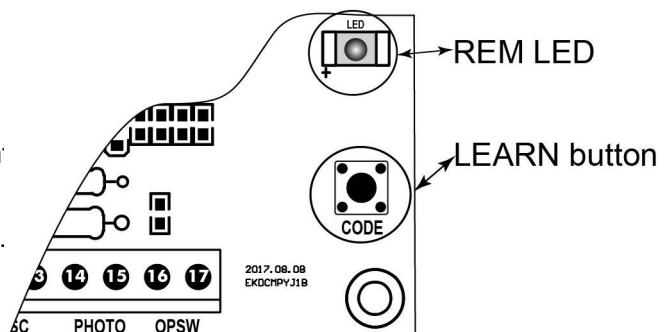
## How to learn or erase the remote

### Learn the remote

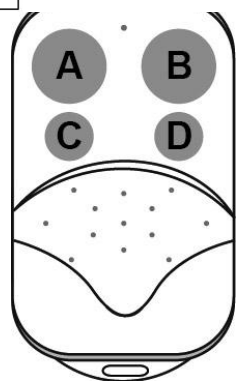
Press and release the learn button, the **REM LED** light will be on, then press the key in the remote twice in 2 seconds, the **REM LED** light will flash for 4 seconds. Now the remote has been learnt successfully.

### Erase all the remote codes

Press and hold the learn button until the **REM LED** light is off. Now all remote codes have been erased.



## How to use the remote to control the opener



**Key A** is used to operate the opener to work alternately (open-stop-close-stop-open).

When the Pedestrian Mode function is enabled, **Key B** is used to achieve the Pedestrian Mode function (open the gate for the pre-setting time). When the Pedestrian Mode function is disabled, the opener works alternately (open-stop-close-stop-open) by pressing **Key B**.

The **Key C** and **Key D** are reserved for garage door opener, swing gate opener in our brand. While if you want to use **Key C** and or **Key D** to control a second sliding gate opener, an external receiver (optional) is necessary.

## Troubleshooting

Have a multi-meter to check voltage and continuity. Use caution when checking high voltage terminals.

Symptom	Possible Solution(s)
The opener does not run. Power LED is OFF.	<ol style="list-style-type: none"><li>1. Make sure that the power cord is properly plugged into the mains outlet.</li><li>2. Check if the output voltage of the transformer is 24VAC. If the voltage measures 0, the transformer may be overheated or damaged. Turn power off and allow board to cool for several minutes then reset. Replace the transformer if the symptom still exists.</li><li>3. Check the fuse in the control board. Replace the fuse if it was burnt out.</li><li>4. Check the control board. Replace the control board if necessary.</li></ol>
The opener does not run. Power LED is ON.	<ol style="list-style-type: none"><li>1. Check to be sure the beam is not blocked if a photocell is used as a secondary entrapment prevention device. If a photocell is not used, photocell terminal of the control board should be shorted by a jumper wire.</li><li>2. Check the motor. Release the clutch then disconnect the wires of the motor from terminal 1 and 2. Connect the wires to 24V battery directly, the motor should run, and then exchange the wires, the motor should run in the opposite direction. If the motor runs in both directions, please check the other parts listed below.</li><li>3. Check the limit switch. Use a jumper wire to short terminal 4 with terminal 3 and 5, and then use a keying device to operate the opener, replace the limit switch if the motor could run in both directions.</li><li>4. Check the control board. Replace the control board if necessary.</li></ol>
Remote control does not work.	<ol style="list-style-type: none"><li>1. The indicator light of remote control is not on. Check the battery in your remote control. Replace the battery if necessary.</li><li>2. The distance you use the remote is too far away from the opener. Try it again closer.</li><li>3. Remote control is not suitable for receiver. After making sure the codes are correct, erase remote controls and then re-program the codes in the device.</li><li>4. Check the control board. Replace the control board if necessary.</li></ol>
The gate starts but it is immediately stop or reverse	<ol style="list-style-type: none"><li>1. Check the HALL sensor board which is located in the motor has been connected to the control board tightly.</li><li>2. Check that the clutch is adjusted properly and is not slipping.</li><li>3. The opening force or closing force is adjusted too small. Turn the</li></ol>

	<p>Potentiometer A&amp;B to increase the force.</p> <p>4. Disconnect the gate from the gate opener and check that the gate slides freely without any binding.</p> <p>5. Check the control board. Replace the control board if necessary.</p>
The gate opens, but stops and will not return.	<p>1. Please note the two limit magnets are different: one is N pole and another is S pole. Please try to exchange the two magnets.</p> <p>2. Please try to exchange the limit switch wires CL (close) and OP (open).</p> <p>3. Maybe the magnet was installed in the wrong position so it inducts both switches. Adjust the magnets to the correct position refer to the manual.</p> <p>4. Check the control board. Replace the control board if necessary.</p>
The gate can open, but fails to close.	<p>1. Photocell is obstructed. Remove obstruction.</p> <p>2. The limit switch is failed. Use a jumper wire to short terminal 4 with terminal 3 and 5, and then use a keying device to operate the opener, replace the limit switch if the motor could run in both directions.</p> <p>3. Check the control board. Replace the control board if necessary.</p>

## Maintenance

Every six months check the following items for proper operation of the unit.

- \* Lubricate shafts.
- \* Keep opener clean at all times.
- \* Check for loose or corroded wire
- \* Ensure the opener is well earthed, and correctly terminated.
- \* Always check the Stop/Reverse in case of obstruction function when performing any maintenance. If this function can't be made operable, remove this opener from service until the cause of the malfunction is identified and corrected.



**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.**

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