Installation Guide

Version 03-10

SD
Sliding Gate Opener

CE SGS UKAS

1. Features:

1. Fully built-in compact design with fashionable streamline
2. Pedestrian opening or full open function
3. With interface of flashing lamp (AC/DC) for pre-warning (with LDR control)
4. Auto closing delay time adjustable
5. Backup battery is available with battery status display
6. Full speed operation selectable
7. Digital gate limits positioning system (DLPS)
8. Electronic soft start and soft stop
9. Magnetic limit switch control (optional)
10. Door alarm (when gate in closed position)
11. Photocell sensor to prevent hitting obstacles
12. Automatic stop when hitting obstacle during opening
13. Automatic reverse when hitting obstacle during closing
14. Solar System compatible

2. Technical Specifications

▣ Electrical

Power supply	AC110V to 240V ± 10%, 50 HZ
Operating Voltage	DC 24V
Electronic Controller	Microcontroller Based
Safety Detection	Over Current Detection
Safety Barrier	Infrared Beam Sensor (optional)
IP Rating	IP57

▣ Mechanical

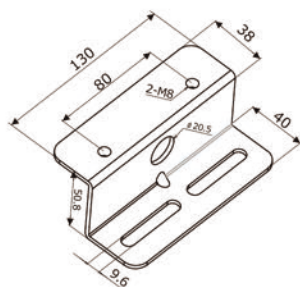| Model	SD
Max. Gate Weight	800 kg
Motor speed	1800 rpm
Gate moving speed	13m/min
Gate Limit type	Intelligent Position Detection/ Magnetic Limit Switch (optional)
Operating distance	≥50m Frequency:433.92 MHz
Remote control mode	Close/ Open/ Stop/ Pedestrain Opening
Auto close time	0~99 sec (Adjustable)
Noise	≤65dB
Product actual size	29*22*23cm
Packing size	36*29*36cm
Environmental temperature	-15℃ to +55℃

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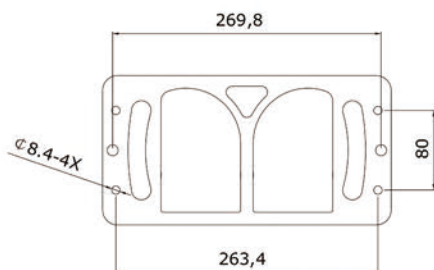
3. Installation

Motor Dimension

230

107

290

150

220

(Unit: mm)

Gear & Rack Installation

28

93

16t

50.8

40

290

40

36

101

20t

50.8

40

290

40

(Unit: mm)

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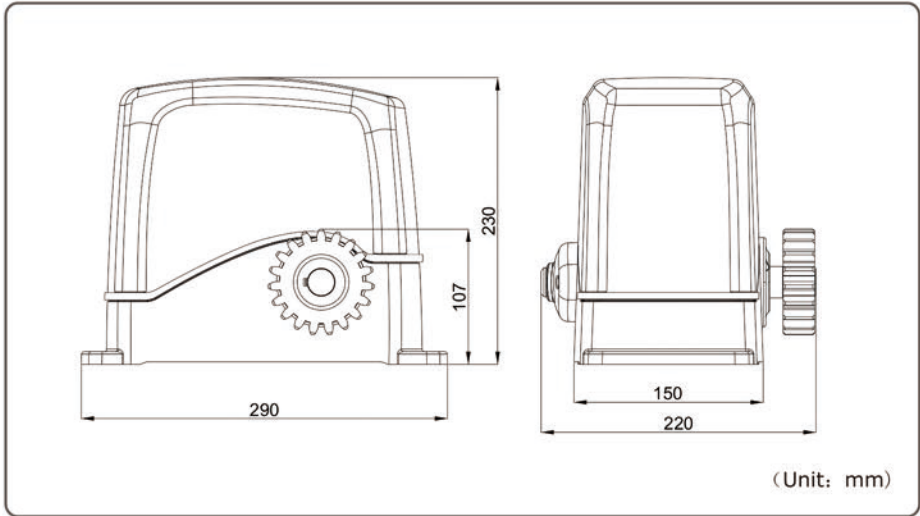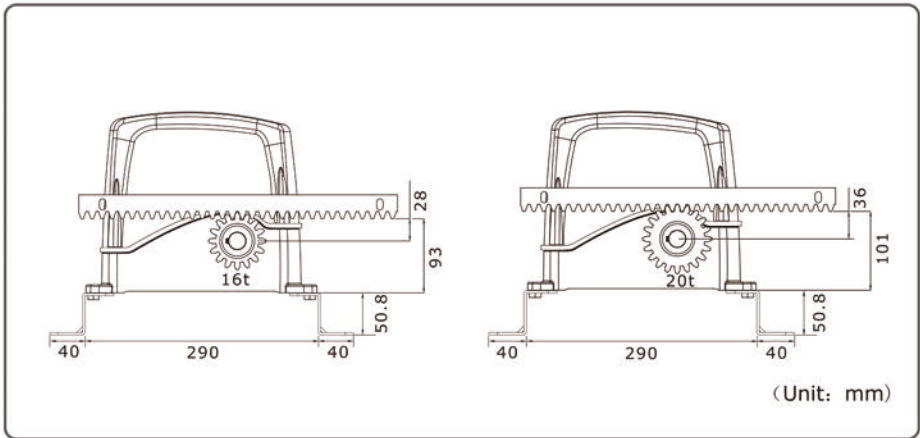
Mounting Base Dimension

Mounting Base

Mounting Plate (optional)

(Unit: mm)

Installation Diagram

1. Push Button
2. Photocell
3. Magnetic Limit Switch
4. Rack
5. AC Flashing Light
6. DC Flashing Light
7. SD Sliding Motor
8. Remote Control

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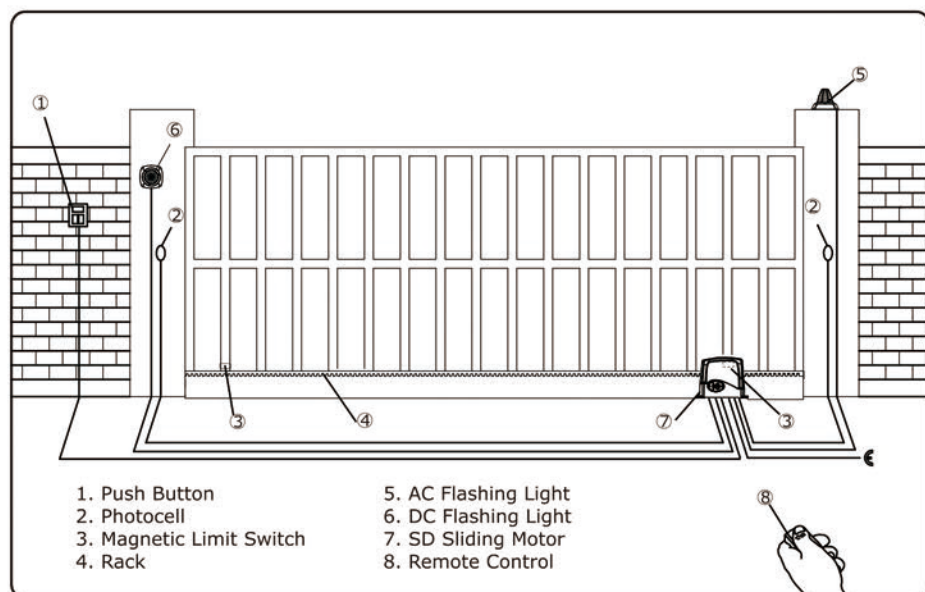
Motor & Rack Installation

1. Fix the mounting base with the screws on the ground.
2. Fix the motor on the mounting base and make sure motor gear contrate with the gate side keeping 25 mm space, then screwing on the nuts.
3. Manual release the slider motor (Following steps on page 5).
4. Fix the rack onto the gate, keep 1-2mm space between the rack and gear.
5. Move the gate several times with hand, make sure the rack work well with the gear, and the gate can move smoothly.
6. Turn the slider motor to electric mode.

If use mounting plate, please refer to the following steps

1. Reserve a place for the mounting plate
2. Arrange all necessary electric wire in advance
3. Fix the bolt onto the mounting plate, make the threaded portion 25-35mm higher than the plate, lock up the plate with nuts
4. Pour cements on the ground, put the mounting plate in place before the cements solidified. Make sure the mounting plate is in a level and horizontal position with the gate.
5. Take off the nut from the bolt, put the slider motor onto the plate, make sure there is 20mm space between the gear wheel of the motor and the side of the gate, fix the nuts.
6. Manual release the slider motor (Follow steps stated in the Manual Release page 5)
7. Fix the rack onto the gate, keep 1-2mm space between the rack and the gear wheel.
8. Move the gate for several times by hand, make sure the rack work well with the gear, and the gate can move smoothly.
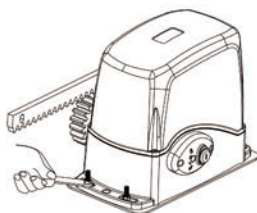9. Turn the slider motor to the electric mode.
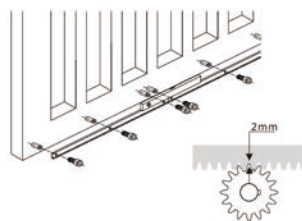
Mounting Base Installation
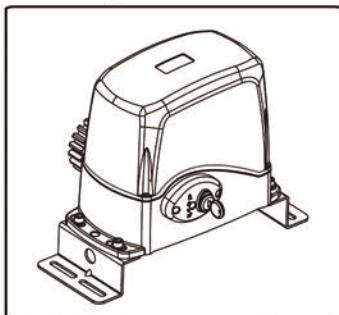
Mounting Plate Installation
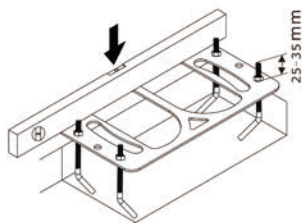
1. Installation of the mounting plate

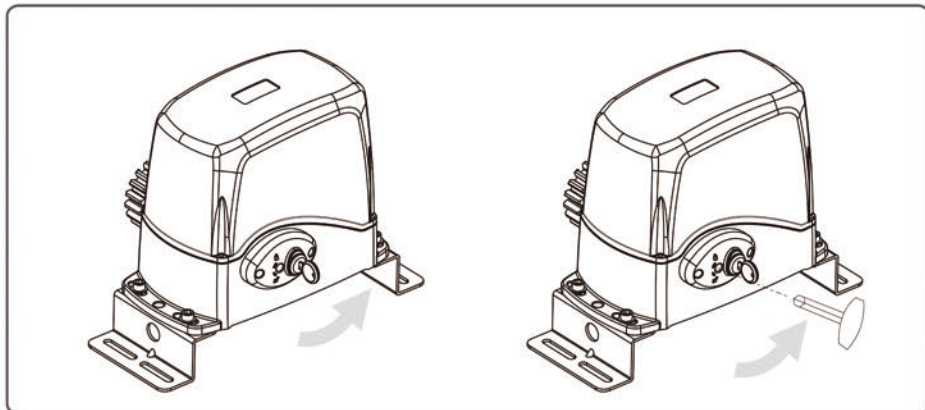2. Installation of the slider motor

3. Installation of the rack

*Optional

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4. Manual Release

Place the key in key slot and position at 12 o'clock, this will allow the allen key supplied to fit into the hole, rotate handle 90 degree counterclockwise, The gear can now be rotated manually. Reverse steps to relock drive gear.

*Read all instructions fully before proceeding with initial set up.

5. Before Installation
Confirm Direction of Travel

With the gate NOT positioned on top of the motor drive gear, press the open button on the remote and check if the gear drive is turning in the direction your gate is required to open.
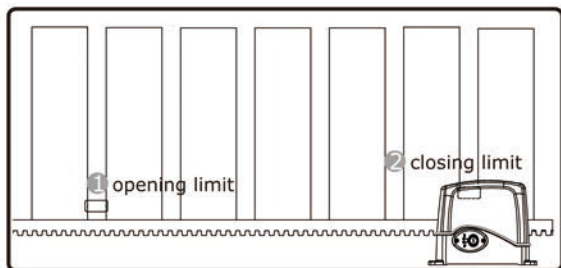
Change motor direction:
PCB before 2013 reverse the red+ and black – terminals on the motors Pc board.
PCB after 2013 ref to adjustment setting B3 (page 11).

Make sure power is switched off before doing this step.

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6. Mounting the Sensor Magnets (Magnetic Limit Switch)

1 opening limit   2 closing limit

Gate opens and closes when the magnets pass the motor sensor

With the gate motor in manual release: Ref to manual release section. Position gate in the closed position. Place Short magnet onto the plastic geared track and tighten where gate is required to stop after opening.

With the gate motor in manual release: Ref to manual release section. Position gate in the open position. Place the tall magnet onto the plastic gear track and tighten where gate is required to stop after closing.
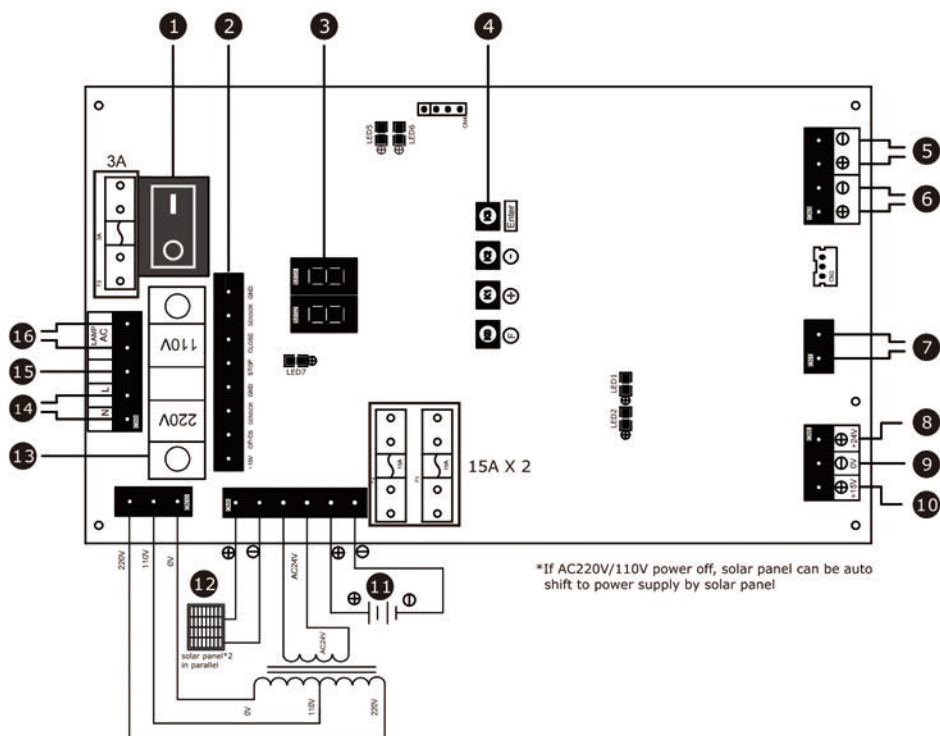
*Magnet heights may need to be adjusted slightly for sensor to read.

Important ensure motor gear is placed back into the lock position before proceeding

Warning if you are unsure of this step we recommend you place the magnetic sensor 1 meter in from each end for trialling.

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Wiring

*If AC220V/110V power off, solar panel can be auto shift to power supply by solar panel

1. Power Button
2. Accessories and command device's terminals
3. Indicator
4. Function Adjustment Button
5. DC Flashing Light
6. Buzzer
7. DC24V Motor
8. Output DC24V (unstable voltage)
9. 0V "－" output
10. Output DC15V stable voltage (load current can't be over 500mA)
11. Backup Battery (12V 9Ah X 2 in series)
12. Connector for solar panel / adaptor
13. Switch (AC 220V & 110V)
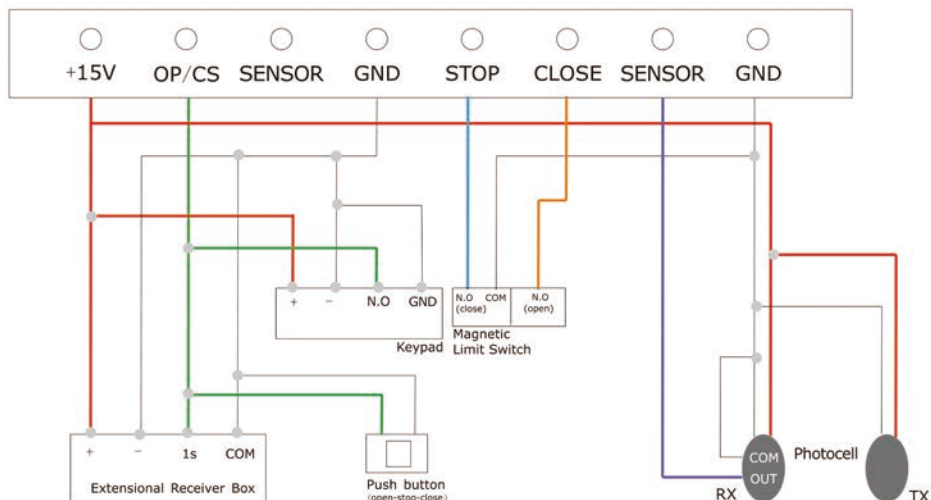14. Power Supply (AC 220/110V)
15. Earthed
16. AC Flashing Light

LED Diagram

Power On, LED5 will blink.

LED1 Open LED
LED2 Close LED
LED5 Power LED
LED6 Received signal for remote control LED
LED7 Push Button LED

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Wiring for Optional Accessories

Item	+15V	OP/CS	SENSOR	GND	STOP	CLOSE	SENSOR	GND	Remarks
Description	Stable voltage output	Open/Stop/Close	back-up	"-" & "Concentration line"	close limit	open limit	Normally opening signal	"-" & "Concentration line"	
Extensional Receiver Box	●	●		● ●					
Keypad	●	●		● ●					
Push button		●		●					
Photocell (sender)	●							●	
Photocell (receiver)	●						●	● ●	
Magnetic Limit Switch					●	●		●	

"●" Means the connection port

*Instructions for photocell:
During closing, if active the signal of photocell, the PCB will activate opening operation
When photocell sensed the obstacle, the door will be stopped then opened immediately.
After remove the obstacles, the door will operate according to the new command

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7. Remote Control Setting

Remote Control: Activation

Press and hold down the "F" button for approximately
1 second until FF appears blinking on LED then release
button: Pointing the remote at the PC board press any
button on the remote. Remote should now be activated.

*60 remote controls can be set at most

*Verify the remote control is activated by pressing the remote
control button. The LED will be on/Off (see notes LED Diagram)

Remote Control: Memory Erasing

Press and hold down the "F" button for approximately
1 second until "FF" is blinking on LED, release the button
then press down the "Enter" button on the PC board.

Close
Open
Stop
Function /
Half open
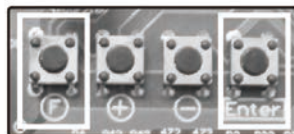
433MHZ Remote control

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8. Total timer adjustment for opening & closing gate

Gate must be in **the closed position** before starting the total timer adjustment for opening gate.

On the PC board hold down the "**+**" button until "**AA**" blinking on the LED.

Holding down the "**P**" button & "**Open**" button both on the remote until the indicator on the PC board is blinking, when blinking, Release both buttons. The motor will start moving at low speed then stop once the OPEN magnet reaches the motor limit switch sensor.
(Repeat steps if motor does not move)

Gate in the fully opened position based on your magnet placement.

Holding down the "**P**" button & "**Closed**" button both on the remote until the indicator on the PC board is blinking, when blinking, Release both buttons. The motor will start moving at low speed then stop once the OPEN magnet reaches the motor limit switch sensor.
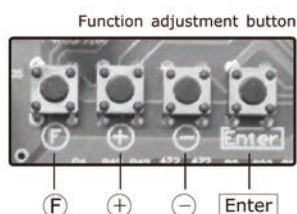**(Repeat steps if motor does not move)**

Gate should now be in the fully closed position based on your magnet placement. Press down "F" button to exit learn mode. Repeat steps if adjustments are required to the opening & closing distance by reposition magnets.

Function adjustment button

F   (+)   (−)   Enter

Remote Control

Close
Open
Stop
Function
Half open

* Please following the steps if no magnetic limit switch, and then Do the Motor Setting
1. Make sure it has endstop at the gate opening and closing position.
2. Make sure the gate is at closed position.
3. After Powered on, making the gate move a small distance when you press the "open" button , then press the "Close" button, the gate will move till meeting the endstop.

Reset gate limits memory after power failure
When doing the motor adjustment after power failure or turn off

Press the "open" or "closed" button on the remote, after the motor operate reach to the ends, the system has been initialized, and the gate operator can work properly again.

If met obstacles and stopped, it will require to turn off power and start the procedure above again.

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Adjustment (Follow the steps below)

After you done "Total Timer Adjustment", we recommend not to change the setting for A0 ~ B0. If you prefer to change, please refer to following steps.

Step 1: Press "F" button, the indicator will show "C8"
Step 2: Press "+" button, it'll show in turn "C9, D0, D1, D2, A0, A1, A2, A3, A4, A5 ....
Press "-" button, it'll show reversely
Step 3: Press "F" button, after choose the item, the indicator will show numbers
Step 4: Press "+" or "-" button to select levels
Step 5: Press "Enter" button to confirm
Step 6: Press "F" button for return to previous configuration menu

Function debug form

Code	Descriptions	Setting Range	Default Setting	Remarks
A0	Intermediate Stop Function with slow speed This refers to the sensitivity of gates when meeting obstacles during slow speed operation	0-99	20	Lower setting means the gates will be more sensitive to stopping
A1	Intermediate Stop Function with high speed This refers to the sensitivity of gates when meeting obstacles during high speed operation	0-99	35	Higher setting means the gates are not as sensitive to stopping on hitting an obstacle
A2	Total Timer/ distance Setting when opening gate	0-99	67	decimal/ single digits (shown on LED display)
A3			07	thousands/ hundreds digits (shown on LED display)
A4	Total Timer/ distance Setting when closing gate	0-99	67	decimal/ single digits (shown on LED display)
A5			07	thousands/ hundreds digits (shown on LED display)
A6	Force of opening and closing - slow speed Force adjustment for low speed operating during open and close	0-99	42	
A7	Force of opening and closing - high speed Force adjustment for high speed operating during open and close	0-99	99	
A8	Deceleration timer/ distance setting when opening gate	0-99	40	
A9	Deceleration timer/ distance setting when closing gate	0-99	40	
B0	Force Setting for Pedestrian opening	0-99	60	
B1	Delay activating time for remote control button (for avoiding misoperation)	0-2	0	If choose " 0 ", normal operation If choose " 1 ", delay 2 seconds then start the operation If choose " 2 ", first press stop button for 2 seconds, then close /open button to activate the operation
B2	Initial self-distance learning - fast start	0-1	0	If choose " 0 ", low speed learning If choose " 1 ", fast speed learning when push open button
B3	Motor rotation direction setting	0-1	0	If choose " 0 ", forward direction If choose " 1 ", reverse direction
C0	Actual Display of A2 and A4 setting			Digit display when motor start
C1	Actual Display of A3 and A5 setting			
C2	Alarm Setting	0-1	0	" 0 "= cancel " 1 "= Armed when gate closed
C3	Time of auto close	0-99	0	If choose " 0 ", the gate system will not have auto closing function If choose " 10 ", it means the gates will automatically close 10 seconds after completing its opening
C4	Time of auto close when pedestrain opening	0-99	0	If choose " 0 ", the gate system will not have auto closing function If choose " 10 ", it means the gates will automatically close 10 seconds after completing its opening
C5	Pedestrain Opening Distance Setting	0-99%	30	
C6	Full Speed Opening Setting	0-1	1	If choose " 0 ", Linear acceleration start(soft start) If choose " 1 ", full speed start
C7	LDR (light dependent resistors) Setting **	0-99	0	" 0 "= cancel " 1-99 "= LDR Sensitivity Setting
C8	Battery capacity display	0-99		Below " 30 " = Battery soon will be run out " 99 " = Fully charged
C9	Reserved terminal for maintainance and testing			
D0	PCB Model Number			PCB Version Display
D1	PCB Software version			
D2	Restore default setting		0	" 9 " = restore factory settings

＊Remark:C0 & C1 means the number of rotation of motor shaft
For example, if C0 display"52", C1 display "12", that means the motor rotates 1252 circles

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Solar System
Installation

Solar Panel Installation

1. Measure and mark halfway along the long sides of both solar panel sides (170mm half way)

2. Place the holding brackets over this halfway point and mark the holes. Attach the plastic washers to the holding brackets and holding arms

3. Carefully drill the 4 holes with a 13/64 drill bit and be sure you don't drill into the glass. Use a piece of thin metal between the frame you are drilling and the white to protect it.

4. Place the holding brackets and use the 10mm screws and bolts to hold in place (You can also use the 4∗13mm hex screws included).

5. Install the holding arm to the holding brackets with the 25mm screws and bolts. This can be done after you attach the holding arm to your fence post with the wiring. For maximum sun exposure, align the solar panel so the bottom is facing sunrise and the top is facing sunset.
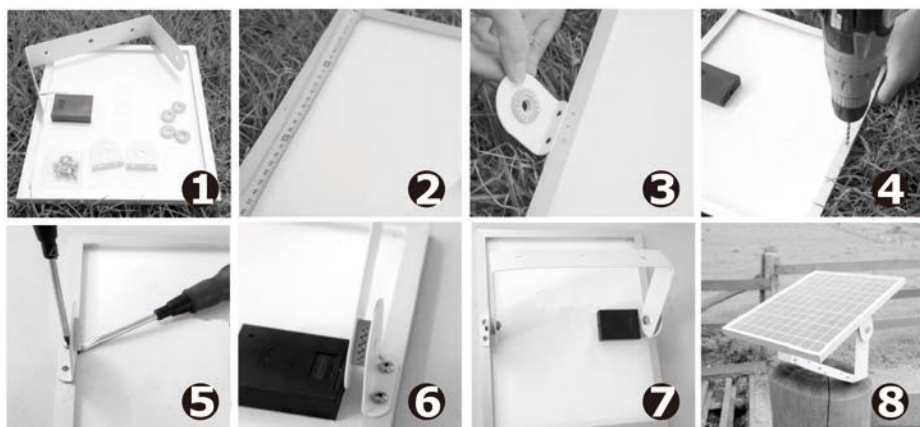
∗ If you choose solar power system,suggest to use Ahouse solar panel(1pc 36V 50W solar panel) to make sure the motor work properly.

Solar Panel Wiring Instruction

1. Using the cables, connect one cable to the positive (+) terminal of the solar panel. Connect the other end of the same cable to the positive (+) terminal of the solar panel terminal in the control board (terminal 14 – see page 7).

2. Using the other cables, connect one cable to the positive (+) terminal of the solar panel. Connect the other end of the same cable to the negative (-) terminal of the solar panel terminal in the control board (terminal 14 – see page 7).

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Battery Wiring Instruction

1. Using the supplied wire, connect the connector to the positive (+) terminal of one of the batteries. Connect the other end of the wire to the negative (-) terminal of the OTHER BATTERY.

2. Using the other wire, connect the connector to the positive (+) terminal of the battery. After the batteries are installed, the other end will be connected to the control board.

3. Using another wire, connect it to the negative (-) terminal of the battery. After the batteries are installed, the other end will be connected to the control board.

Note: make sure the bare ends of the wires do not touch together or do not touch the same metal surface at the same time.
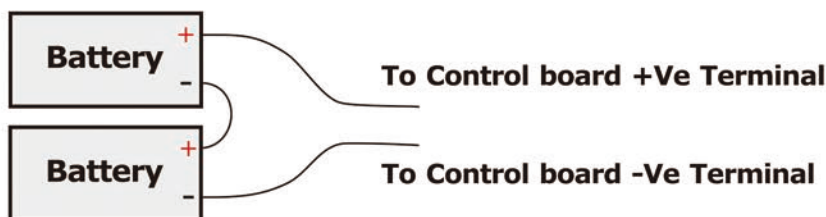
4. Install the batteries in the control box using cable ties as shown.
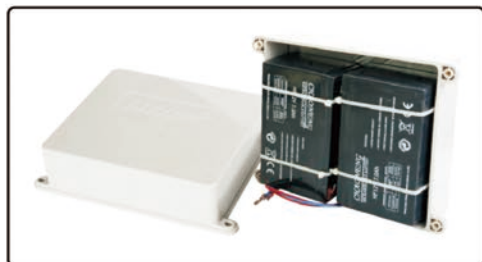
5. Connect the other end of the wire that is already connected to the positive terminal (+) of the battery to the positive (+) terminal in the control board for the battery (terminal 12 – see page 7).

6. Connect the other end of the wire that is already connected to the negative (-) terminal of the battery to the negative (-) terminal in the control board for the battery (terminal 12 – see page 7).

Battery Maintenance

Before use the batteries, please make sure that they are fully charged, it will lead to wrong operation if it is not fully charged, and need to check or replace the batteries by qualified person on a regular time basis.
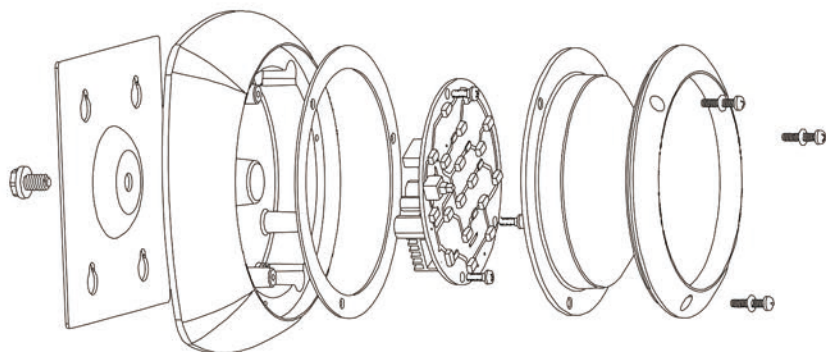
✻ Using 2 x 12V 9Ah batteries in series wiring for the solar panel backup power.
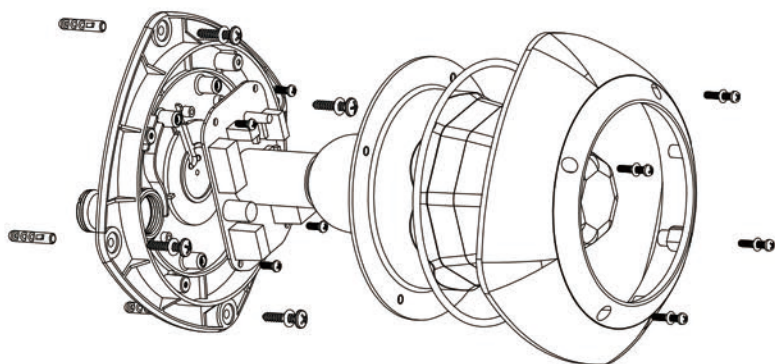✻ Battery is consumable, suggest to change battery every 9 or 10 months.

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Flashing light installation

DC LED

UFO-D
DC24V/12V

AC

UFO-A
AC220V/110V

If using solar systems, connect with DC24V flashing light only
*wiring for flashing light, (see Page 7)

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PCB
Self Debug and Error Code List

Code	Descriptions
E0	Low speed hampered stop
E1	Fast speed hampered stop
E2	Using limit switch stop
E3	Normal operating without limit switch
E4	Motor running over 2 minutes stop
E5	Hall sensor failure
E6	Pedestrian opening and closing stop
E7	Input Voltage (transformer, battery) less than DC15V
E8	Press "stop" button on remote control
E9	Motor stop working relate to any optional accessories connecting to terminal "OP/CS"

SD
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SD

Solar Sliding Gate Opener
with self Debug Function

Suitable for residential yard gate,
villa gate , factory gate, iron gate,
stainless steel gate and woof gate

DC 24V Opener, the design of fashionable outline.
Easy Self learning feature.
Commercial & solar energy power source can be connected at the same time.
Digital gate limit positioning system.
Pedestrian open and full open adjustable, opening range can be adjusted.
Auto close function with adjustable closing time delay.
Backup battery is available, can work during power failure, battery status display.
Self Debug function built-in.