

Installation Guide

03-02
Version 03-08

SD Sliding Gate Opener

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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 \pm 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

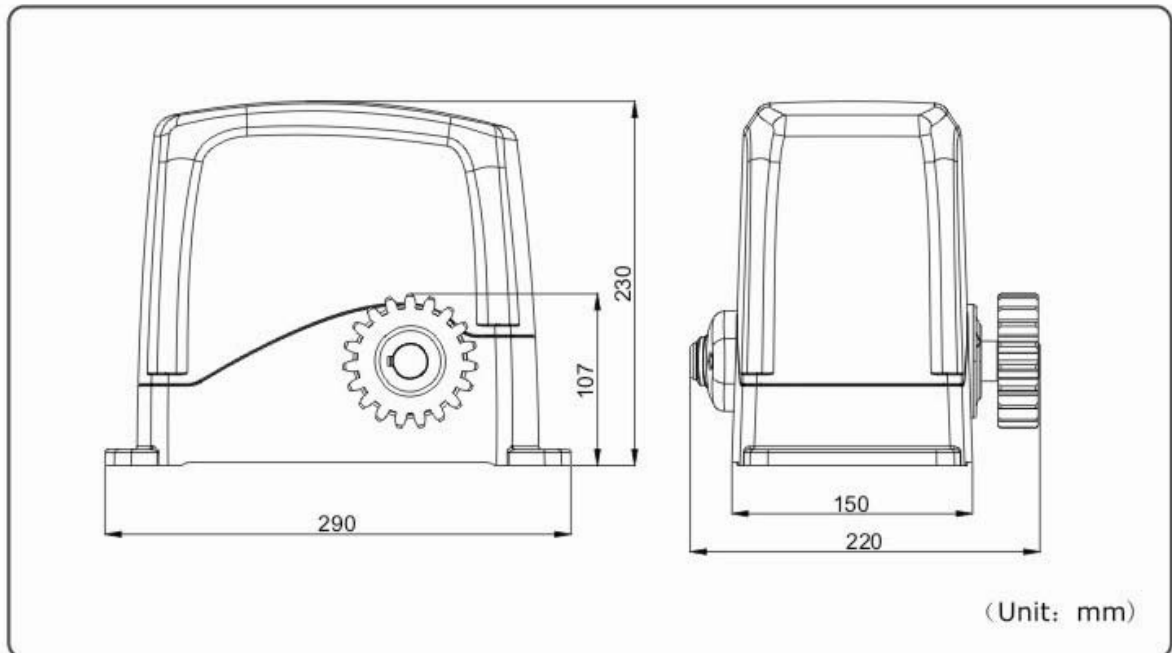
■ Mechanical

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	\geq 50m Frequency: 433.92 MHz
Remote control mode	Close/ Open/ Stop/ Pedestrian Open
Auto close time	0~99 sec (Adjustable)
Noise	\leq 65dB
Product actual size	29*22*23cm
Packing size	36*29*36cm
Environmental temperature	-15°C to +55°C

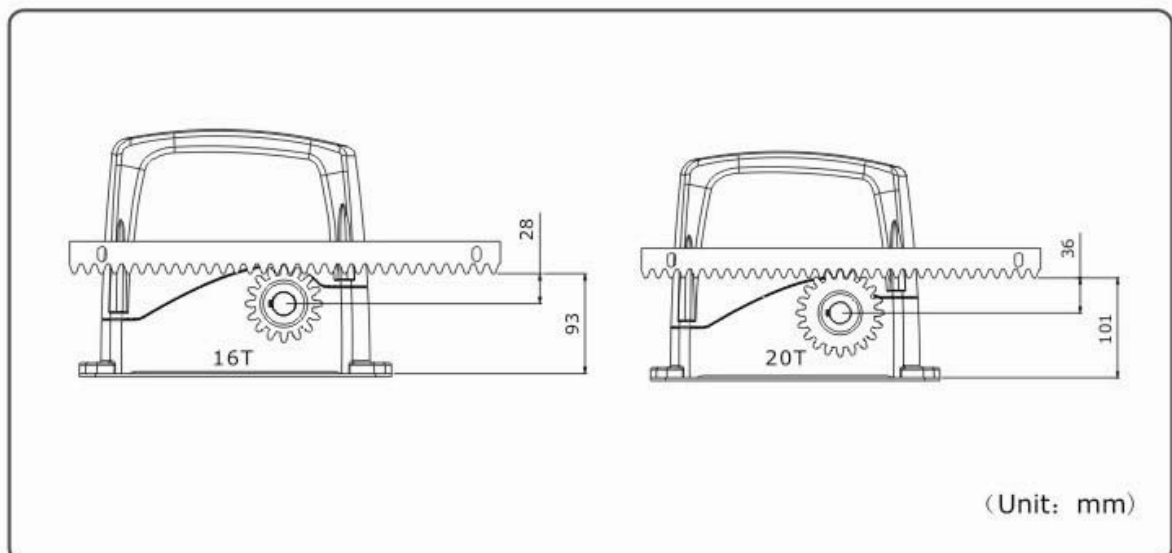


3. Installation

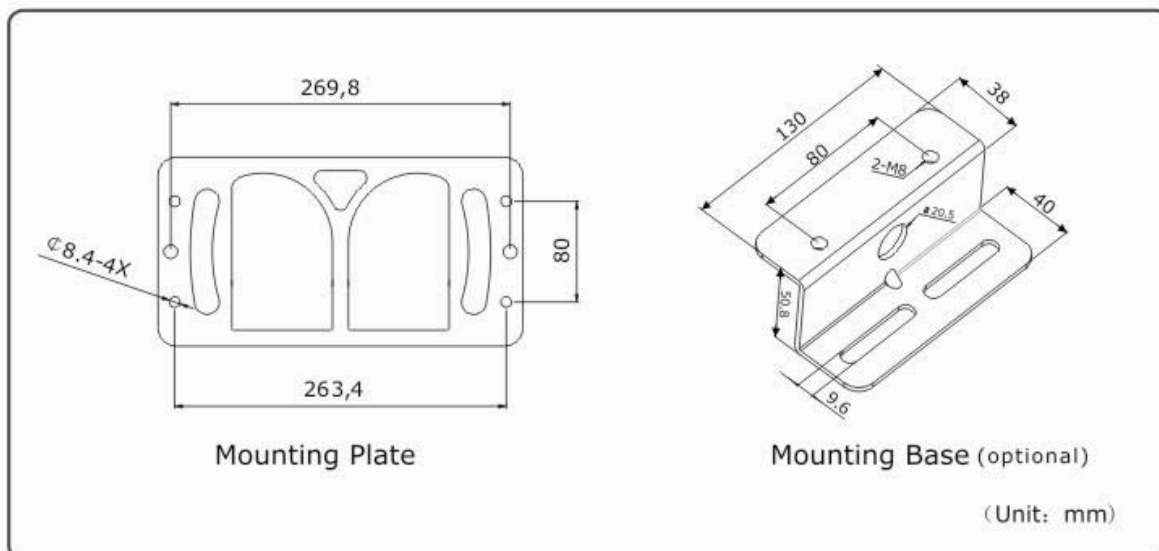
Motor Dimension



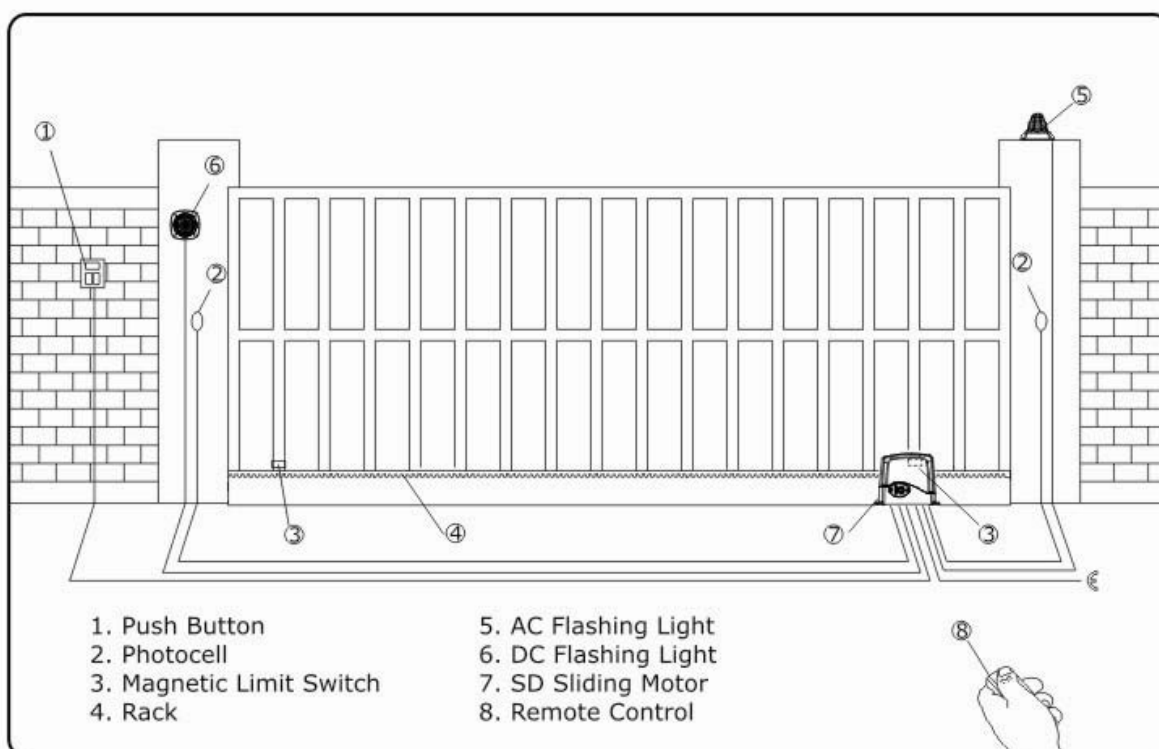
Gear & Rack Installation



Mounting Plate/ Base Dimension

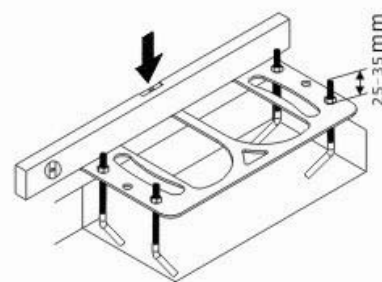


Installation Diagram

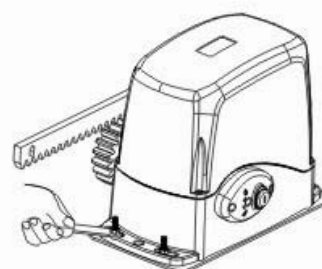


Motor & Rack Installation

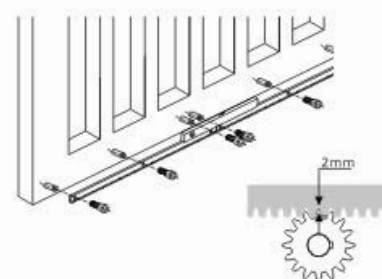
1. Reserve a place for the mounting plate
2. Arrange all necessary electric wire in advance
3. Fix the bolt onto the mounting plate, make the threaded portion 25-35mm higher than the plate, lock up the plate with nuts
4. Pour cements on the ground, put the mounting plate in place before the cements solidified. 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.



1. Installation of the mounting plate



2. Installation of the slider motor

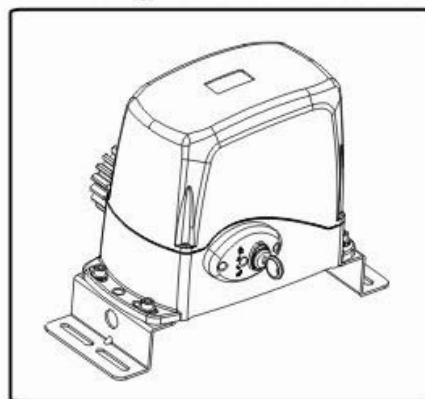


3. Installation of the rack

If use mounting base , please refer to the following steps

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 door side keeping 20 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.

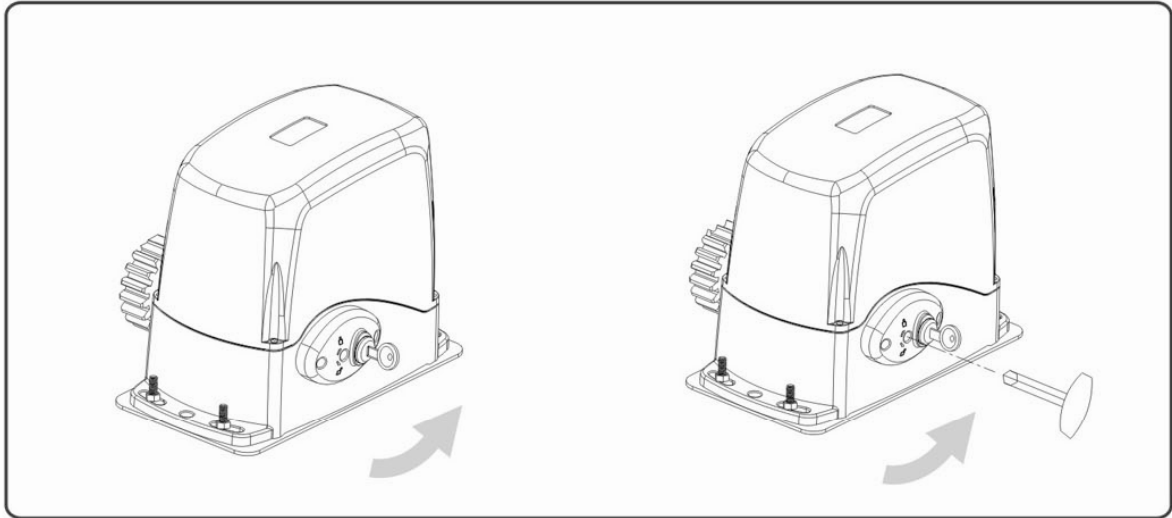
Mounting Base Installation



***Optional**



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 anti clockwise, The gear can now be rotated manually. Reverse steps to relock drive gear.

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

5. 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:

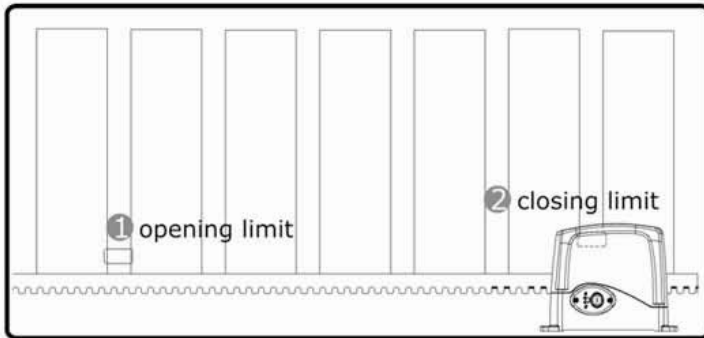
PCB before 2013 reverse the red+ and black – terminals on the motors Pc board.

PCB after 2013 ref to adjustment setting B3 (page 11).

Make sure power is switched off before doing this step.



6. Mounting the Sensor Magnets (Magnetic Limit Switch)



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.

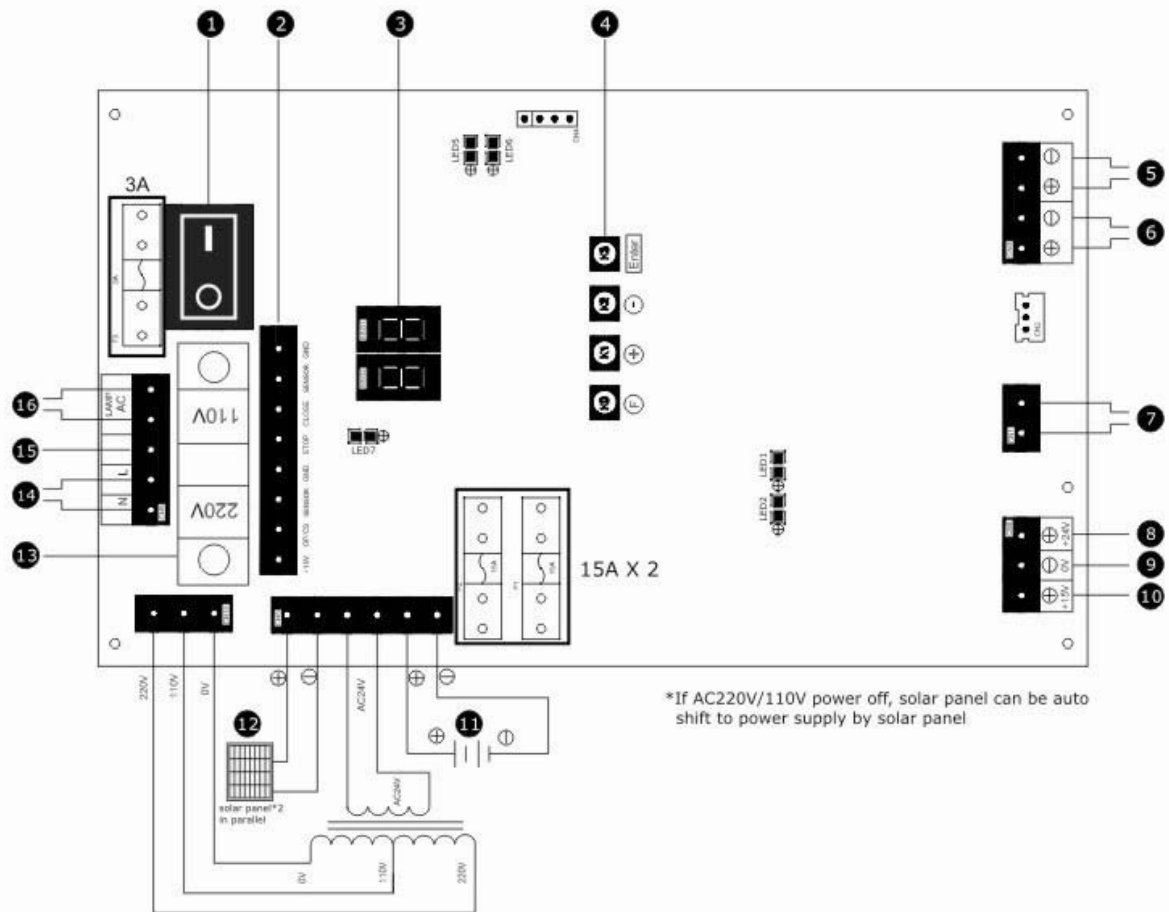
* Magnet heights may need to be adjusted slightly for sensor to read.

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.



Wiring



- 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

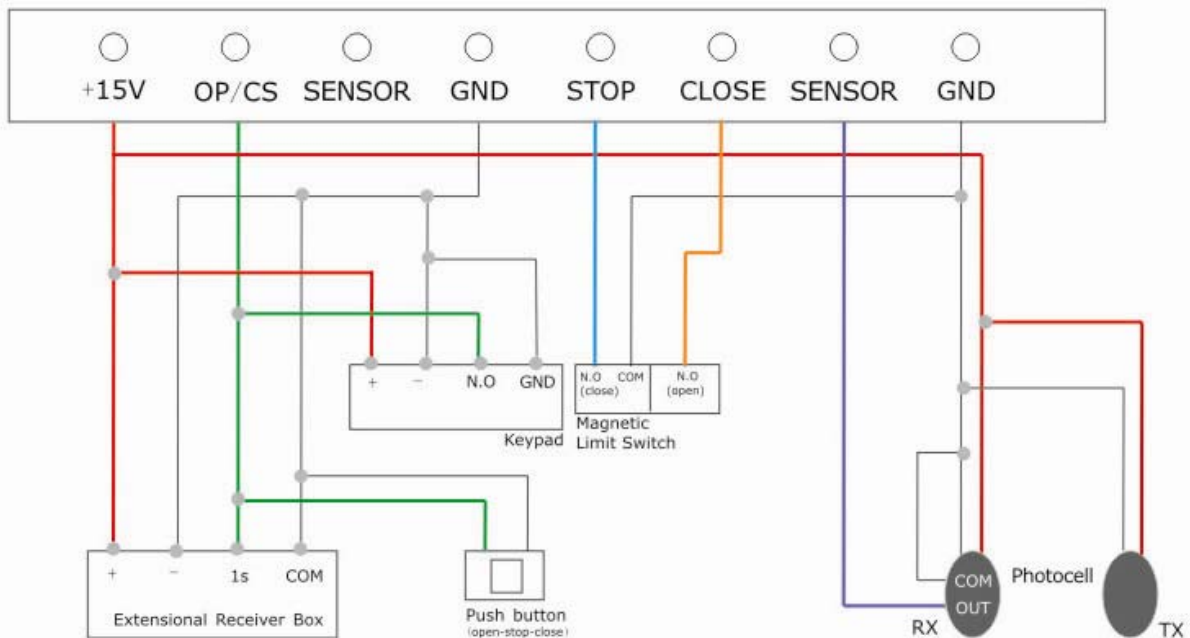
LED Diagram

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



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.



7. Remote Control Setting

Remote Control: Activation

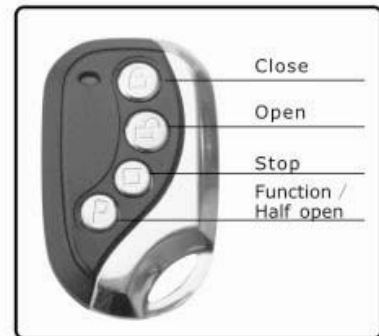
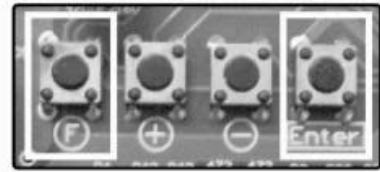
Press and hold down the "F" button for approximately 1 second until FF appears blinking on LED then release button: Pointing the remote at the PC board press any button on the remote. Remote should now be activated.

*50 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.



433MHZ Remote control



8. Total timer adjustment for opening & closing gate (Motor Setting)

Gate must be in the closed position before starting the total time for opening gate.

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

Holding down the "P" button & "Open" button together 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 sensor.

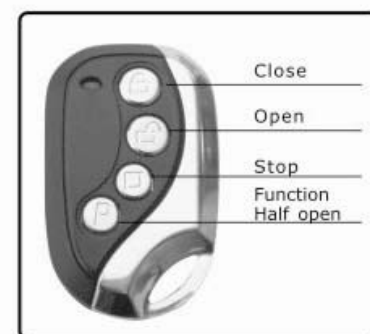
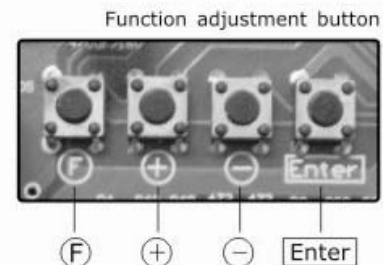
(Repeat steps if motor does not move)

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

Holding down the "P" button & "Closed" buttons together 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 Closed magnet reaches the motor 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.



Remote Control

* 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.



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

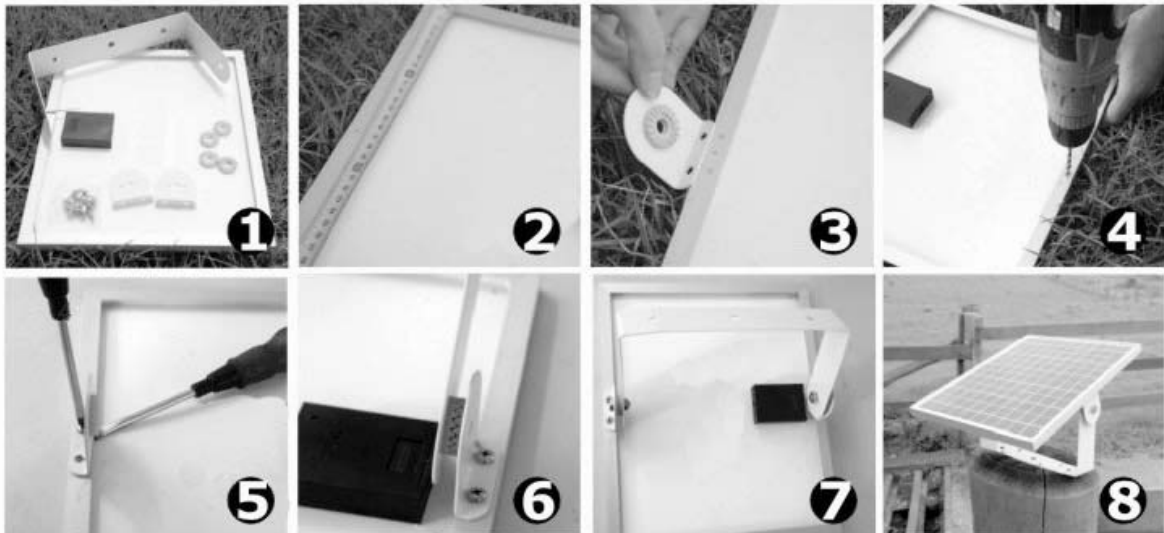
Item	Description	Setting Range	Default Setting	Remark
A0	Intermediate Stop Function with slow speed This refers to the sensitivity of gates when meeting obstacles during slow speed operation	0-99	20	Lower setting means the gates will be more sensitive to stopping
A1	Intermediate Stop Function with high 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



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.



* Recommend to use Ahouse solar panel when use solar system to ensure the motor could be normal operating.

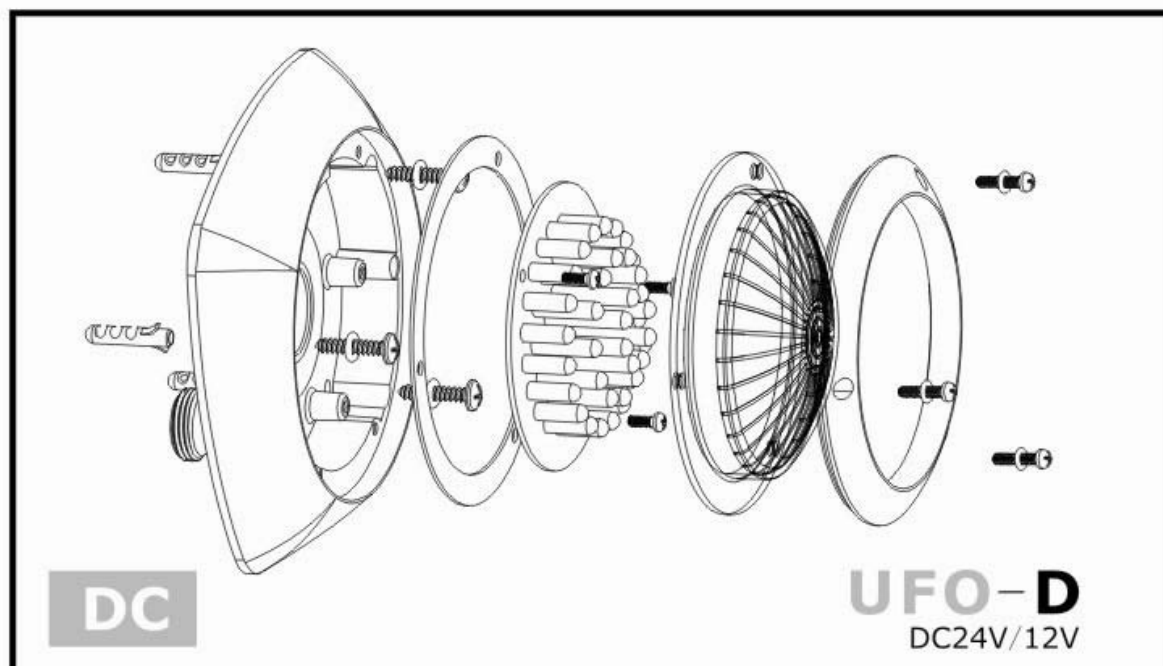
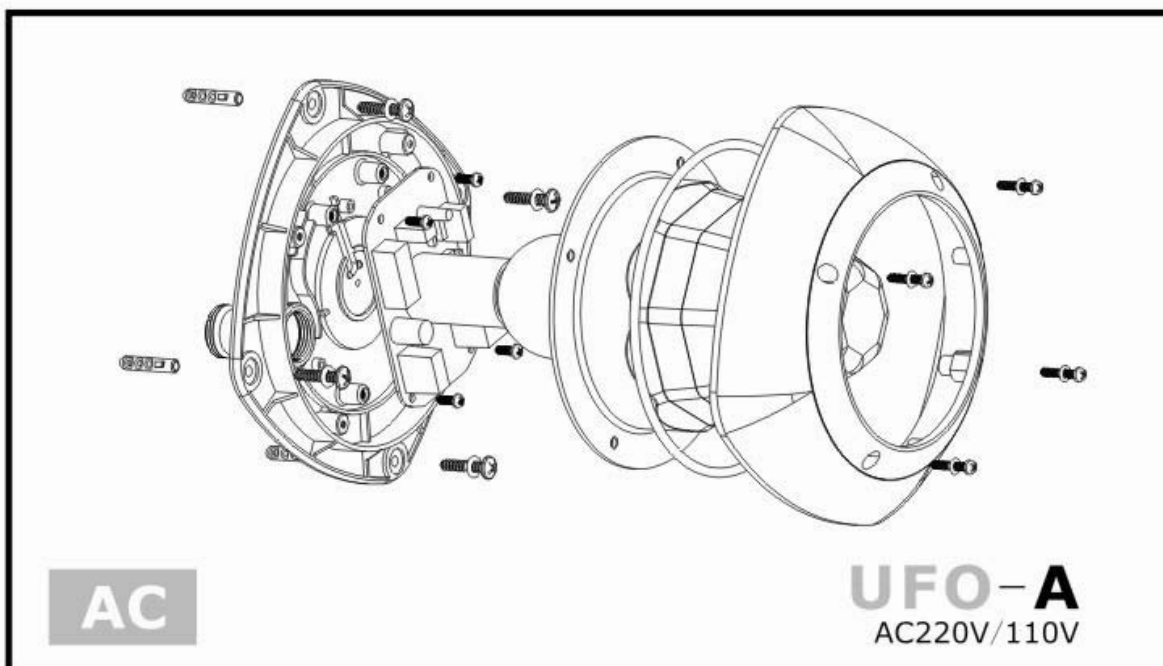
Battery Maintenance

Before use the backup 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.

* Recommend to use 2 pcs of 12V 9Ah Battery connection in series



Flashing light installation



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

PCB Debug and Error Code List

Item	Description
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"

PCB Version: 03-08



SD

Solar Sliding Gate Opener



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

DC24V motor, the design of integrated mechanic and electric structure streamline fashionable outline.
Easy Self-learning feature.

Commercial power & solar energy power source can be connected at the same time

Digital gate limits positioning system, Magnetic limit switch optional

Pedestrian open and full open adjustable, opening percentage can be adjusted.

Auto Close function with adjustable closing time delay

Backup battery is available, can work during power failure, battery status display.

Quality assurance, CE and IP57 approved product.

