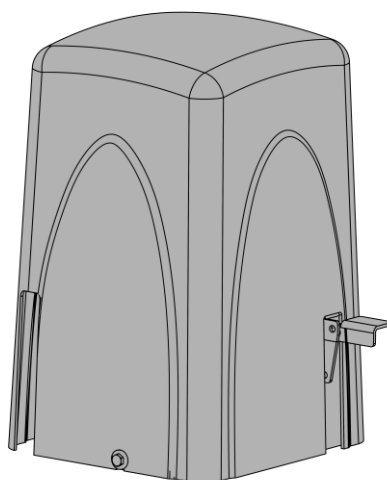


TOPENS[®]

DLC2000S

Installation Manual

For sliding gate installation



Installation Video



Equipped with 40W solar panels, this gate opener can operate independently without AC electricity. An additional 24V 17Ah lead acid type battery is required but not included. Alternatively, the opener can be powered directly by 110-120VAC electricity.

CONTACT US

For Technical Support and Installation Assistance

Visit our website at www.topens.com and fill out the online form

Alternatively, you can send an email to our service team at support@topens.com

To ensure prompt and effective assistance, kindly include the following information in your email:

- **Where Did You Purchase?** _____
- **Order Information** _____
- **Your Contact Information** _____
- **Gate Information (Weight and Length)** _____
- **Did You Purchase Any Accessories? (If Yes, Please List Them)** _____
- **Issue Description (Include Any Relevant Photo or Video)** _____

For Warranty Registration

To register your warranty, please visit www.topens.com

If you have any questions regarding what is covered by the TOPENS warranty, refer to the detailed policy at www.topens.com/pages/topens-limited-warranty.

Email Us: support@topens.com

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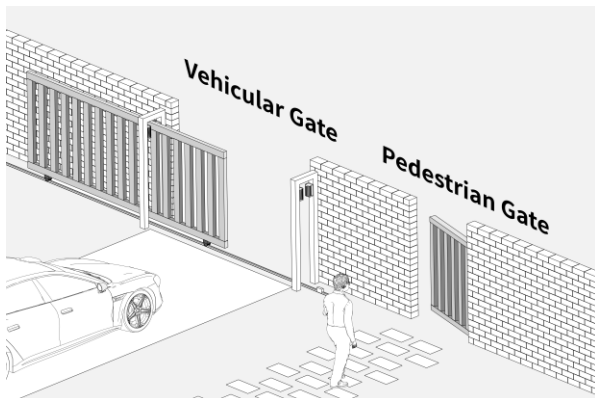
Important Safety Information

Thank you for choosing the TOPENS DLC2000S sliding gate opener. When installed correctly and used properly, your opener will offer years of reliable service.

This manual is designed to guide you through the proper installation of your DLC2000S sliding gate opener. Please carefully review all instructions before commencing the installation and operation of this automatic gate opener.

Before Installation

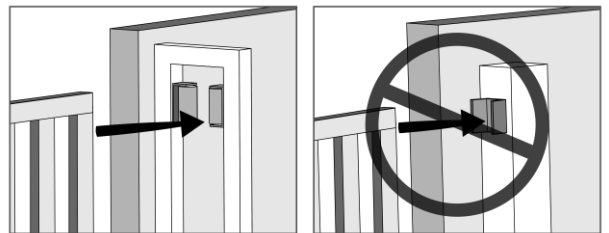
- ◆ **GAIN UNDERSTANDING OF THE INSTALLATION PROCESS:** Please read this installation manual before installing the gate opener.
- ◆ **LOCAL INSTALLATION COMPLIANCE:** Prior to installation, please verify that your planned installation complies with all relevant local building codes and ordinances. Dispose of packaging materials in accordance with local regulations.
- ◆ **SEPARATE PEDESTRIAN ACCESS:** The gate opener is intended for installation only on gates used for vehicles. Pedestrians should use a separate entrance to avoid contact with the moving vehicular gate.



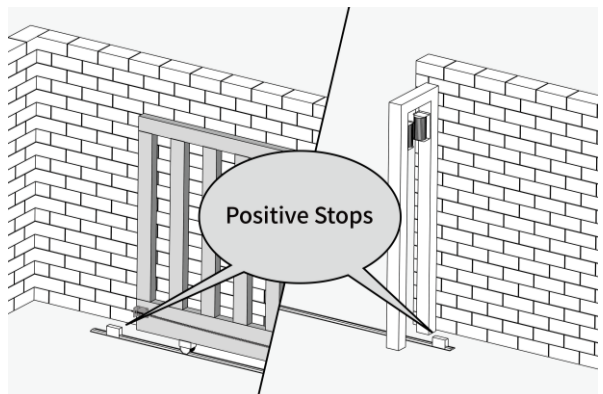
- ◆ **SLIDING GATE PREPARATION:** Ensure that the gate is plumb, level, and slides smoothly in both directions without binding or dragging on the ground. Wheels and guide rollers should rotate easily and be free of dirt or grime. Confirm that the gate track is straight, horizontal, and firmly affixed. Secure the fence posts in the

ground with concrete. Repair or replace all worn or damaged gate hardware prior to installation.

- ◆ **POST OR WALL PROTECTION:** Avoid using the post or wall as a stopping mechanism, either directly or indirectly. This precaution helps protect the post or wall from potential damage due to the impact of the sliding gate.



- ◆ **POSITIVE STOPS:** Positive stops must be installed at each end of the gate track to assure that the gate does not exceed its limit of travel and derail while opening or closing fully.



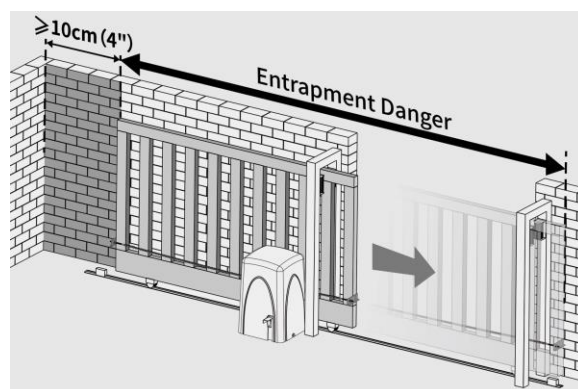
Important Safety Information

During Installation

- ◆ **INSTALLER AND END USER RESPONSIBILITY:** An experienced installer should perform the installation. Improper installation may result in property damage, severe injury or death. The gate opener is only part of the entire gate operating system, and it is the responsibility of the installer and end user to ensure that the total system is safe for its intended use.
- ◆ **DISCONNECT THE POWER SUPPLY:** Ensure that the gate opener is powered off before electrical wire connections or making any adjustments.
- ◆ **INSTALLATION POSITION:** Only install the gate opener on firm, level ground and on the inside of the property or fence line. Ensure there is sufficient clearance between the gate and adjacent structures when opening and closing to minimize the risk of entrapment. Avoid installing it on the outside of the gate where the public has access to it. Avoid installing it in areas prone to flooding or in locations exposed to flammable or explosive fumes.
- ◆ **INSTALL SAFETY SENSOR:** The gate opener is designed to stop or reverse the gate when the gate comes in contact with an obstruction. It is highly recommended to install the included TC102 infrared photocell sensor in the following situations for safety: if you have children or pets at your property, the gate opener auto close function is set to ON, the gate opener stall force is set to the maximum, a vehicle exit

sensor is installed, or other gate control devices are used.

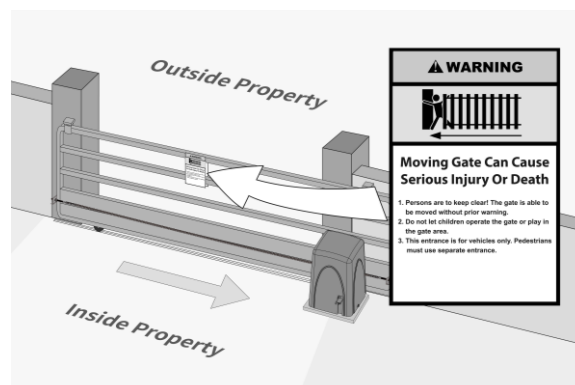
- ◆ **ENTRAPMENT ATTENTION:** Ensure when the gate is fully open, the end of the sliding gate keeps at least 10cm (4") away from any walls or objects. Exercise caution around moving parts and avoid approaching areas where fingers or hands could get caught. Always keep children, pets and livestock clear of the gate and its path of travel. Never cross the path of a moving gate.



- ◆ **GATE CONTROL ACCESSORIES PLACEMENT:** Gate control accessories intended for user activation must be located at least 1.5 meters (5') away from any moving part of the gate and where the user is prevented from reaching over, under, around or through the gate to operate the controls. Outdoor or easily accessible controls shall have a security feature to prevent unauthorized use.

After Installation

- ◆ **WARNING SIGNS:** Attach the provided warning signs to both sides of the gate in highly visible locations to alert the public about the automatic gate opener system. If your signs are damaged or missing, please reach out to TOPENS Customer Support for replacements.



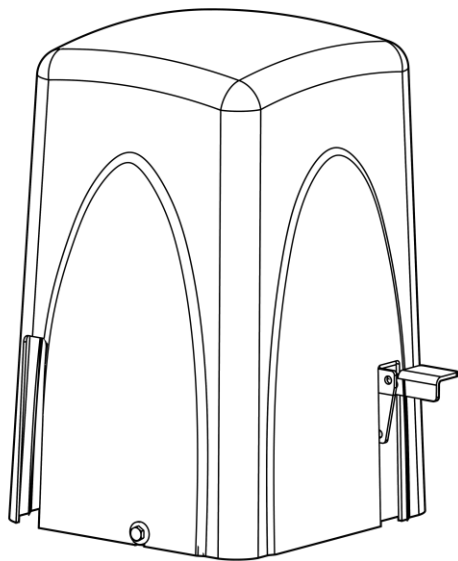
Important Safety Information

- ◆ **AWAY FROM MOVING GATES:** Keep children, pets and livestock away from the gate opener system as moving gates can be dangerous.
- ◆ **SECURE GATE CONTROL ACCESSORIES:** Prevent children from operating or playing with gate controls by keeping remote transmitters, keypads, and push buttons out of their reach. Store in a secure area when not in use.
- ◆ **MAINTENANCE OF GATE OPENER SYSTEM:** Keep the gate properly maintained and its track free of grime and debris. Periodically check that it slides smoothly under manual operation and tighten any loose hardware as needed. Turn off the power to the gate opener before performing any maintenance.
- ◆ **OBSTRUCTION PROTECTION TESTING:** Test the gate opener monthly. The gate must stop or reverse on contact with a rigid object or when an object activates the non-contact sensors. After adjusting the stall force or limit travel, retest the gate opener. Failure to adjust and retest the gate opener properly can increase the risk of injury or death.
- ◆ **POWER DISCONNECTION AND MANUAL OPENING:** Understand how to disconnect the power and manually open the gate. Disconnect the gate opener from the gate only when the gate is not in motion and the gate opener system is turned off.
- ◆ **RECOGNIZE POTENTIAL RISKS IN AUTOMATED GATE SYSTEMS:** Save the installation manual. Make sure everyone who is using or will be around the gate and gate opener are aware of the dangers of automated gate systems. If a replacement manual is needed, you can download a copy from the TOPENS website (www.topens.com)

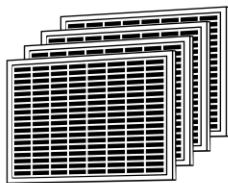
Note For Warranty

- ◆ **WARRANTY LIMITED TO TARGET MARKET:** The warranty is limited to the target market (Contiguous United States, Canada, UK, and Germany). Customers using the product outside these regions will be responsible for any additional expenses during the warranty replacement process.
- ◆ **GATE OPENER ABUSE:** TOPENS does not cover damage resulting from abuse, such as attempting to operate the gate opener beyond its specified capacity or using it for unintended purposes.
- ◆ **GATE OPENER MISUSE:** TOPENS does not cover damage resulting from misuse, including but not limited to operating the gate opener with incompatible power sources or using it in environments not recommended by TOPENS.
- ◆ **ALTERATIONS OR MODIFICATIONS:** Alterations or modifications made to the gate opener without prior consultation with TOPENS will also invalidate warranty coverage.
- ◆ **NON-COMPLIANCE WITH INSTRUCTIONS:** Failure to follow the installation instructions, including but not limited to improper installation, maintenance will void the warranty.
- ◆ **THIRD PARTY ACCESSORIES:** TOPENS does not cover damage caused by third party accessories, except those specifically recommended by TOPENS Customer Support. It is important to use only compatible accessories to ensure compatibility and prevent damage to the gate opener.
- ◆ **CONTACT TOPENS SUPPORT:** Please ensure that the gate opener is installed, operated, and maintained in accordance with the guidelines outlined in the installation manual to avoid voiding the warranty. If you have any questions regarding proper usage or need assistance with compatible accessories, please contact TOPENS Customer Support for guidance.
- ◆ **DETAILED WARRANTY POLICY:** If you have any questions regarding what is covered by the TOPENS warranty, refer to the policy at www.topens.com/pages/topens-limited-warranty.

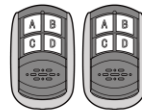
Packing List



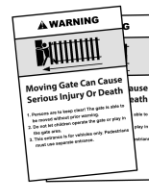
Gate Opener



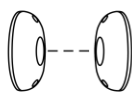
4 x 10W 24V Solar Panel



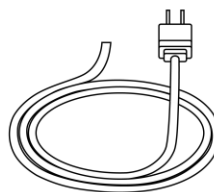
TC131 Remote Control



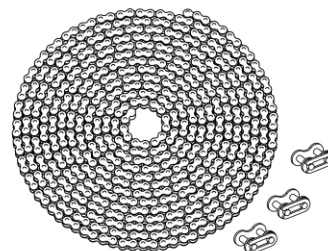
Warning Sign



TC102 Infrared Photocell Sensor



Power Cord



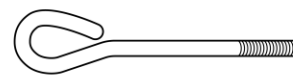
#41 Roller Chain 6m (20 feet) & Master Link



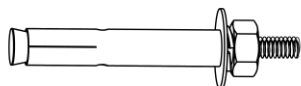
Solar Panel Connection Cables



Battery Connection Cable



Anchor Bolt (4)



Expansion Bolt (4)



"L" Bracket (2)



Chain Bolt (2)



Φ10 Lock Washer (8)

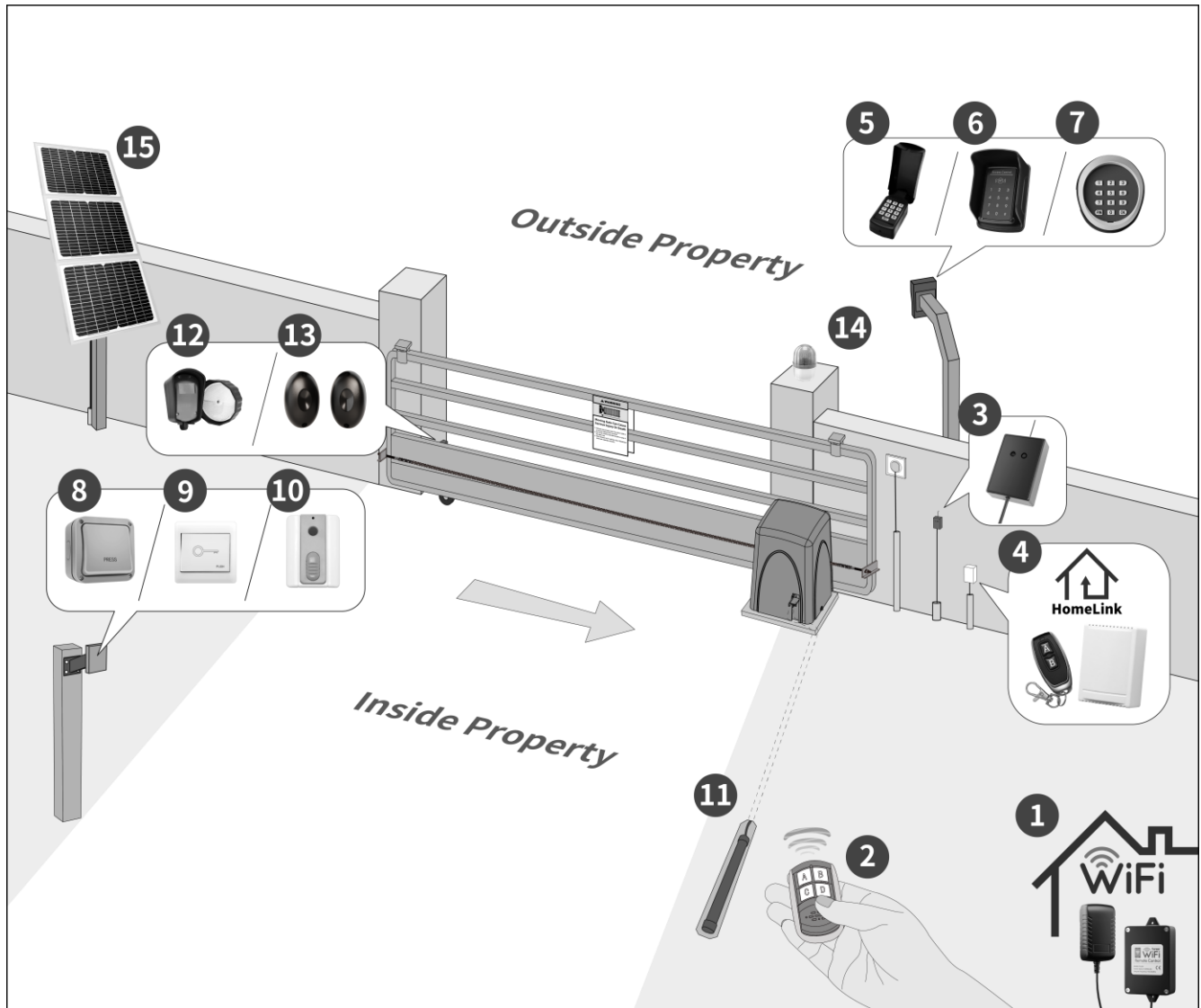


Φ10 Plain Washer (8)



M10 Hex Nut (8)

Installation Overview



Various TOPENS Accessories for Your Gate Opener System

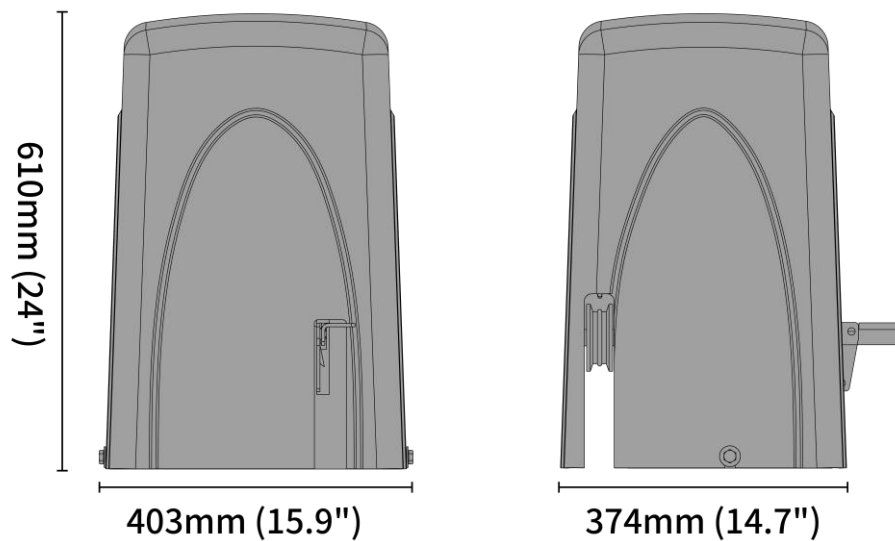
1 TC196 WiFi Remote Control	9 TC147 Wall Push Button
2 TC131 Remote Control	10 TC173 Wireless Push Button
3 ERM12 External Receiver	11 TEW3 Vehicle Sensor Exit Wand
4 HLR01 Homelink Remote Control Kit	12 TRF3 Reflection Photocell Sensor
5 TC188 Universal Keypad	13 TC102 Infrared Photocell Sensor
6 TC175P Wired Keypad	14 JD24VY Warning Light
7 TKP3 Wireless Keypad	15 TSP30W 30W Solar Panel Charging Kit
8 TC148 Waterproof Wall Push Button	

* Available on the TOPENS website (www.topens.com) and Amazon.

Specifications

Product Model	DLC2000S
Power Input	110-120VAC/60Hz
Motor Voltage	24VDC
Motor Power	400W (1/2 HP)
Gate Moving Speed	20 cm/s (8 in/s)
Max Gate Weight	2000kg (4400lbs)
Max Gate Length	13.7m (45ft.)
Working Temperature	-20°C ~ +50°C (-4°F to 122°F)
Protection Class	IP44 Waterproof
Sound Level	< 50 dB

Overall Dimensions



Before You Begin

Check the Gate

- ◆ Ensure that the gate is plumb, level, and slides smoothly in both directions without binding or dragging on the ground.
- ◆ Confirm that the gate track is straight, horizontal, and firmly affixed, with positive stops installed at each end.
- ◆ Make sure the gate wheels and guide rollers rotate freely and are clean of dirt or grime.
- ◆ Ensure that the fence posts are securely set in concrete.
- ◆ Repair or replace all worn or damaged gate hardware before installation.

Tools Needed

- ◆ Power Drill
- ◆ Tape Measure
- ◆ Hammer
- ◆ Wire Strippers
- ◆ Phillips Screwdriver
- ◆ Portable Electric Welder
- ◆ Level
- ◆ Open End Wrenches - 14# & 17# or Adjustable Wrenches
- ◆ Hex Key Wrench
- ◆ Slotted Screwdriver

Battery Required

- ◆ When using batteries and solar panels as the main power source, 24V 17Ah batteries are required (NOT included). Lead acid / GEL / AGM / flooded (deep cycle battery) batteries are supported, EXCEPT for lithium-ion battery. The batteries should be waterproof, or they should be placed in waterproof housing.

Items Not Included but May Needed

- ◆ **PVC Conduit:** Required to protect the cable connecting TC102 infrared photocell sensor to the control board.
- ◆ **Connection Cable:** Connection cable may be required for installing wired accessories and connecting the master gate opener and slave gate opener in a dual gate opener system. Refer to the Connect the Accessories and Dual Gate Opener System Setup sections in this manual to purchase the correct cable.
- ◆ **Weatherproof Cover:** Use a weatherproof cover to protect the electrical outlet if it is located outdoors.
- ◆ **Surge Protector:** A surge protector with a rated current of at least 8A is recommended to use with the power cord.

Install Photocell Sensor

- ◆ It is highly recommended to install the included TC102 infrared photocell sensor in the following situations for safety: if you have children or pets at your property, the gate opener auto close function is set to ON, the gate opener stall force is set to the maximum, a vehicle exit sensor is installed, or other gate control devices are used.

Installation

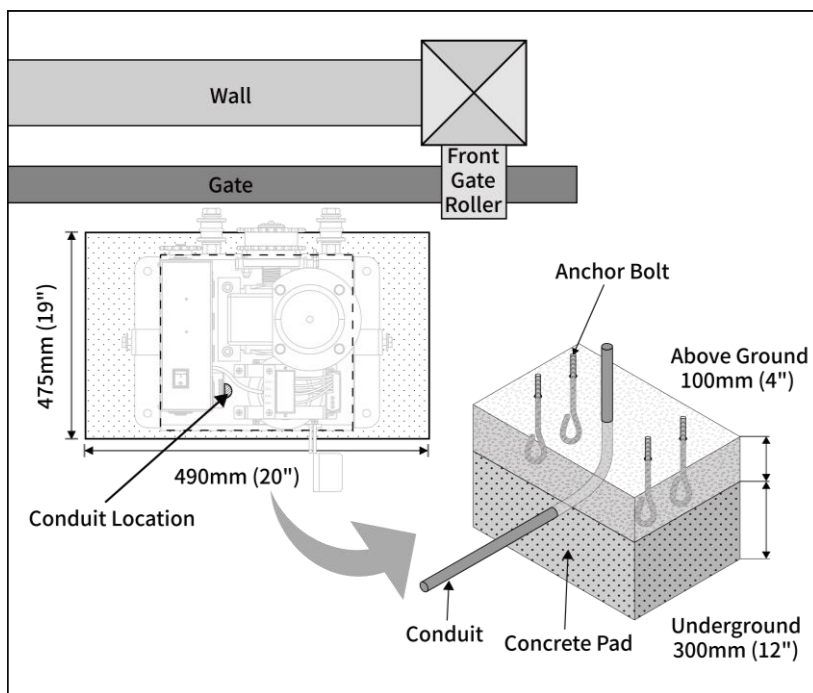
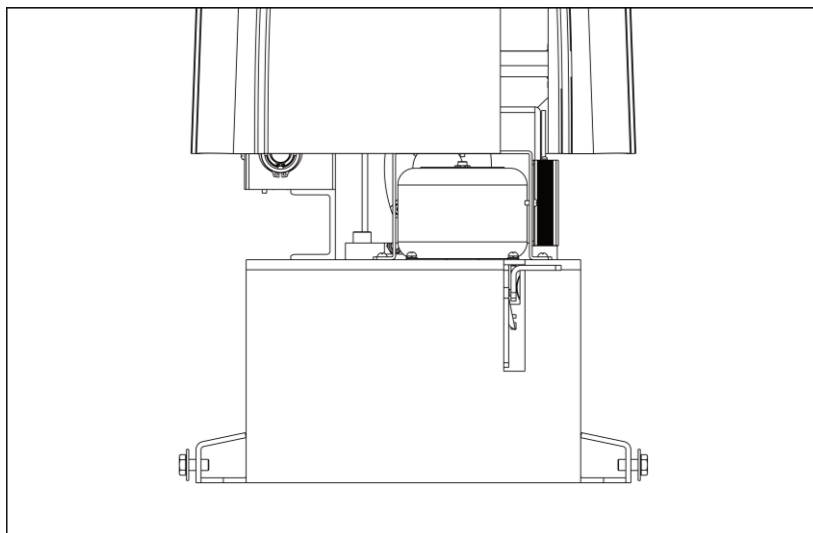
CAUTION

- ◆ *The gate opener is heavy, you may need an extra person to assist with installation.*
- ◆ *Ensure that the opener is installed in a level and parallel position and is securely fastened.*
- ◆ *Improper installation may result in property damage, severe injury, and / or death.*

STEP 1

Lay out the Concrete Pad

- ◆ Unscrew the two cover screws located on each side of the motor casing to remove the casing.
- ◆ Dig a hole for a concrete pad near the front roller of the gate.
- ◆ The dimensions of the concrete pad should be at least 490 x 475 x 400mm (20" x 19" x 16").
- ◆ Install the electrical conduit.
- ◆ Pour the concrete pad.
- ◆ You can choose either anchor bolts or expansion bolts to secure the gate opener.
- ◆ **USE ANCHOR BOLTS TO SECURE:** Insert the four anchor bolts into the concrete before it sets. Make sure they align perfectly with the mounting holes on the opener base.
- ◆ **USE EXPANSION BOLTS TO SECURE:** After pouring the concrete pad, allow it to set before proceeding to STEP 2.
- ◆ Ensure that the pad surface is perfectly level and parallel to the driveway.
- ◆ Increase the pad height if necessary to protect the system from flooding, heavy snow, etc.

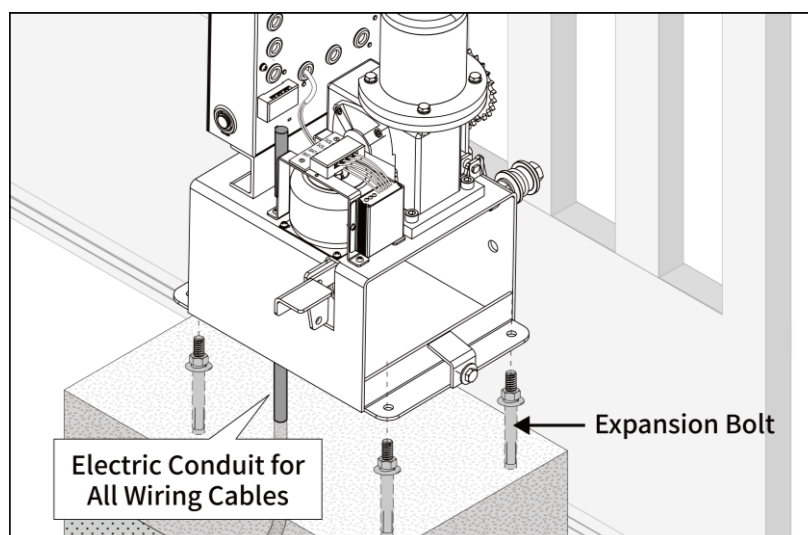
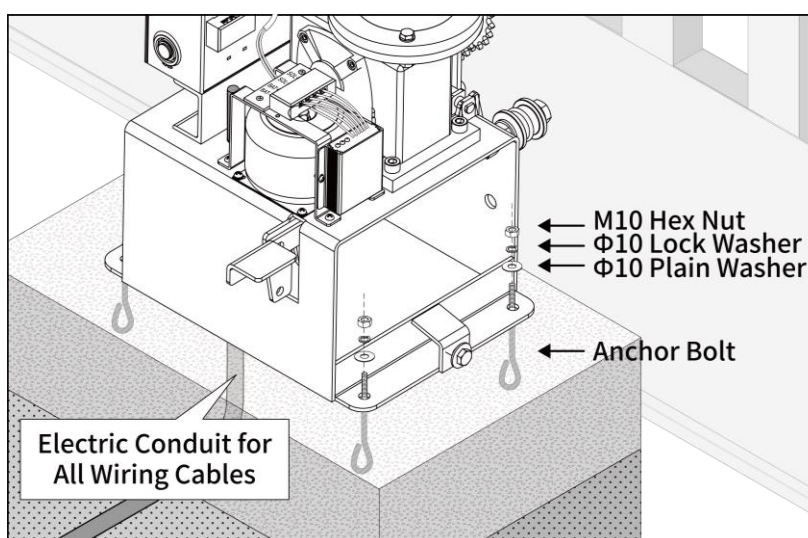
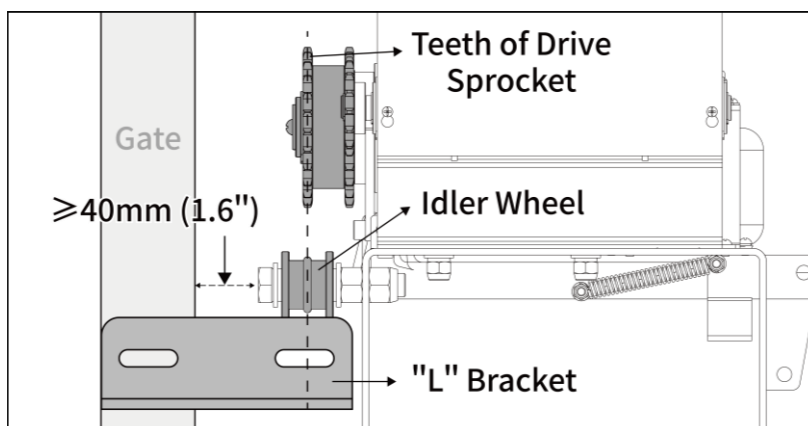


Installation

STEP 2

Determine the Position of the Opener and Install the Opener

- ◆ Position the opener on the concrete pad.
- ◆ Attach the "L" bracket to the left side of the gate. Adjust the opener's position until the teeth of the drive sprocket are vertically aligned with the hole in the "L" bracket.
- ◆ Push the gate to the right and attach the "L" bracket to the right side of the gate. Adjust the opener's position until the teeth of the drive sprocket are vertically aligned with the hole in the "L" bracket.
- ◆ Ensure that there is at least 40mm (1.6") of clearance between the idler wheels of the opener and the gate.
- ◆ **USE ANCHOR BOLTS TO SECURE:** Attach the opener to the concrete pad, ensuring that it is perfectly parallel to the gate. Secure it to the anchor bolts with M10 Hex Nuts, Φ 10 Lock Washers, and Φ 10 Plain Washers.
- ◆ **USE EXPANSION BOLTS TO SECURE:** Mark the locations for the four expansion bolts based on the mounting holes on the base plate. Drill the holes with a 14mm (0.55") masonry bit. Firmly secure the base plate to the concrete pad with the expansion bolts.

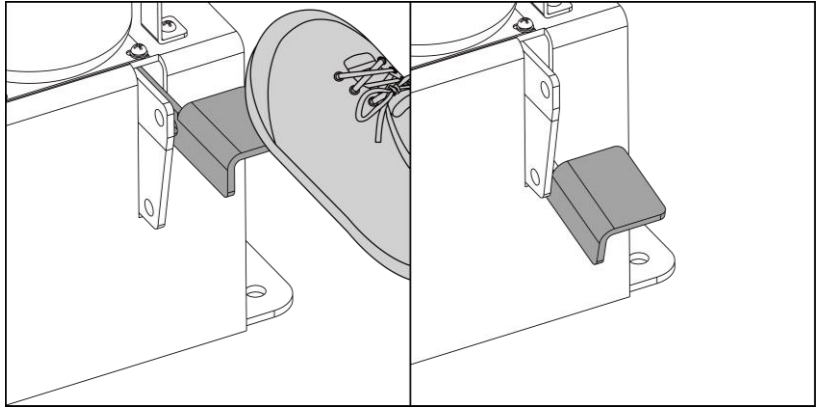


Installation

STEP 3

Disengage the Clutch

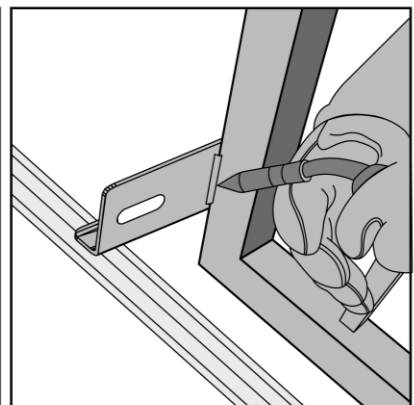
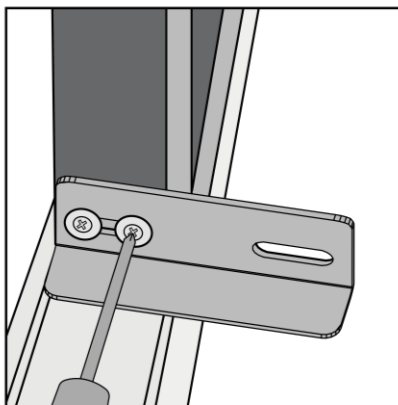
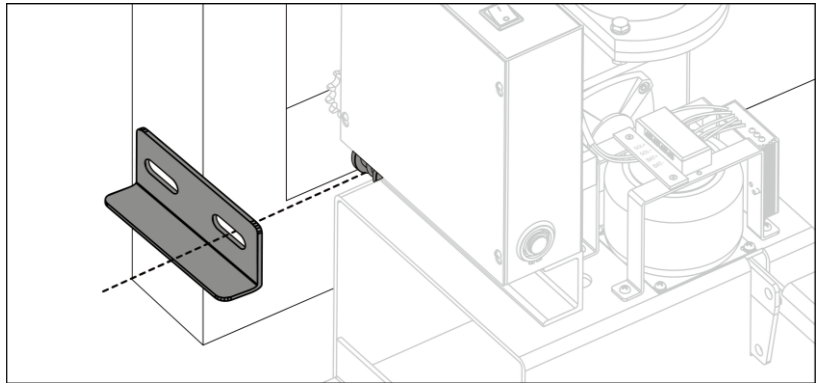
- ◆ Press down firmly on the foot pedal with your foot to disengage the clutch between the gear shaft and the motor. Keep the pedal fully secured in the bottom position.
- ◆ The gate opener is now in manual mode, allowing you to open the gate by hand freely.



STEP 4

Secure the Chain Brackets

- ◆ Ensure that the bottom of the idler wheel is aligned with the hole in each side of the "L" brackets.
- ◆ Secure the "L" bracket at or near each end of the inside gate (opener side) with screws (NOT included) or weld the brackets on the gate.

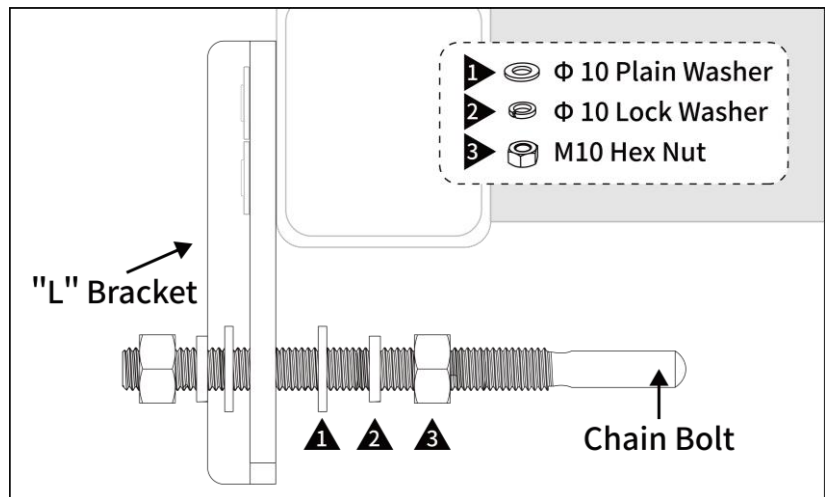


Installation

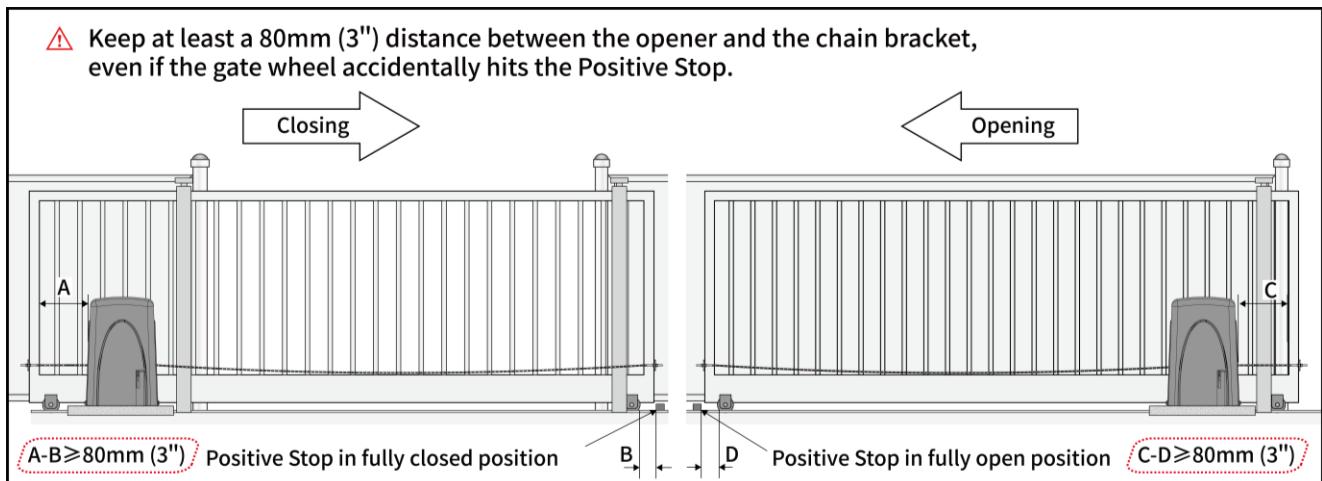
STEP 5

Attach the Chain Bolt to the Chain Bracket

- ◆ Attach the chain bolt to each side of the "L" bracket with $\Phi 10$ Plain Washers, $\Phi 10$ Lock Washers, and M10 Hex Nuts.



CAUTION: Once the positions of the opener and chain brackets are determined, double-check the safety distance between them to ensure that they do not collide, even if the gate wheel accidentally hits the positive stop. Reinstall the positive stop if necessary.

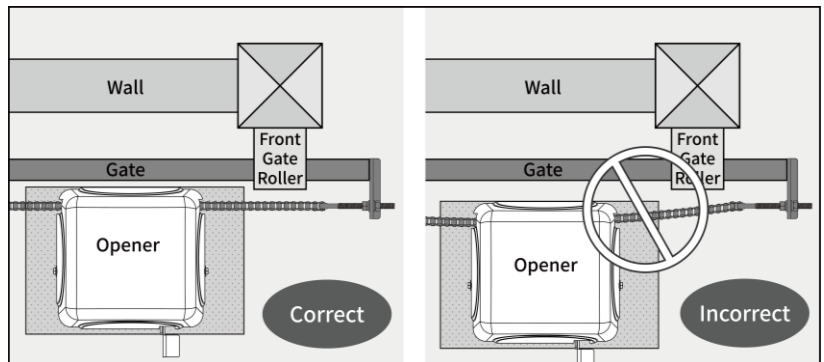
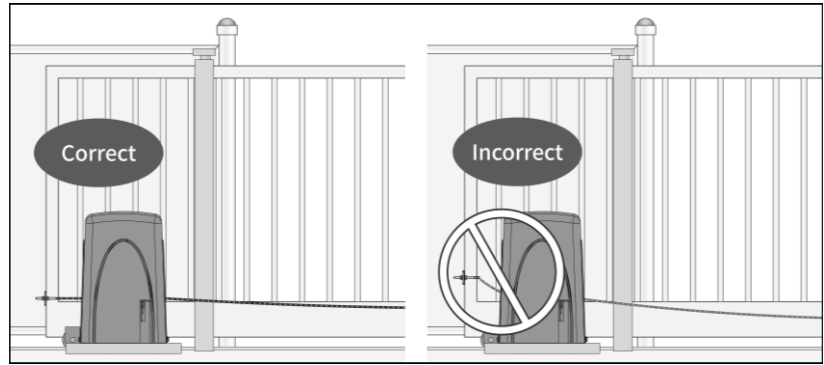


Installation

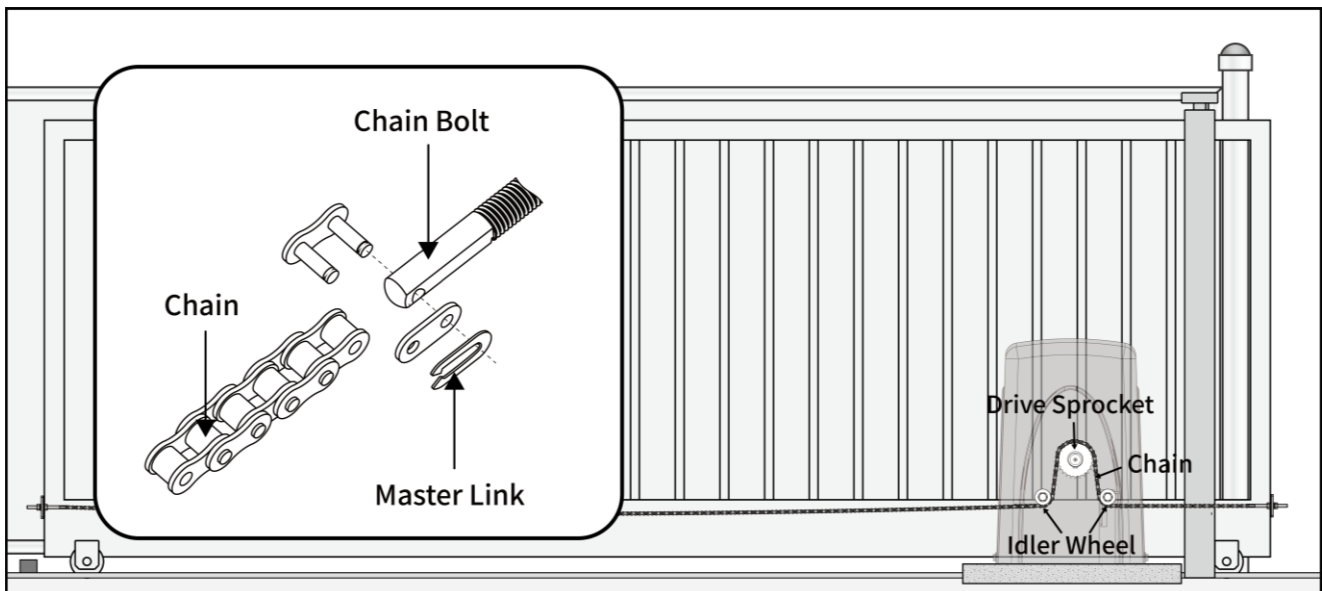
STEP 6

Fit the Chain

- ◆ Connect one end of the chain to one side of chain bolt with the master link.
- ◆ Route the chain through the opener.
- ◆ Cut any excess chain and connect the end to the other side of the chain bolt with the master link.
- ◆ Set the appropriate chain tension by adjusting the chain bolts at both ends. The chain should be neither too tight nor too slack.
- ◆ Manually open and close the gate to ensure that it moves smoothly with the chain installed.



NOTE: Applying anti-rust oil to the chain will help prevent rust.



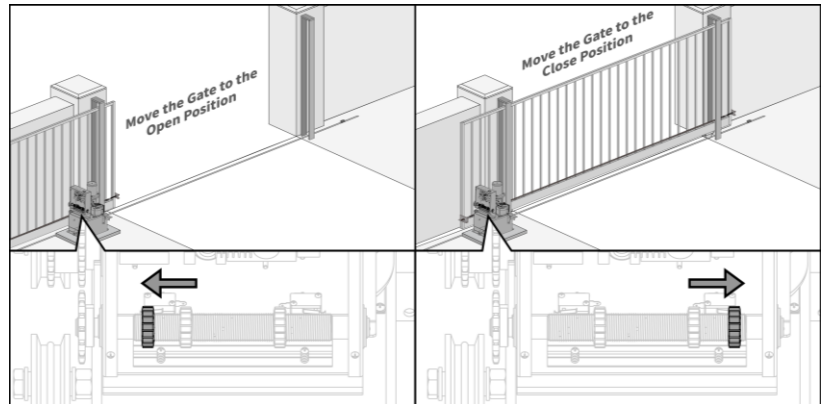
Installation

STEP 7

Roughly Adjust the Open & Close Limit Positions

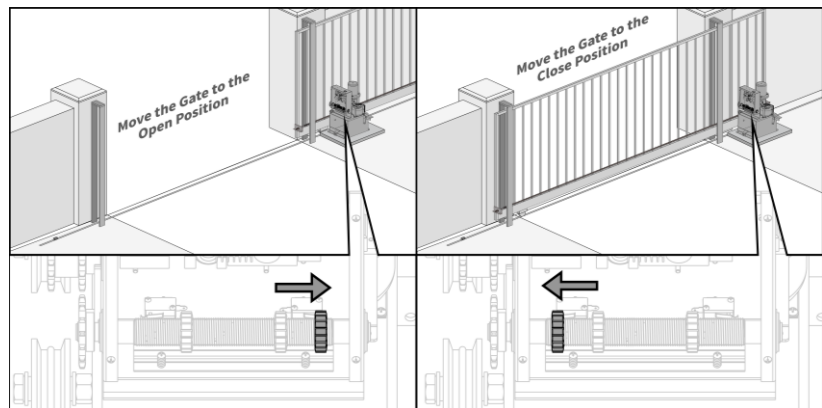
◆ FOR LEFT OPEN GATE:

Manually open the gate to the desired open position. Depress the spring loaded bracket with a screwdriver and turn the left adjustment nut until you hear a “click” sound. Manually close the gate to the desired close position. Depress the spring loaded bracket and turn the right adjustment nut until you hear a “click” sound. Leave some space at both ends of the gate between the gate opener and the chain bolt for buffering.



◆ FOR RIGHT OPEN GATE:

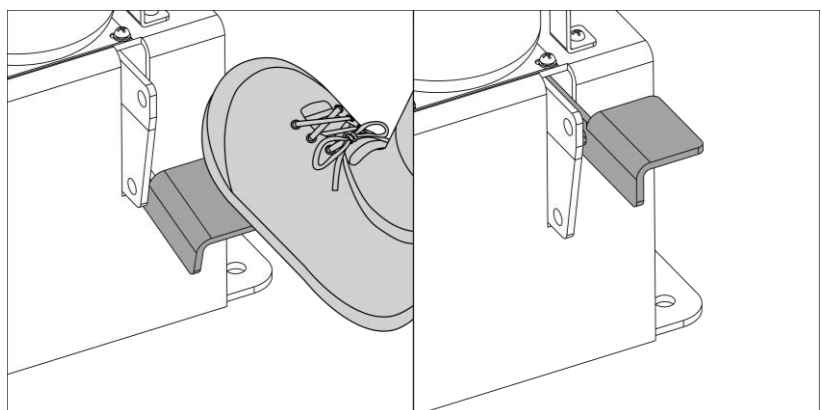
Manually open the gate to the desired open position. Depress the spring loaded bracket with a screwdriver and turn the right adjustment nut until you hear a “click” sound. Manually close the gate to the desired close position. Depress the spring loaded bracket and spin the left adjustment nut until you hear a “click” sound. Leave some space at both ends of the gate between the gate opener and the chain bolt for buffering.



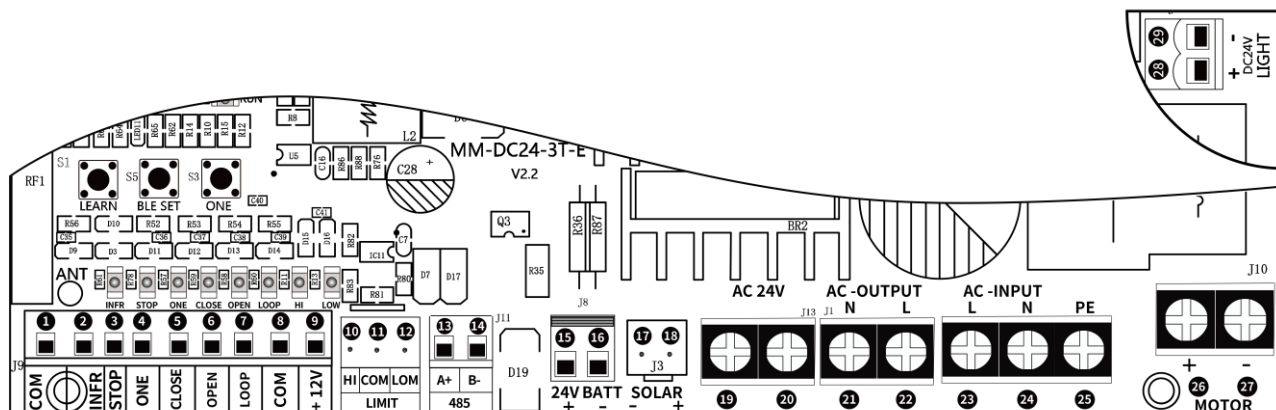
STEP 8

Engage the Clutch

- ◆ Lightly kick the pedal to the right and allow it to spring upward.
- ◆ Ensure that the pedal returns to its original position.

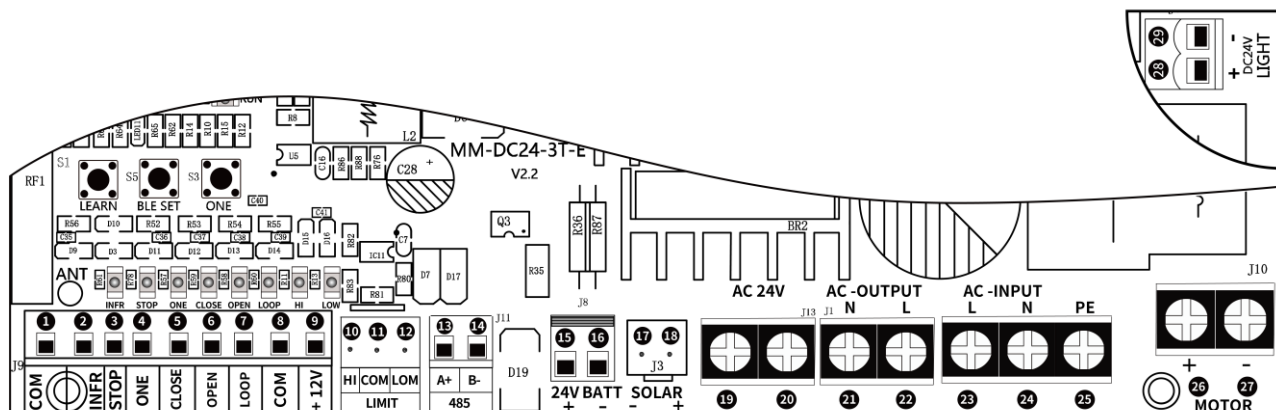


Control Board Terminal Functions



Terminal	Function
② "INFR" ① "COM"	Receive signal input from a photocell sensor, operating on a normally closed (NC) input basis, connected to "NC" and "COM" terminals of the sensor respectively. Note: The terminals have been shorted with a wire jumper at the factory.
③ "STOP" ① "COM"	Control gate operation through a normally open dry contact signal input, typically connected to a push button to stop the gate.
④ "ONE" ① "COM"	Control gate operation through a normally open dry contact signal input, commonly connected to push button, wired keypad, and Homelink remote control kit for cyclic gate operation (open/stop/close/stop).
④ "ONE" ⑧ "COM"	Control gate operation through a normally open dry contact signal input, connected to external receiver for cyclic gate operation (open/stop/close/stop).
⑤ "CLOSE" ① "COM"	Control gate operation through a normally open dry contact signal input, typically connected to a push button to close the gate.
⑥ "OPEN" ① "COM"	Control gate operation through a normally open dry contact signal input, typically connected to a push button to open the gate.
⑦ "LOOP" ⑧ "COM"	Accept the signal input of the gate opening, usually connected to the normally open output of a vehicle sensor.
⑨ "+12V" ⑧ "COM"	Provide 12VDC voltage output to power the accessories, with a maximum current of 100mA.
LIMIT ⑩ "HI" ⑪ "COM" ⑫ "LOW"	Input terminals for a normally closed limit switch, connected to the yellow, green and blue wires of the limit switch, respectively.
485 ⑬ "A+" ⑭ "B-"	Communication terminals between the master and slave gate opener, connected to the corresponding terminals on the control board of the slave gate opener directly.

Control Board Terminal Functions



Terminal Function

⑮⑯ “+24V BATT-”	Input terminals for 24VDC power, typically connected to the positive and negative terminals of a 24VDC battery or 24VDC power supply, providing power to the entire system or other 24VDC accessories.
⑰⑱ “-SOLAR+”	Do not connect the terminals to any solar panels. These terminals are reserved for factory testing only.
⑲⑳ “AC 24V”	Output terminals for the transformer, connected to the black wires of the transformer, regardless of the polarity.
㉑ “AC-OUTPUT N” ㉒ “AC-OUTPUT L”	Input terminals for the transformer, connected to the red wires of the transformer, regardless of the polarity.
㉓ “AC-INPUT L” ㉔ “AC-INPUT N” ㉕ “AC-INPUT PE”	AC input terminals for the control board and the terminals are pre-connected at the factory.
㉖㉗ “+MOTOR-”	Output terminals for motor control, connected to the red and black wires of the motor respectively.
㉘㉙ “LIGHT DC+24V -”	Output terminals for a warning light, connected to the red and black wires of the warning light respectively. Ensure that the warning light has a rated voltage of 24VDC and a rated current of less than 1A.

NOTE: For terminal wiring, remove the terminal from the control board and unscrew the terminal screws using a screwdriver. Insert the wire into the terminal, tighten the screws to secure the wire, and then reattach the terminal to the control board.

Connect the Power Supply

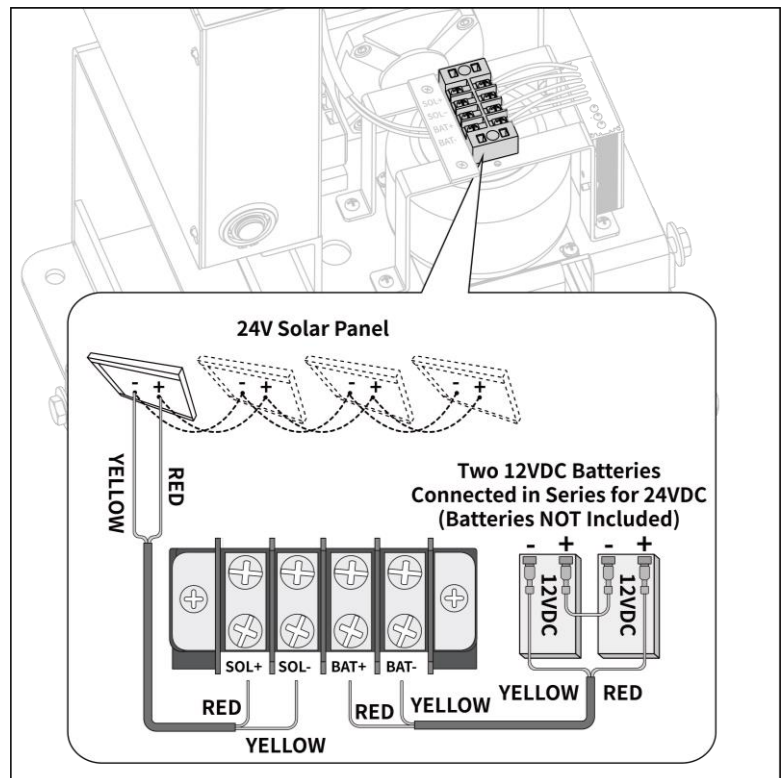
WARNING

- ◆ *A professional electrician is required for wire connection to avoid the risk of injury, electric shock, or death. NEVER connect the gate opener to an electrical outlet before all the installations have been done.*
- ◆ *It is recommended to use a surge protector with a rated current of at least 8A with the power cord. Protect the electrical outlet with a weatherproof cover if it is located outdoors.*

Power Mode 1

By Solar Panels and Batteries

- ◆ Connect two 12VDC batteries in series to achieve 24VDC (batteries not included).
- ◆ Connect the batteries to the “BAT+” and “BAT-” terminals.
- ◆ Assemble the solar panels, connect them in parallel, and mount them in an area clear of obstructions and shading from buildings and trees. The solar panel should face south if it is located north of the equator. If it is located south of the equator, it should face north.
- ◆ Connect the solar panels to the “SOL+” and “SOL-” terminals.



NOTES ABOUT THE BATTERY AND SOLAR PANEL

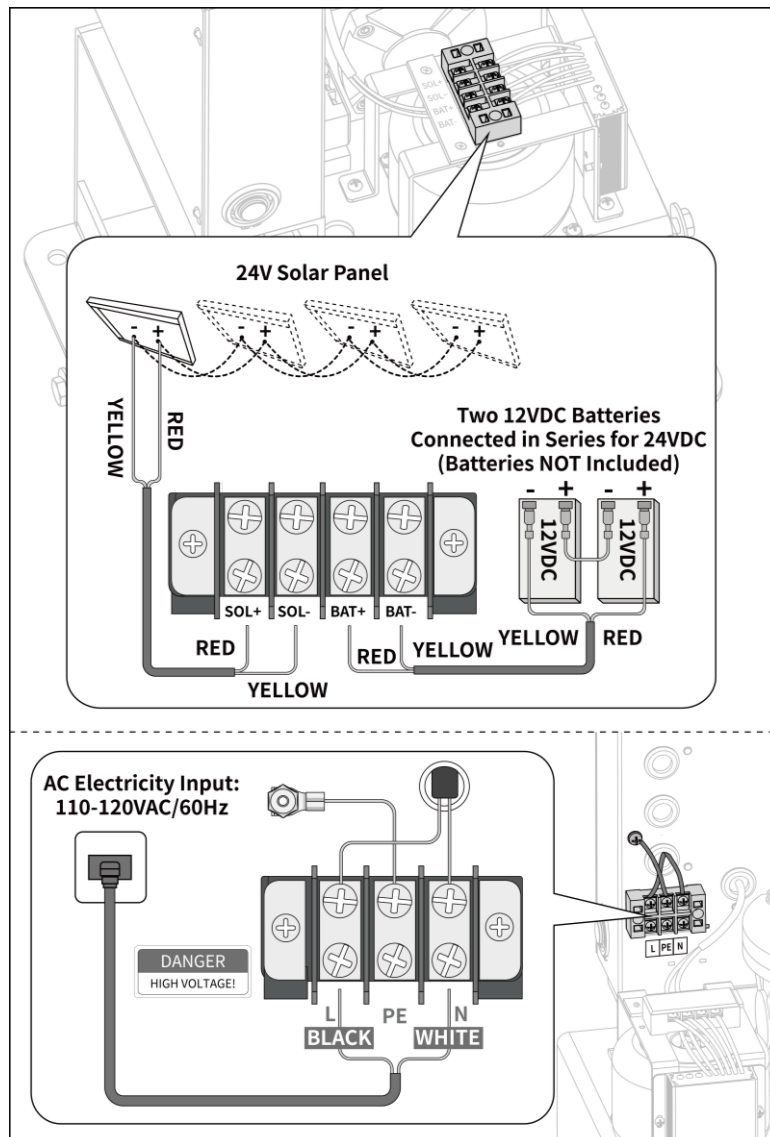
- ◆ *The batteries should be waterproof, or they should be placed in waterproof housing.*
- ◆ *The built-in solar charge controller supports a maximum solar panel power of 240W; exceeding this limit can cause damage to it.*
- ◆ *If the gate opener is solely powered by battery and utilizes the solar panel for charging, a minimum of a 24VDC 17Ah lead acid battery and a 24V 40W solar panel are required.*
- ◆ *If there are more than 6 hours of sunlight per day and no accessories are connected (except for the push button and warning light), the gate opener can operate 10 cycles per day.*
- ◆ *Add more solar panels and increase battery capacity if there is less than 6 hours of sunlight per day or if using any accessories (such as a photocell sensor, external receiver, Homelink remote control kit, exit wand, or wired keypad).*
- ◆ *For precise recommendations on solar panel power and battery capacity, please contact our customer support at www.topens.com.*

Connect the Power Supply

Power Mode 2

By AC Electricity, Solar Panels and Back-up Batteries

- ◆ Connect two 12VDC batteries in series to achieve 24VDC (batteries not included).
- ◆ Connect the batteries to the “BAT+” and “BAT-” terminals.
- ◆ Assemble the solar panels, connect them in parallel, and mount them in an area clear of obstructions and shading from buildings and trees. The solar panel should face south if it is located north of the equator. If it is located south of the equator, it should face north.
- ◆ Connect the solar panels to the “SOL+” and “SOL-” terminals.
- ◆ Connect the live wire (black) and neutral wire (white) of the power cord to the gate opener terminal “L” and terminal “N”, respectively. The “PE” terminal does not need to be connected for this model of gate opener.
- ◆ Plug the power cord into an electrical outlet.



NOTES ABOUT THE BATTERY AND SOLAR PANEL

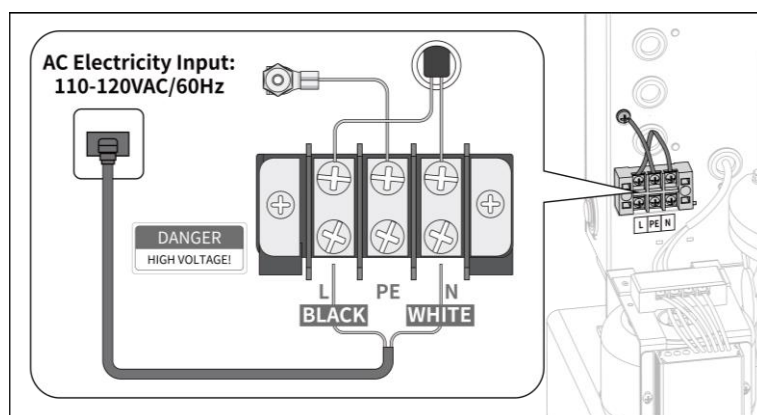
- ◆ The batteries should be waterproof, or they should be placed in waterproof housing.
- ◆ The built-in solar charge controller supports a maximum solar panel power of 240W; exceeding this limit can cause damage to the solar charge controller.
- ◆ If the gate opener is powered by back-up batteries and utilizes both AC electricity and solar panel for charging, a minimum of a 24VDC 12Ah lead acid battery and a 24V 30W solar panel are required.

Connect the Power Supply

Power Mode 3

Use AC Electricity Only

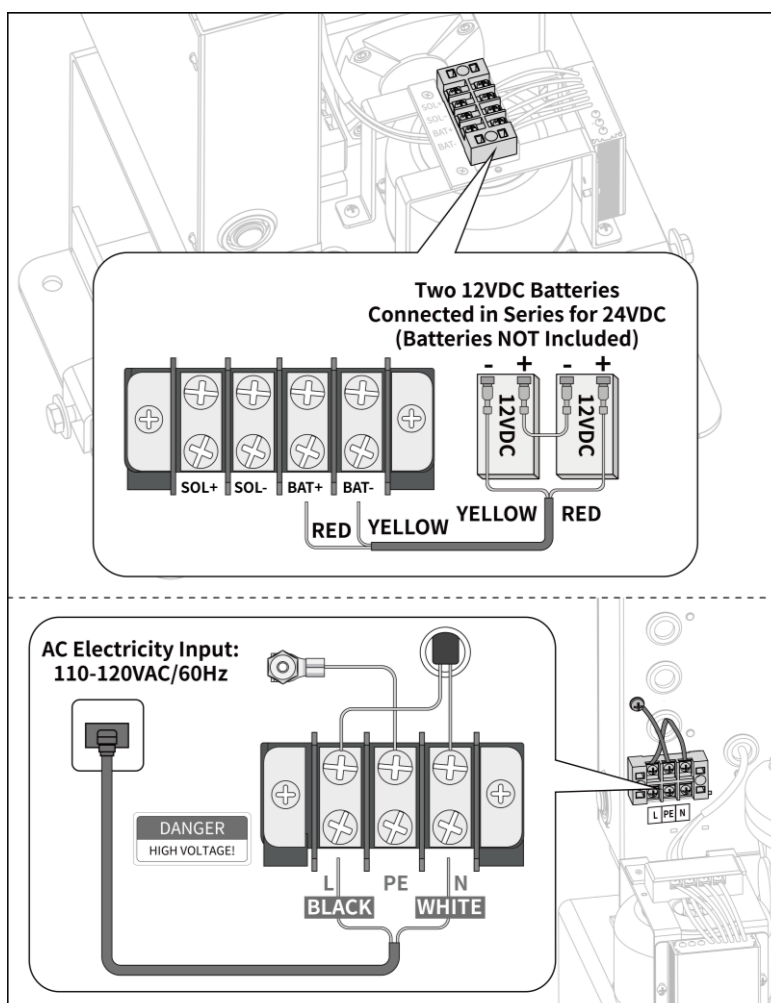
- ◆ The specification of the power cord is $2C \times 0.75\text{mm}^2$ (18AWG).
- ◆ Connect the live wire (black) and neutral wire (white) of the power cord to the gate opener terminal “L” and terminal “N”, respectively. The “PE” terminal does not need to be connected for this model of gate opener.
- ◆ Plug the power cord into an electrical outlet.



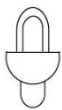
Power Mode 4

By AC Electricity and Back-up Batteries

- ◆ If the AC power failures occur for less than 8 hours per day, you can use a minimum of 24VDC 12Ah lead acid battery as a backup power source while using AC electricity to charge the battery.
- ◆ Connect two 12VDC batteries in series to achieve 24VDC (batteries not included).
- ◆ Connect the batteries to the “BAT+” and “BAT-” terminals.
- ◆ Connect the live wire (black) and neutral wire (white) of the power cord to the gate opener terminal “L” and terminal “N”, respectively. The “PE” terminal does not need to be connected for this model of gate opener.
- ◆ Plug the power cord into an electrical outlet.



Solar Charge Controller Indicators

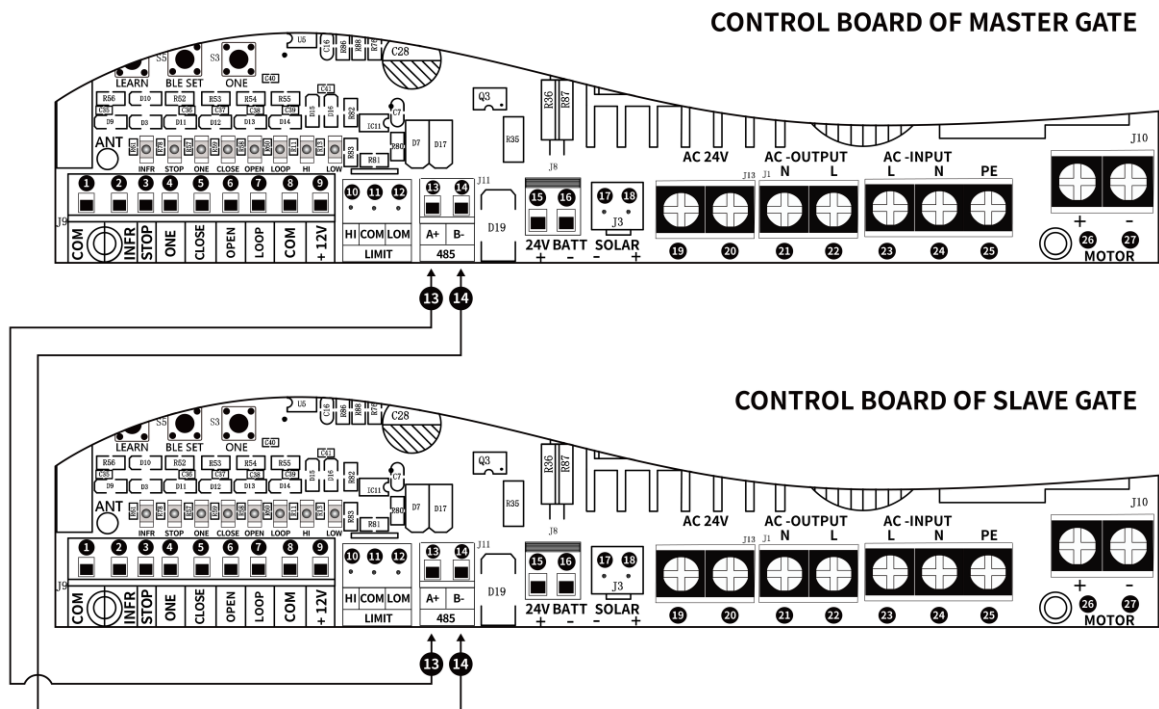
Indicator Icon	Indicator Type	Indicator Status	Meaning
	Solar Indicator	Off	Solar panel not connected or solar panel output voltage is lower than 24V
		Flash	Charging the battery
		Constant on	Fully charged
	Battery Indicator	Green on	High battery
		Blue on	Medium battery
		Red on	During discharge, the indicator LED will turn red when the battery voltage falls below 23V
			During charging, the indicator LED will stay red until the battery voltage rises to 24V
		Red flash	During discharge, the indicator LED will flash red when the battery voltage falls below 18V
			During charging, the indicator LED will flash red when the battery voltage falls below 21V
	Load Indicator	Off	Battery not connected or battery faulty
		Constant on	Output normal
		Flash fast	Over-load
		Off	No output (short-circuit or over-discharge)

Note: If the load exceeds the controller's capacity more than three seconds, the controller will cut the output and the load indicator LED will flash rapidly five times (approximately 4 seconds) then off. The controller will continue to detect the load current, once the load returns to a safe level, the output will be restored and the LED will light up normally. If a short circuit occurs at the output, please re-power the controller to ensure normal operation.

Dual Gate Opener System Setup

Connection between the Master and Slave Gate Opener

In a dual gate opener system, the slave gate opener is controlled by the master gate opener. To enable communication between them, connect the slave gate opener to the master gate opener using a 2-core shielded twisted-pair wire, minimum wire size is 2C x 0.5mm²(20AWG). Refer to the following illustration for proper connection.



NOTES:

- ◆ The maximum distance between the master and slave gate openers should not exceed 30 meters (100 feet).
- ◆ Both the master and slave gate openers should be powered on simultaneously to initiate dual-gate operation.

Dual Gate Opener Configuration and Accessory Connection

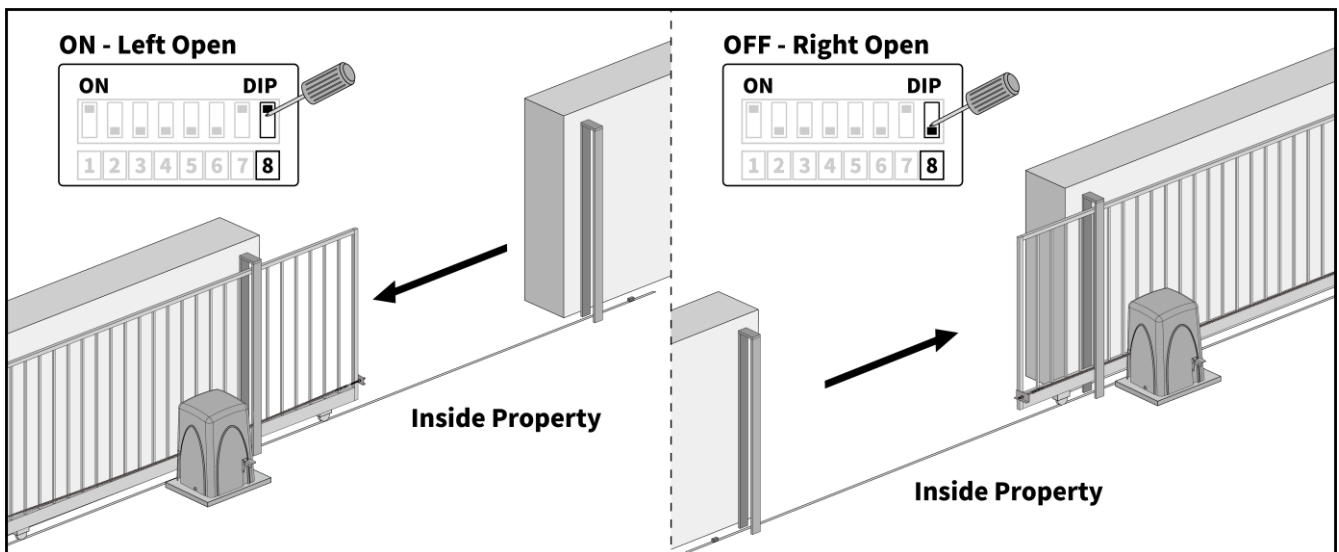
For a dual gate opener system, set DIP Switch #2 on SW2 on the control board to **ON** for the master gate opener and to **OFF** for the slave gate opener. Refer to the **Configure the Control Board Settings** section for detailed instructions.

Connect all accessories to the control board of the master gate opener and program all wireless accessories with it, as the master gate opener controls the entire system.

Configure Left / Right Open

WARNING

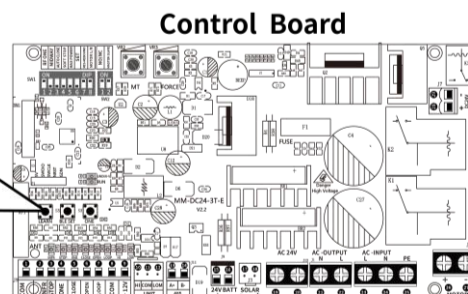
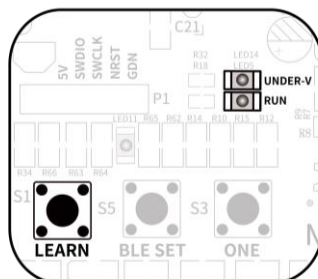
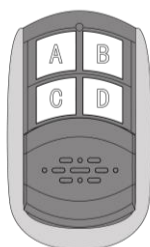
- ◆ Before operating your gate opener, ensure that the Left / Right Open setting on the control board matches the opening direction of the gate.
- ◆ If the opener is installed on the left side of the driveway and the gate opens to left, set the opener to **Left Open**. If the opener is installed on the right side of the driveway and the gate opens to right, set the opener to **Right Open**.
- ◆ Please refer to the DIP Switch Settings section for detailed instructions.



Program the Remote Control

NOTES

- ◆ Keep the gate movement area free of obstructions, and ensure children, pets and livestock stay away from the gate opener system while the gate is in motion.
- ◆ If you lose any remote control, please erase and reprogram all remaining remote controls for safety.



Function of the Remote Control Button

- ◆ Each remote has four buttons, from top to bottom are separately A, B, C and D.
- ◆ For the sliding gate opener, button A is used to be programmed with the gate opener for standard operation. Once button A is programmed, button B automatically activates midway mode to partially open the gate for quick passage. If the midway mode function is disabled, button B functions the same as button A. Buttons C and D can be programmed separately to operate additional sliding gate openers by adding extra ERM12 External Receivers (available on the TOPENS website www.topens.com) to each control board, allowing for standard operation without midway mode.
- ◆ Each press of the programmed button A cycles the gate through open, stop, close, stop, and open. With the ERM12 external receiver, the programmed buttons C and D can also control the gate with the same open, stop, close, stop, and open cycle.

How to Program the Remote Control

The remote control **MUST** be programmed to the gate opener before use. The remote controls that come with the gate opener are preprogrammed.

If you purchase additional remote controls, or if the programmed remotes are not working, repeat the programming steps below for each remote control.

Enter Programming Mode

- ◆ Press and hold the LEARN button on the control board for about 1 second. The buzzer will emit a long beep, and the RUN LED will flash and then turn off, indicating that the gate opener is now in programming mode.

Program the Remote Control

- ◆ Press the remote control button you want to program once, then press it again after the LED on the remote turns off.
- ◆ The buzzer will emit 8 short beeps (lasting about 2 seconds), and the RUN LED will flash and then stay on steadily, indicating successful programming.

Additional Remote Controls

- ◆ The gate opener can pair Max. 120 TC131 remote controls on its own, and up to 250 with the ERM12 External Receiver (sold separately on the TOPENS website www.topens.com).

How to Erase All Programmed Remote Controls

- ◆ Press and hold the LEARN button until the buzzer emits 8 short beeps (the RUN LED will turn off and then return to being on). Now all programmed remote controls have been erased.

Adjust the Open / Close Limit Position

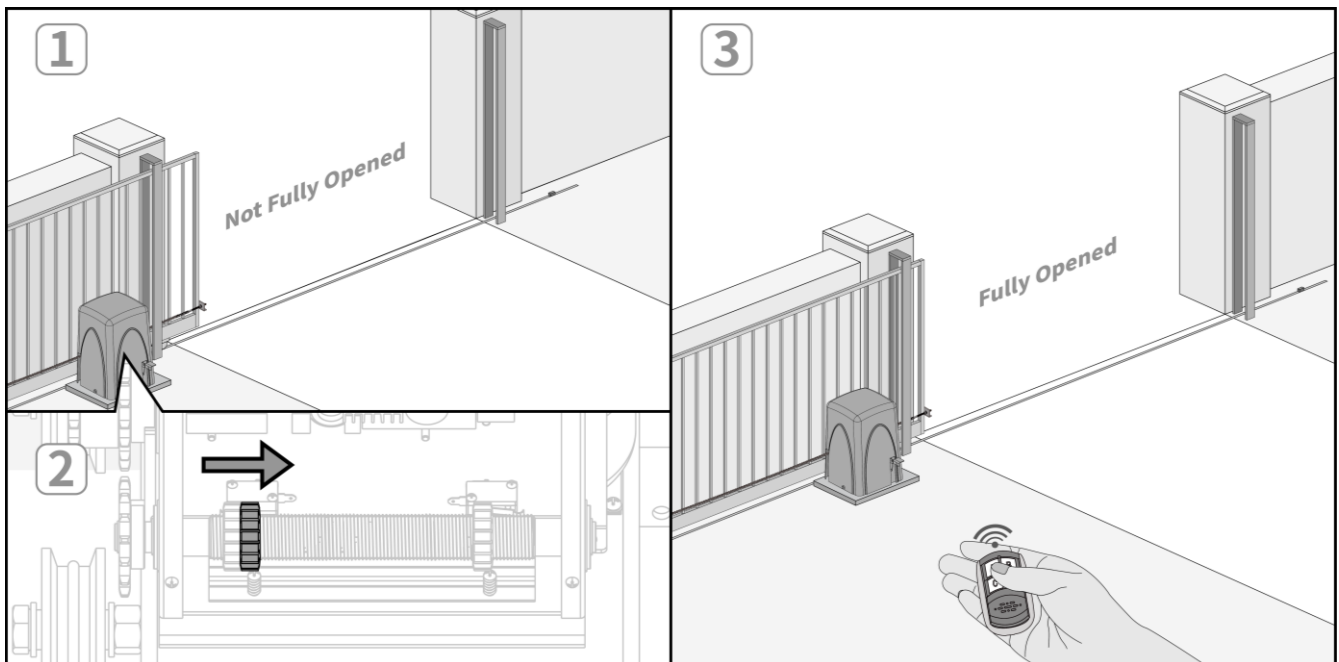
WARNING

- ◆ Before making any adjustments, disengage the clutch of the gate opener to prevent the gate from moving unexpectedly.

For Left Open Gate

Adjusting the Open Limit Position

- ◆ Use the remote control to open the gate. If the gate stops halfway and fails to get to the desired open position, turn off the power switch and disengage the clutch. Depress the spring loaded bracket with a screwdriver and turn the left adjustment nut slightly to the right. Engage the clutch and turn on the power switch to test the gate.
- ◆ If the gate opens over the desired open position, depress the spring loaded bracket with a screwdriver and turn the left adjustment nut slightly to the left.
- ◆ Repeat the above steps until the gate automatically stops at the desired open position.



Adjusting the Close Limit Position

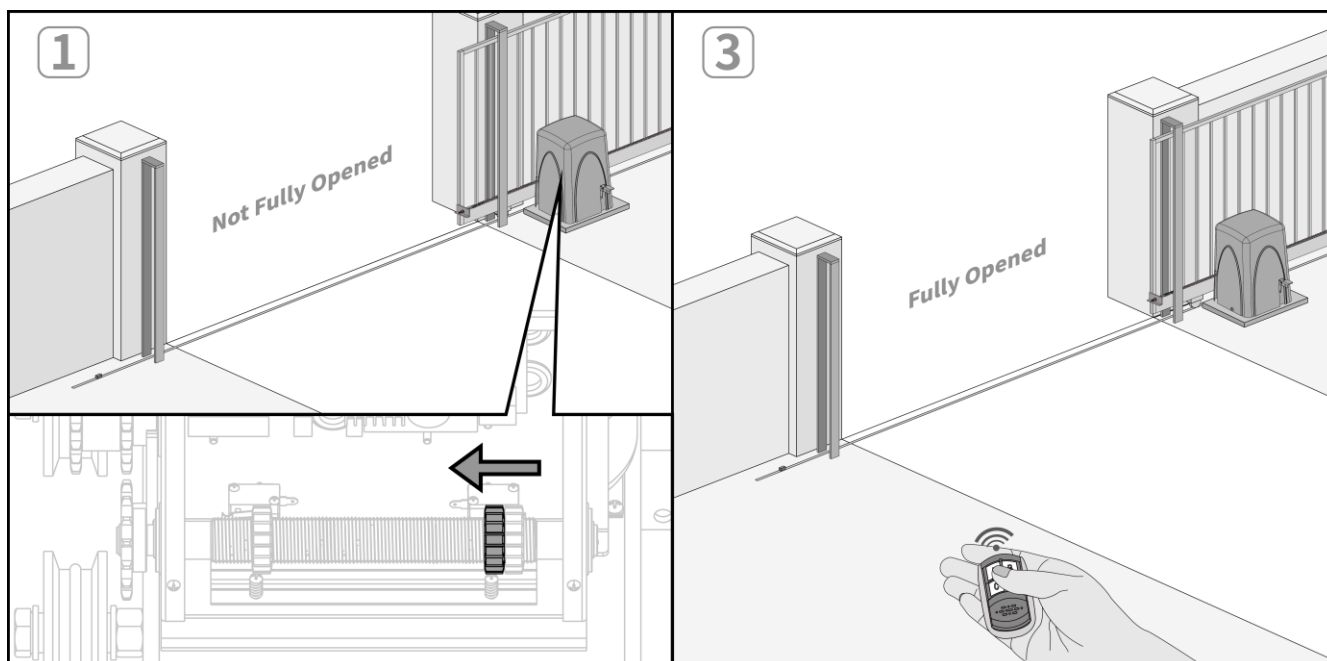
- ◆ Use the remote control to close the gate. If the gate stops halfway and fails to get to the desired closed position, turn off the power switch and disengage the clutch. Depress the spring loaded bracket with a screwdriver and turn the right adjustment nut slightly to the left. Engage the clutch and turn on the power switch to test the gate.
- ◆ If the gate closes over the desired closed position, depress the spring loaded bracket with a screwdriver and turn the right adjustment nut slightly to the right.
- ◆ Repeat the above steps until the gate automatically stops at the desired closed position.

Adjust the Open / Close Limit Position

For Right Open Gate

Adjusting the Open Limit Position

- ◆ Use the remote control to open the gate. If the gate stops halfway and fails to get to the desired open position, turn off the power switch and disengage the clutch. Depress the spring loaded bracket with a screwdriver and turn the right adjustment nut slightly to the left. Engage the clutch and turn on the power switch to test the gate.
- ◆ If the gate opens over the desired open position, depress the spring loaded bracket with a screwdriver and turn the right adjustment nut slightly to the right.
- ◆ Repeat the above steps until the gate automatically stops at the desired open position.



Adjusting the Close Limit Position

- ◆ Use the remote control to close the gate. If the gate stops halfway and fails to get to the desired closed position, turn off the power switch and disengage the clutch. Depress the spring loaded bracket with a screwdriver and turn the left adjustment nut slightly to the right. Engage the clutch and turn on the power switch to test the gate.
- ◆ If the gate closes over the desired closed position, depress the spring loaded bracket with a screwdriver and turn the left adjustment nut slightly to the left.
- ◆ Repeat the above steps until the gate automatically stops at the desired closed position.

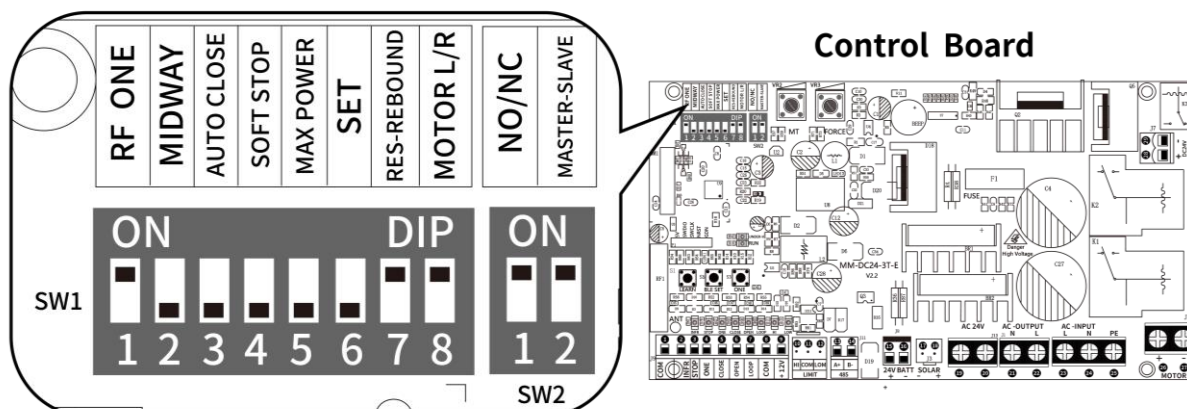
Configure the Control Board Settings

WARNING

- ◆ Ensure that the gate opener is powered off when making any adjustments.
- ◆ Keep away from the gate while setting up the gate opener system to avoid unexpected gate movement.
- ◆ Carefully adjust the DIP switches to prevent the risk of damaging the gate opener and causing injury or death.
- ◆ For a dual gate opener system, all settings are determined by the master gate opener, except for DIP Switch #2 on SW2. This means that in the dual gate opener system, all settings on the slave gate opener are invalid except for DIP Switch #2 on SW2.
- ◆ Always seek assistance from a professional technician or electrician if you have any questions.

DIP Switch Settings

There are TWO sets of the DIP Switches on the main control board, each with specific functions. Ensure that they are positioned correctly for your particular installation.



SW1:

DIP Switch #1: Remote Control Working Mode

The factory default setting is **ON**.

IMPORTANT NOTE: DO NOT adjust this switch, or the gate opener will not operate properly.

DIP Switch #2: Enable / Disable Midway Mode Function

ON – Midway mode function enabled

OFF – Midway mode function disabled

The factory default setting is **OFF**. The midway mode allows the gate to partially open for quick passage.

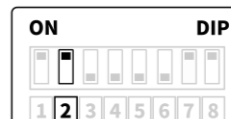
IMPORTANT NOTES:

- ◆ Press button B on the remote control to activate the midway mode when the gate is in fully closed position.
- ◆ The running time of the motor in midway mode is fixed at 6 seconds.

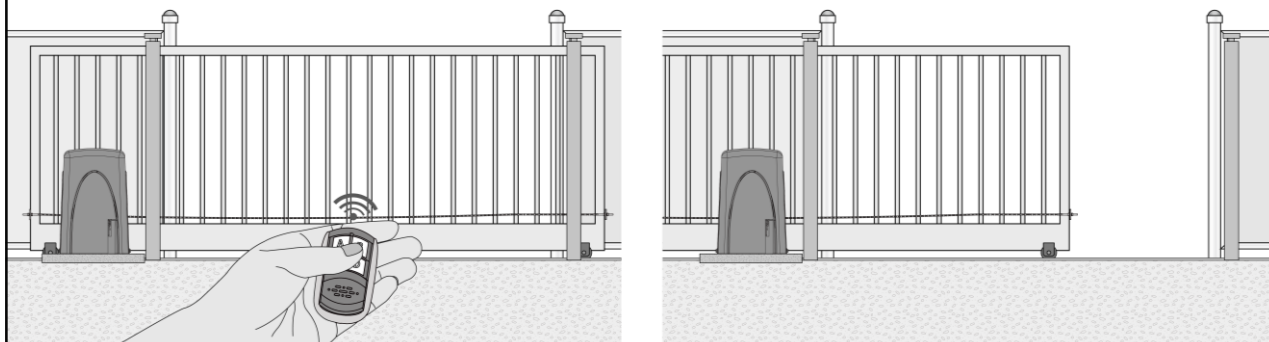
Configure the Control Board Settings

Midway Mode:

1. Gate is in the fully closed position.
2. DIP Switch #2 is set to ON.
3. Press button B on the remote control to open the gate.



Gate will open for 6 seconds and then stop automatically.



DIP Switch #3: Enable / Disable Auto Close Function

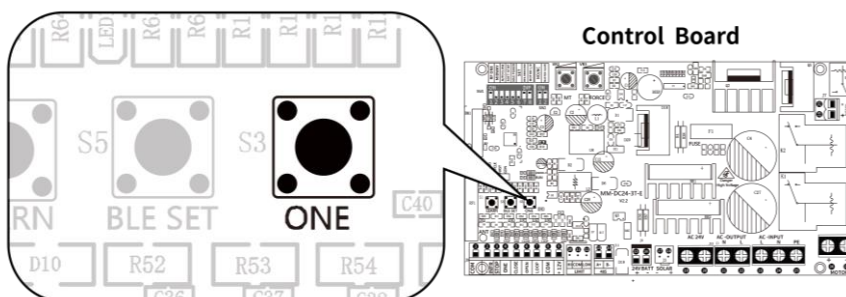
ON – Auto close function enabled

OFF – Auto close function disabled

The factory default setting is **OFF**. The auto close function allows the gate to automatically close after a set period.

Auto Close Time Setting:

1. Turn DIP Switches #3 and #6 to **ON**, and ensure DIP Switch #4 is **OFF**. (**NOTE: DIP Switches #3 and #4 cannot be ON simultaneously during setting; they must be set separately. After setting, both can be ON simultaneously.**)
2. Press the "ONE" button to increase the timer from 1 second. (Each time the timer setting is entered, it starts from 1 second). Each press of the button will increase the timer by 1 second, up to a maximum of 250 seconds.



3. Turn DIP Switch #6 back to **OFF** to save the setting for DIP Switch #3.

IMPORTANT NOTES:

- ◆ The auto close function should be enabled if a vehicle sensor exit wand is installed.
- ◆ When the auto close function is enabled, the included TC102 infrared photocell sensor is highly recommended to be installed with the gate opener for safety.

DIP Switch #4: Enable / Disable Soft Stop Function

ON – Soft stop function enabled (Effective only after travel learning)

OFF – Soft stop function disabled

The factory default setting is **OFF**. The soft stop feature slows down the gate during the final phase before it fully stops, protecting the motor.

Configure the Control Board Settings

Travel Learning:

1. Turn DIP Switches #4 and #6 to **ON**, and ensure DIP Switch #3 is **OFF**. (*NOTE: DIP Switches #3 and #4 cannot be ON simultaneously during setting; they must be set separately. After setting, both can be ON simultaneously.*)
2. Press and hold the "ONE" button until the gate opener starts running automatically. The gate will run a full cycle of opening and closing, then stop automatically. The buzzer on the opener will beep twice, indicating that the travel learning process has been successfully completed.
3. Turn DIP Switch #6 back to **OFF** to save the setting for DIP Switch #4. The soft stop function will be active in the next opening / closing cycle.

IMPORTANT NOTES:

- ◆ The soft stop period is fixed at 3 seconds if the soft stop function is enabled.
- ◆ The soft stop speed can be adjusted by turning Potentiometer A.

DIP Switch #5: Enable / Disable Start with Full Speed

ON – Start with full speed enabled (The gate opener runs with full speed when starting)

OFF – Start with full speed disabled (The gate opener runs with a soft start at a slower speed for 2 seconds)

The factory default setting is **OFF**.

DIP Switch #6: Setting Switch

Work together with DIP Switch #3 or #4 to set the auto close time or travel learning.

ON – Enter setup mode for the selected function (DIP Switch #3 or Switch #4).

OFF – Save the setting if DIP Switch #3 or #4 has been configured or changed, and exit setup mode.

The factory default setting is **OFF**.

DIP Switch #7: Set Stop / Reverse in Case of Obstruction During Gate Closing

ON – The gate opener reverses if an obstruction is detected during gate closing

OFF – The gate opener stops if an obstruction is detected during gate closing

The factory default setting is **ON**.

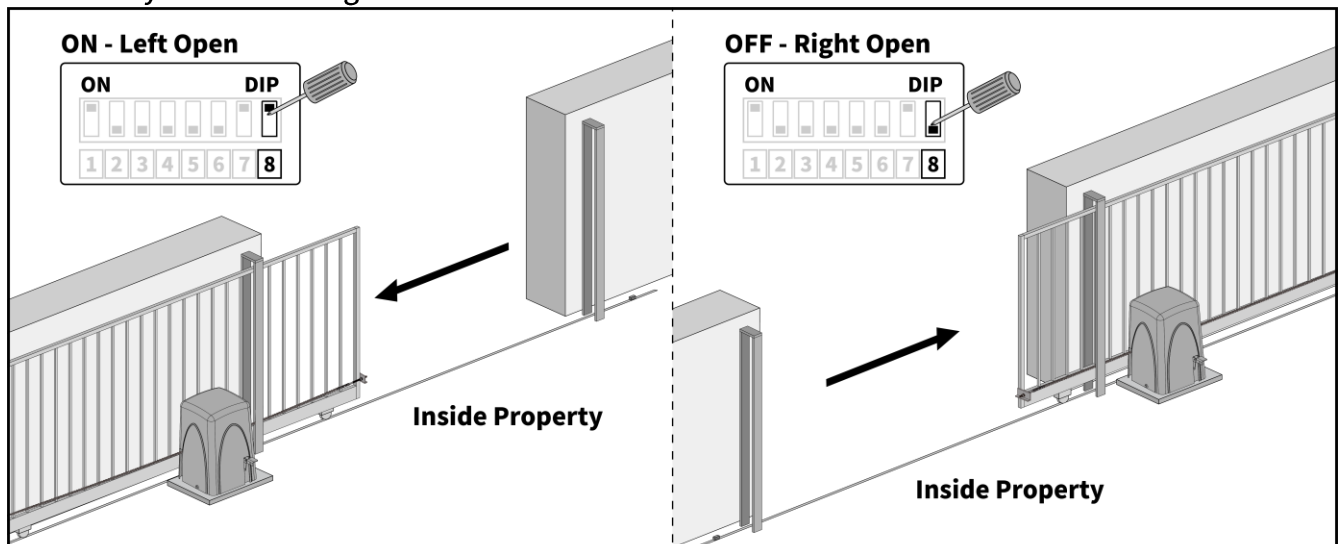
IMPORTANT NOTE: The gate opener will always **stop** if an obstruction is detected during gate opening.

DIP Switch #8: Set Left / Right Open

ON – Left open

OFF – Right open

The factory default setting is **ON**.



Configure the Control Board Settings

SW2:

DIP Switch #1: Set the Type of the Limit Switch

ON – Normally closed limit switch

OFF – Normally open limit switch

IMPORTANT NOTES:

- ◆ The limit switch installed in the gate opener at the factory is a normally closed switch, this DIP switch must remain **ON**.
- ◆ DO NOT adjust this switch, or it will cause the gate opener to malfunction.

DIP Switch #2: Configure the Master / Slave Gate Opener

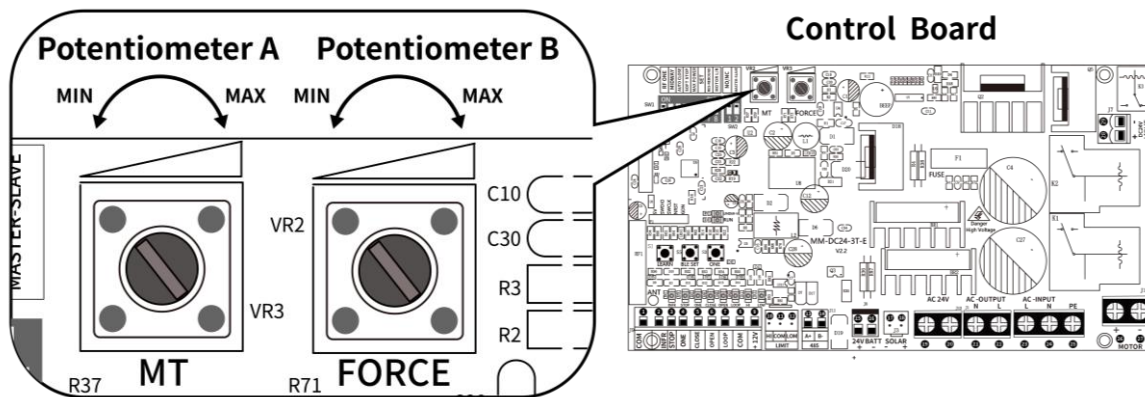
For a **Single Gate Opener** system, configure the opener as the master gate opener by setting DIP Switch #2 to **ON**.

For a **Dual Gate Opener** system, configure one opener as the master gate opener by setting DIP Switch #2 to **ON**, and configure the other opener as the slave gate opener by setting DIP Switch #2 to **OFF**.

The factory default setting for DIP Switch #2 is **ON**.

IMPORTANT NOTE: For a dual gate opener system, connect all accessories to the control board of the master gate opener and program all wireless accessories with it, as the master gate opener control the entire system.

Potentiometer Settings



Potentiometer A: Adjust the Speed of Soft Stop

- ◆ Turn the potentiometer clockwise to increase the speed, and counterclockwise to decrease it.

Potentiometer B: Adjust the Open and Close Stall Force of the Gate Opener

- ◆ Turn the potentiometer clockwise to increase the stall force, and counterclockwise to decrease it.
- ◆ Stall force regulates the gate's sensitivity to obstacles during operation. A higher stall force setting decreases sensitivity, making the gate less likely to detect objects. Conversely, a lower stall force setting increases sensitivity, causing the gate to stop or reverse more readily when encountering even minor obstructions.

Stall Force Adjustment & Obstruction Test

Fine Tune the Stall Force

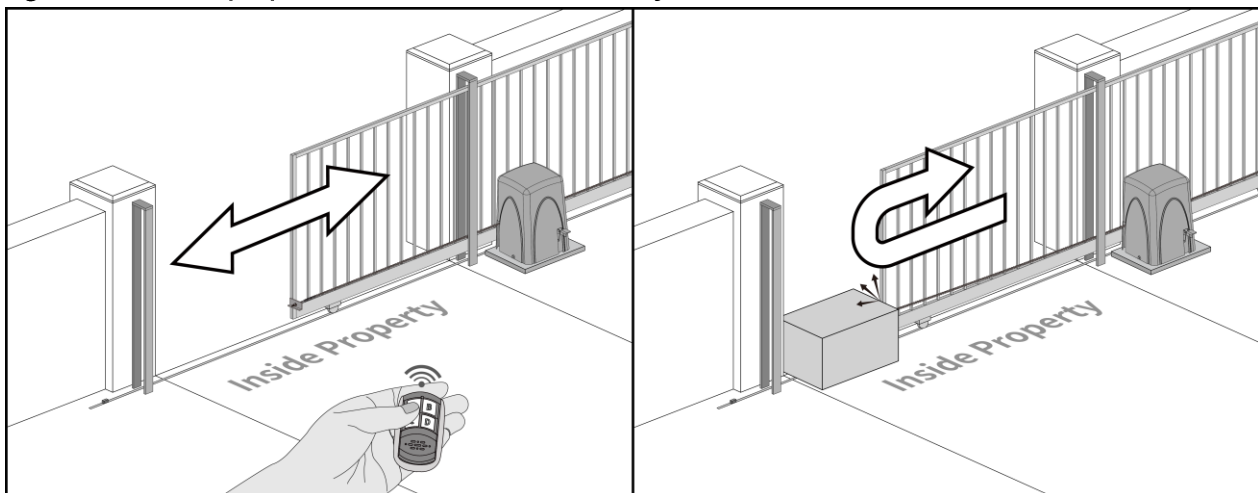
This force should be high enough to ensure the gate reaches both open and close limits without reversing unnecessarily or causing frequent interruptions, but low enough to prevent injury if an obstruction is encountered. The appropriate stall force settings depend on the gate's length and weight, so fine-tuning may be required. Follow these steps to adjust the stall force:

- ◆ **Initial Assessment:** Use the remote control to open and close the gate, observing its movement.
- ◆ **Adjust the Stall Force:** If the gate reverses or stops before reaching the fully closed or open position, increase the stall force by turning Potentiometer B slightly clockwise.
- ◆ **Perform the Obstruction Test:** Run the test after each force setting adjustment (see below).

Obstruction Test

This test ensures that the gate opener's automatic obstruction-sensing feature functions correctly. The gate should have enough force to reach both open and close limits, but **MUST** stop or reverse after contacting with a solid object.

- ◆ **Operate the Gate:** Open and close the gate with the remote control, ensuring that it stops at the proper open and close limit positions.
- ◆ **Setup for the Test:** Place a solid, immovable object in the gate's path to simulate an obstruction.
- ◆ **Test Gate's Closing:** Run the gate in the closing direction towards the obstruction. The gate should stop (when DIP Switch 7 is set to OFF) or reverse (when DIP Switch 7 is set to ON) upon contact with the solid object. If it does not, slightly decrease the stall force by turning Potentiometer B on the control board counterclockwise (towards MIN).
- ◆ **Test Gate's Opening:** Perform the same test with the gate moving in the opening direction. The gate should stop upon contact with the solid object.



Reverse in Case of Obstruction During Gate Closure

NOTES:

- ◆ If the stall force is set too low (i.e., the sensitivity is too high), the gate may stop or reverse too easily, even with minimal obstruction or resistance, such as strong wind or heavy snow.
- ◆ The gate opener is designed to stop or reverse (based on DIP Switch 7 settings on SW1 of the control board) the gate when the gate comes in contact with an obstruction during closing and to stop the gate during opening. It is highly recommended to install a photocell sensor for additional safety.
- ◆ Always perform an obstruction test for the gate each time you set up the control board or restart it after a power outage.

Connect the Accessories

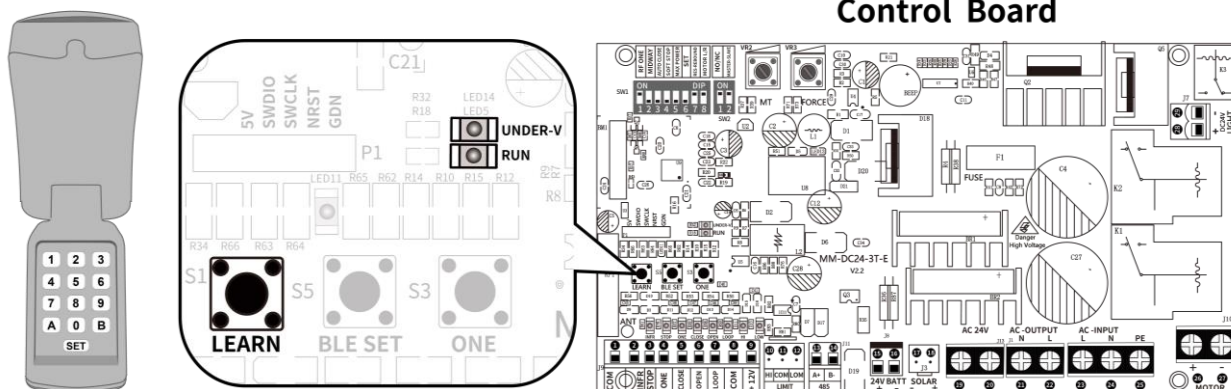
NOTES

- ◆ *This section covers only the programming and wire connections with the control board. For additional operations, please refer to the corresponding accessory user manual.*
- ◆ *It is highly recommended to install the included TC102 infrared photocell sensor in the following situations for safety: if you have children or pets at your property, the gate opener auto close function is set to ON, the gate opener stall force is set to the maximum, a vehicle exit sensor is installed, or other gate control devices are used.*

TC188 Universal Keypad

Operate the gate using a user-defined password. You can use this keypad wirelessly or wire it to the gate opener according to your needs.

Wireless Mode Programming and Operation



Step 1 Program New Master Code

Factory default master code is 9999, all codes should be 4 digits in length.

SET	4 digits Old Master Code	SET	01	SET	4 digits New Master Code	SET	4 digits New Master Code	SET
-----	--------------------------	-----	----	-----	--------------------------	-----	--------------------------	-----

Step 2 Add New Permanent Entry Code

SET	Master Code	SET	02	SET	Entry Code	SET	Entry Code	SET
-----	-------------	-----	----	-----	------------	-----	------------	-----

Step 3 Program with the Gate Opener

- ◆ Input the entry code of the keypad.
- ◆ Press and hold the LEARN button on the control board for about 1 second. The buzzer will emit a long beep, and the RUN LED will flash and then turn off, indicating that the gate opener is now in programming mode.
- ◆ Press button A (or B) once, and the keypad LED backlight will flash quickly. Press it again after the backlight changes from a rapid flash to a slow flash.
- ◆ The buzzer will emit 8 short beeps (lasting about 2 seconds), and the RUN LED will flash and then stay on steadily, indicating successful programming.

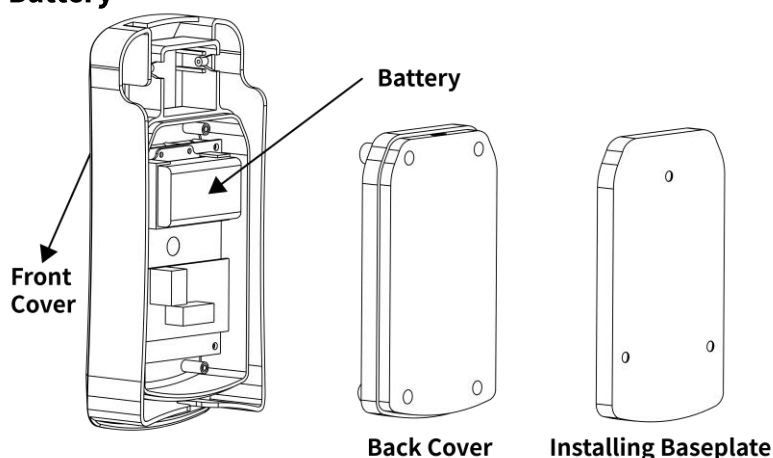
Step 4 Operate the Gate Opener

Input the entry code and then press the programmed button A (or B) to operate the gate. Within 3 seconds of pressing button A (or B), you can press the button again without re-entering the code to operate the gate.

Connect the Accessories

Wired Mode Connection and Operation

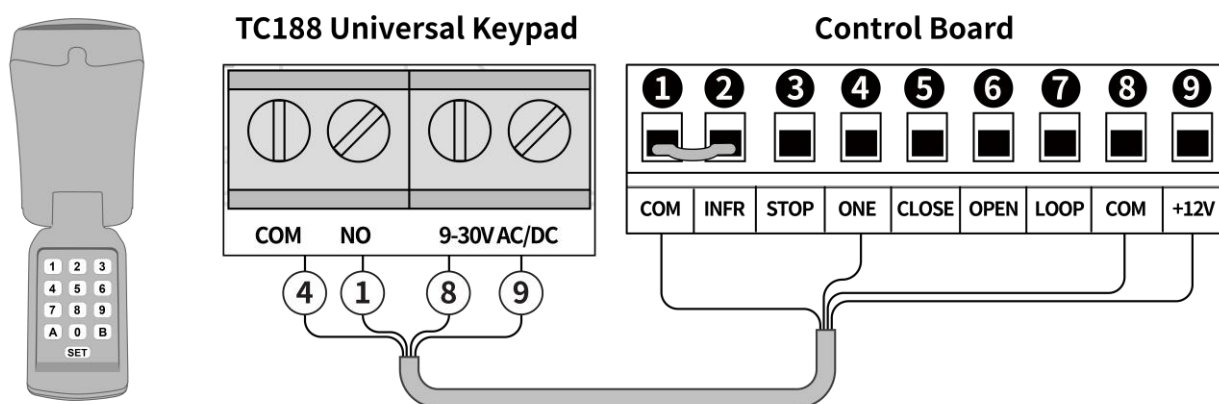
Step 1 Remove the Battery



Step 2 Wire Connection

Turn off the power to the gate opener before wire connection. Connect the “COM” and “NO” terminals to control board terminal ④ “ONE” and terminal ① “COM”. Then connect the “9-30V AC/DC” terminals to control board terminal ⑧ “COM” and terminal ⑨ “+12V”. Polarity does not matter for these connections.

NOTE: A 4C x 0.3 mm² (22AWG) cable is required for the wire connection, but it is NOT included.



Step 3 Program New Master Code

Factory default master code is 9999, all codes should be 4 digits in length.

SET 4 Digits Old Master Code SET 01 SET 4 Digits New Master Code SET 4 Digits New Master Code SET

Step 4 Add New Permanent Entry Code

SET Master Code SET 02 SET Entry Code SET Entry Code SET

Step 5 Operate the Gate Opener

Input the entry code and then press button A (or B) to operate the gate. Within 3 seconds of pressing button A (or B), you can press the button again without re-entering the code to operate the gate.

NOTE: If the gate opener is ONLY solar powered, please add more solar panels and upgrade the battery capacity to support the additional power consumption by the wired keypad.

Connect the Accessories

TKP3 Wireless Keypad

Operate the gate with a user defined password

Programming and Operation

- ◆ Press and hold the LEARN button on the control board for about 1 second. The buzzer will emit a long beep, and the RUN LED will flash and then turn off, indicating that the gate opener is now in programming mode.
- ◆ Press the button “OK” on the keypad and the buzzer will emit 8 short beeps (lasting about 2 seconds). The RUN LED will flash and then stay on steadily, indicating successful programming.
- ◆ Use the default password “888888” to operate the gate opener. Press “PIN” “8 8 8 8 8 8” and then press the button “OK” to operate the opener. Just one press of the button “OK”, the moving gate will stop for quick passing through.

Change the Password

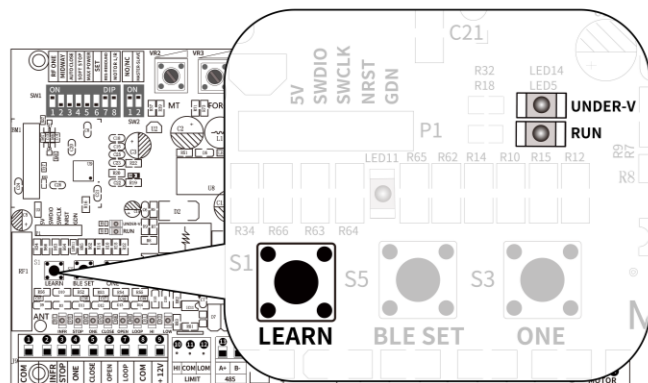
- ◆ Press “PIN”, input the old six digits password, and then press the “PIN” again. The buzzer will emit a long beep followed by a short beep, and the RUN LED will flash simultaneously.
- ◆ Input the new six digits password and then press the “PIN” to confirm the new setting within 15 seconds. The buzzer will emit 8 short beeps (lasting about 2 seconds), and the RUN LED will flash and then stay on steadily, indicating the password has been changed successfully.
- ◆ Press “PIN” “new six digits password” and then press the button “OK” to operate the gate opener.

NOTES:

- ◆ Each button press during programming must be completed within 1 second to ensure successful programming.
- ◆ If no signal is received within 15 seconds during the password change process, the buzzer will beep twice, and the RUN LED will return to on directly, indicating that the keypad has automatically exited the password change mode.
- ◆ If you forget the password, you can reset the keypad to restore the default code “888888” by reprogramming it.



Program the Keypad



Use the Default Password

PIN 888888 OK

Change the Password

PIN Old Six Digits Password PIN

New Six Digits Password PIN

Use the New Password

PIN New Six Digits Password OK

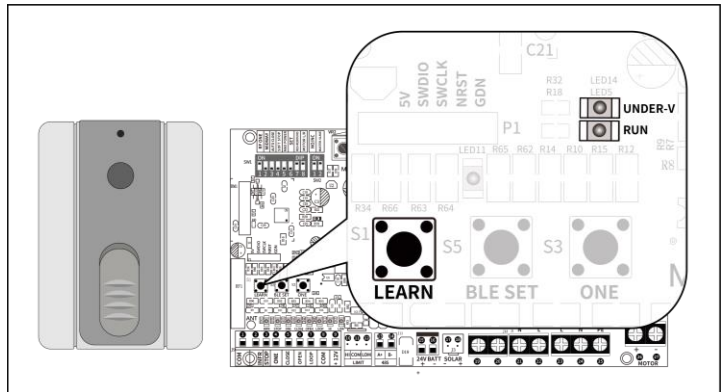
Connect the Accessories

TC173 Wireless Push Button

Open/close gate by pressing the wireless button

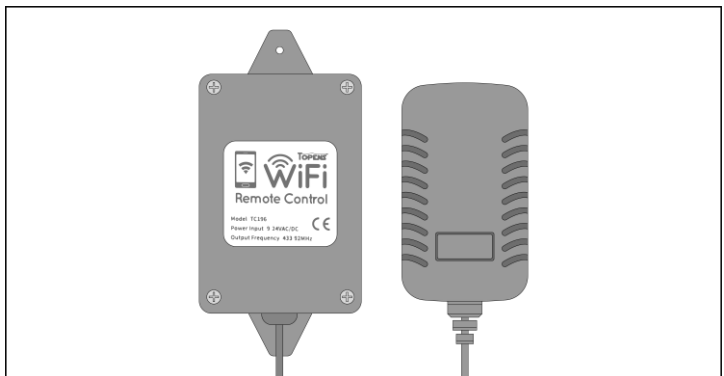
Programming and Operation

- ◆ Press and hold the LEARN button on the control board for about 1 second. The buzzer will emit a long beep, and the RUN LED will flash and then turn off, indicating that the gate opener is now in programming mode.
- ◆ Press the push button once, then press it again after the LED on the push button turns off. The buzzer will emit 8 short beeps (lasting about 2 seconds), and the RUN LED will flash and then stay on steadily, indicating successful programming.
- ◆ Each press of the button will cycle the gate through open, stop, close, stop, and open.



TC196 Tuya WiFi Remote Control

- ◆ Control the gate opener with your cellphone anytime and anywhere when the remote controller is connected with WiFi.
- ◆ Please see detailed connection steps in TC196 user manual.



Connect the Accessories

TEW3 Vehicle Sensor Exit Wand

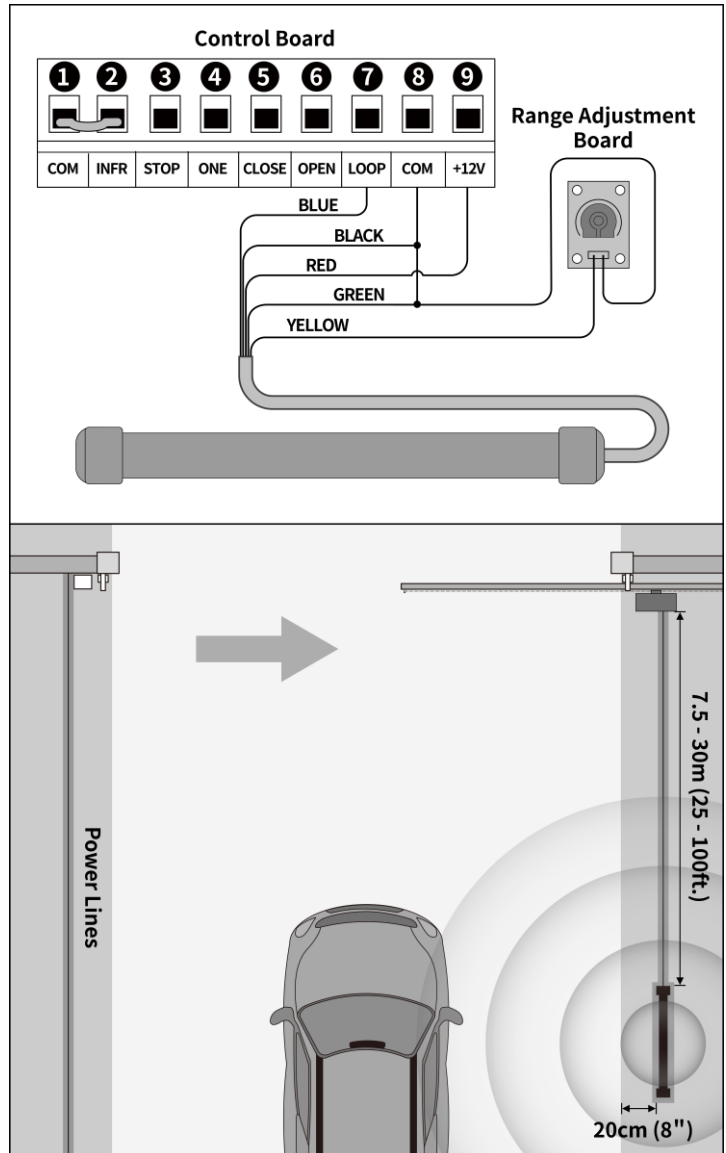
Opens the gate automatically when senses an approaching car

Wire Connection

- ◆ Turn off the power to the gate opener before wire connection.
- ◆ Connect the BLUE wire to control board terminal ⑦ “LOOP” .
- ◆ Connect the BLACK and GREEN wires to control board terminal ⑧ “COM” .
- ◆ Connect the RED wire to control board terminal ⑨ “+12V” .
- ◆ The sensitivity range adjustment board should be wired to the GREEN and YELLOW wires of the wand, regardless of the polarity.

Key Installation Notes

- ◆ Install the wand 7.5m to 30m (25ft. to 100ft.) away from the gate, and bury it 5cm (2") deep from ground and 20cm (8") from the driveway edge.
- ◆ Install the wand away from any power lines to avoid interrupting the detection signal.
- ◆ It is strongly recommended to enable the auto close function by referring to the Configure the Control Board Settings section in the installation manual to ensure home security.



NOTE: If the gate opener is ONLY solar powered, please add more solar panels and upgrade the battery capacity to support the additional power consumption by the exit wand.

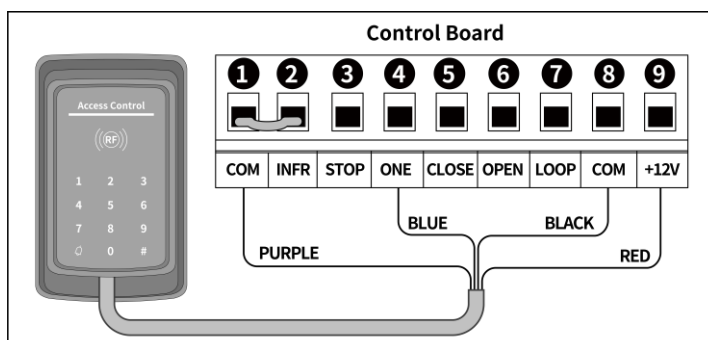
Connect the Accessories

TC175P Wired Keypad

Operate the gate with a user defined password / ID card

Wire Connection

- ◆ Turn off the power to the gate opener before wire connection.
- ◆ Connect the wires from the JP2 terminals of the wired keypad to the control board.
- ◆ Connect the PURPLE wire to control board terminal ① “COM” .
- ◆ Connect the BLUE wire to control board terminal ④ “ONE” .
- ◆ Connect the BLACK wire to control board terminal ⑧ “COM” .
- ◆ Connect the RED wire to control board terminal ⑨ “+12V” .



NOTES:

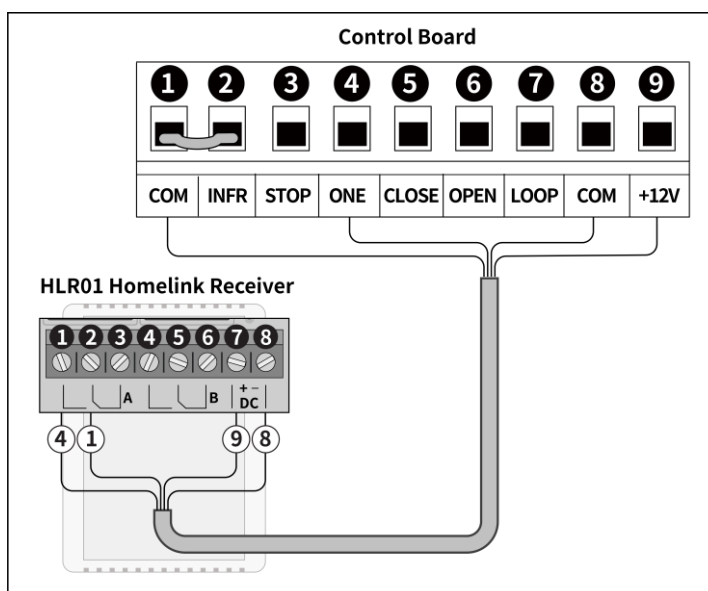
- ◆ A 4C x 0.3 mm² (22AWG) cable is required for the wire connection, but it is NOT included.
- ◆ Please see detailed password setting steps in TC175P user manual.
- ◆ If the gate opener is ONLY solar powered, please add more solar panels and upgrade the battery capacity to support the additional power consumption by the wired keypad.

HLR01 Homelink Remote Control Kit

Links the gate opener with your car's HomeLink system, allows for easy control of the gate opener through the HomeLink system.

Wire Connection

- ◆ Turn off the power to the gate opener before wire connection.
- ◆ Connect terminal ① to control board terminal ④ “ONE” .
- ◆ Connect terminal ② to control board terminal ① “COM” .
- ◆ Connect terminal ⑦ “+DC” to control board terminal ⑨ “+12V” .
- ◆ Connect terminal ⑧ “DC- ” to control board terminal ⑧ “COM” .



NOTES:

- ◆ A 4C x 0.3 mm² (22AWG) cable is required for the wire connection, but it is NOT included.
- ◆ Please see detailed programming steps with Homelink system in HLR01 user manual.
- ◆ If the gate opener is ONLY solar powered, please add more solar panels and upgrade the battery capacity to support the additional power consumption by the Homelink receiver.

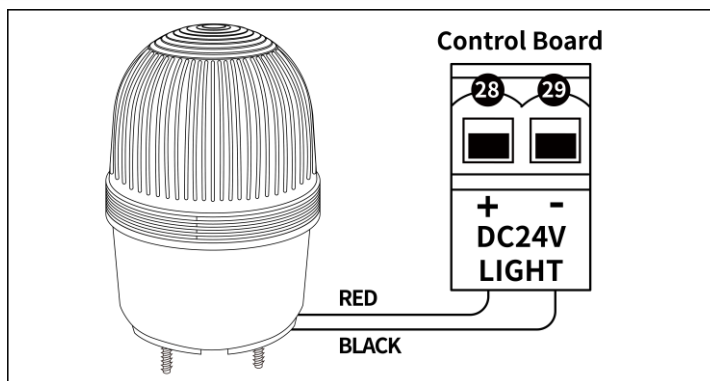
Connect the Accessories

JD24VY Warning Light

Flashing when the gate is moving, improving your gate safety

Wire Connection

- ◆ Turn off the power to the gate opener before wire connection.
- ◆ Connect the RED and BLACK wires to control board terminals ②⑧ and ②⑨ “LIGHT DC+24V-” , respectively.



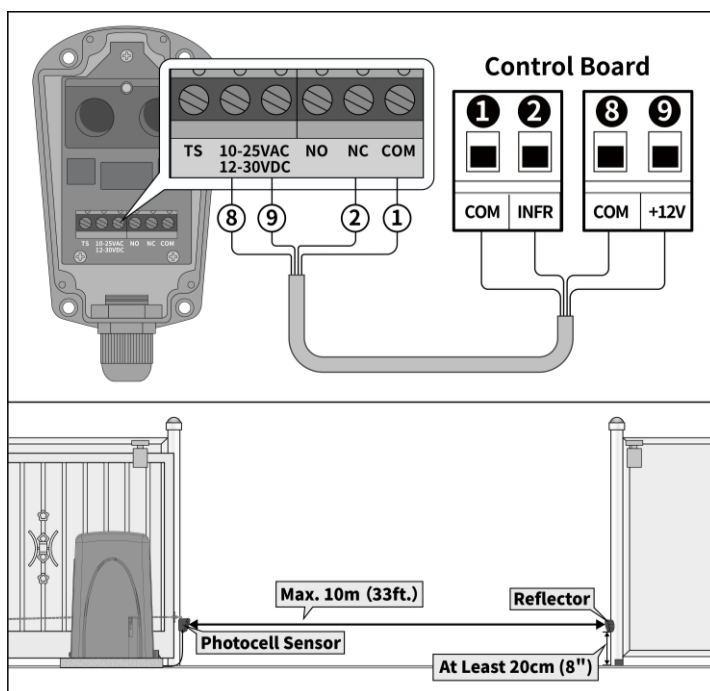
NOTE: A 2C x 0.3 mm² (22AWG) cable is required for the wire connection, but it is NOT included.

TRF3 Reflection Photocell Sensor

Prevents the gate from closing when obstructed, adds security with simple wire connection

Wire Connection

- ◆ Turn off the power to the gate opener before wire connection.
- ◆ Disconnect the jumper wire from terminal ① “COM” and terminal ② “INFR” on the control board to enable the photocell sensor function.
- ◆ Connect the “10-25VAC / 12-30VDC” terminals to control board terminal ⑧ “COM” and terminal ⑨ “+12V”, regardless of the polarity.
- ◆ Connect the “COM” and “NC” terminals to control board terminal ① “COM” and terminal ② “INFR”, respectively .



Key Installation Notes

- ◆ Mount the photocell sensor at least 20cm (8") above the ground.
- ◆ Power on the gate opener. Position the reflector directly opposite the mounted photocell sensor. The working light on the photocell sensor turning green indicates that the reflector is in the correct position.
- ◆ The maximum sensing range of the photocell sensor is 10m (33ft.).

NOTES:

- ◆ A 4C x 0.3 mm² (22AWG) cable is required for the wire connection, but it is NOT included.
- ◆ If the gate opener is ONLY solar powered, please add more solar panels and upgrade the battery capacity to support the additional power consumption by the photocell sensor.

Connect the Accessories

TC102 Infrared Photocell Sensor

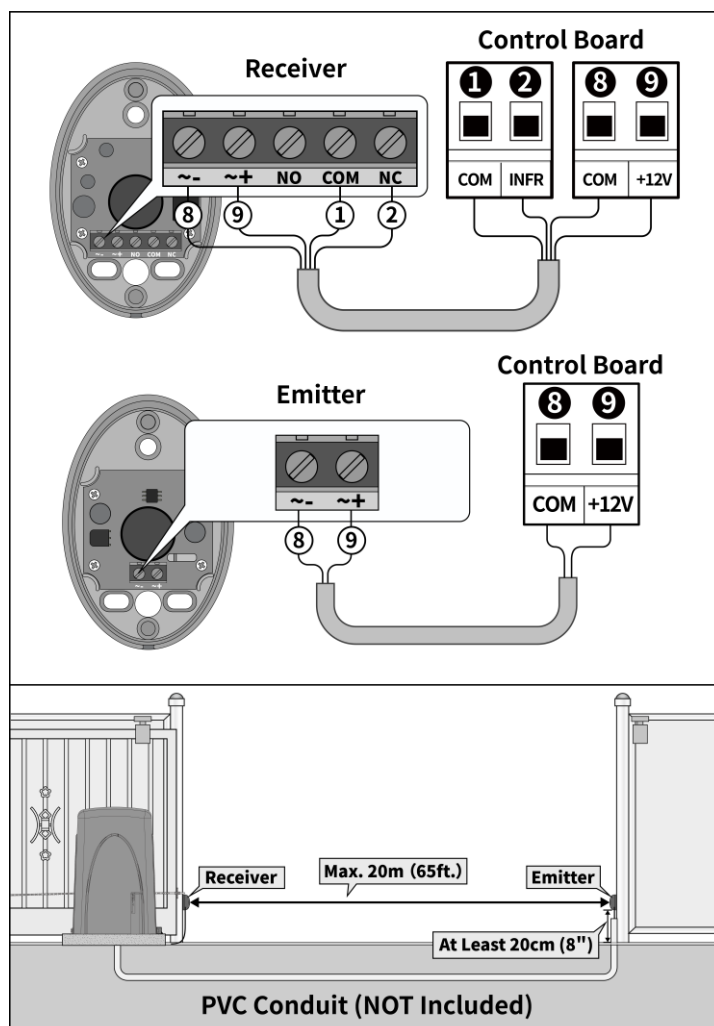
Prevents the gate from closing when obstructed, adds security

Wire Connection

- ◆ Turn off the power to the gate opener before wire connection.
- ◆ Disconnect the jumper wire from terminal ① “COM” and terminal ② “INFR” on the control board to enable the photocell sensor function.
- ◆ For the emitter, connect the “~ -” and “~ +” terminals to control board terminal ⑧ “COM” and terminal ⑨ “+12V”, respectively.
- ◆ For the receiver, connect the “~ -” and “~ +” terminals to control board terminal ⑧ “COM” and terminal ⑨ “+12V”, respectively. Connect the “COM” and “NC” terminals to control board terminal ① “COM” and terminal ② “INFR”, respectively.

Key Installation Notes

- ◆ Mount the photocell sensor at least 20cm (8") above the ground.
- ◆ Place the receiver on the control box side of the gate opener, directly facing the emitter.
- ◆ Ensure that both the emitter and receiver are aligned with each other. If manual precise alignment is difficult, use a visible laser beam for assistance.
- ◆ The maximum sensing range is 20m (65ft.), and the recommended distance between the emitter and receiver is 3m to 14m (10ft. to 46ft.).
- ◆ Put the cables into PVC conduit and bury the conduit underground to prevent damage.



NOTES:

- ◆ Connect the emitter to the gate opener with a 2C x 0.3 mm² (22AWG) cable. Connect the receiver to the gate opener with a 4C x 0.3 mm² (22AWG) cable. Cables are required but NOT included.
- ◆ If the gate opener is ONLY solar powered, please add more solar panels and upgrade the battery capacity to support the additional power consumption by the photocell sensor.

Connect the Accessories

ERM12 External Receiver

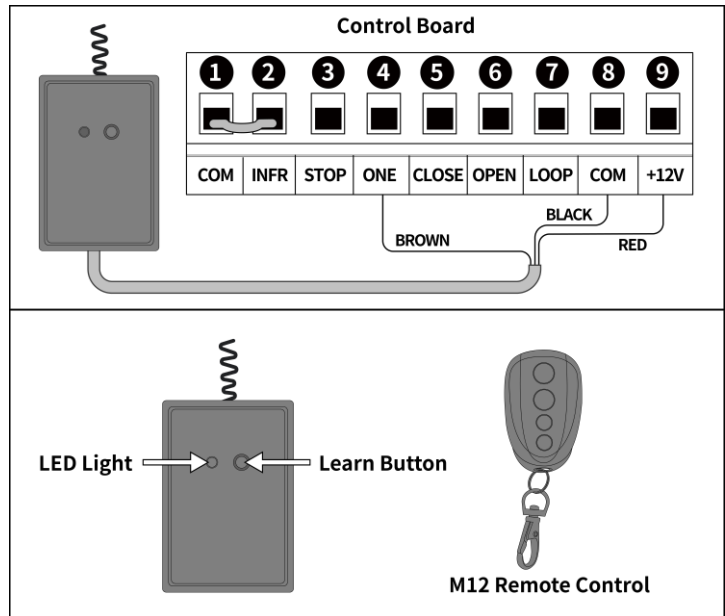
Allows up to 250 remotes to be programmed with the gate opener

Wire Connection

- ◆ Turn off the power to the gate opener before wire connection.
- ◆ Connect the BROWN wire to control board terminal ④ “ONE” .
- ◆ Connect the BLACK wire to control board terminal ⑧ “COM” .
- ◆ Connect the RED wire to control board terminal ⑨ “+12V” .

Program the Remote Control with the Receiver

- ◆ Before programming, ensure the M12 remote control has been erased from the control board to avoid conflicts.
- ◆ Press and release the Learn Button on the receiver, the LED light will turn ON. Press the remote control button you want to program once, then press it again after the LED on the remote turns off.
- ◆ The LED Light on the receiver will flash for 3 seconds and then turn OFF indicating successfully programming.



NOTE: If the gate opener is ONLY solar powered, please add more solar panels and upgrade the battery capacity to support the additional power consumption by the receiver.

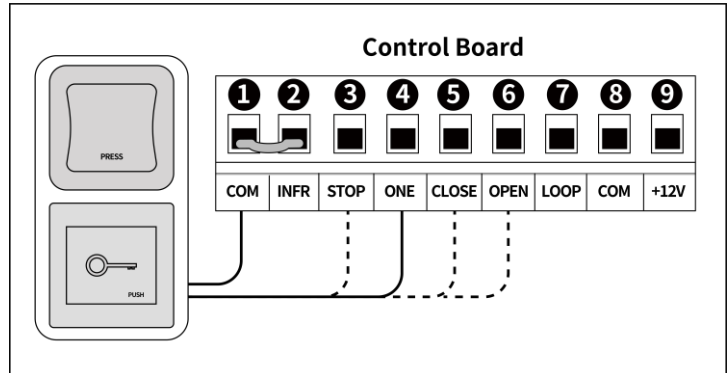
Connect the Accessories

TC148 Waterproof Wall Push Button & TC147 Wall Push Button

Open/close gate by pressing wired button

Wire Connection

- ◆ Turn off the power to the gate opener before wire connection.
- ◆ Connect the push button to control board terminal ① “COM” and terminal ④ “ONE”, regardless of the polarity. Each press of the button will cycle the gate through **OPEN, STOP, CLOSE, STOP, AND OPEN**.
- ◆ Connect the push button to control board terminal ① “COM” and terminal ③ “STOP”, regardless of the polarity. Pressing the button will only **STOP** the gate.
- ◆ Connect the push button to control board terminal ① “COM” and terminal ⑤ “CLOSE”, regardless of the polarity. Pressing the button will only **CLOSE** the gate.
- ◆ Connect the push button to control board terminal ① “COM” and terminal ⑥ “OPEN”, regardless of the polarity. Pressing the button will only **OPEN** the gate.



NOTE: A 2C x 0.3 mm² (22AWG) cable is required for the wire connection, but it is NOT included.

Maintenance and Replacement Parts

Maintenance

WARNING

Disconnect the AC power to the gate opener before routine inspections and lubrication.

Routine Inspections

- ◆ **Inspect the Gate:** Look for any signs of wear or damage on the gate and guide tracks.
- ◆ **Check the Gate Opener:** Ensure that the opener is securely attached to the concrete pad. Tighten any loose bolts and screws.
- ◆ **Examine Cables and Wires:** Check that all cables and wires are intact and free from corrosion. Ensure that the opener is properly earthed and the wire is securely connected.

Cleaning and Lubrication

Keep the gate opener and the surrounding area clean to prevent the accumulation of dirt, dust, leaves, and debris. Use a clean, dry cloth to wipe the gate opener shafts, gears, and chain, and lubricate them as needed.

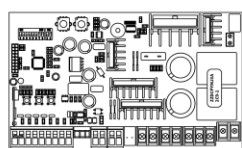
Battery Maintenance

Regularly check for battery leakage and ensure that its casing is intact. Monitor the battery voltage through the solar controller or control board. Replace the battery every 2-3 years and recycle old batteries properly.

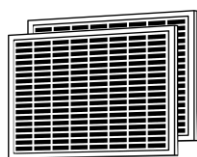
Obstruction Test

The gate must stop or reverse upon contact with a solid object. Perform the obstruction test monthly, or whenever you set up the control board or after a power outage. Failure to properly adjust and retest the gate opener can increase the risk of injury or death.

Replacement Parts



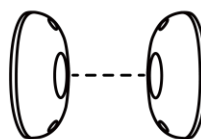
ZZDCPYMJ3A
Control Board



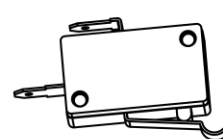
TSQ20W 20W
Solar Panel Kit



TCS3 Solar Charge
Controller



TC102 Infrared
Photocell Sensor

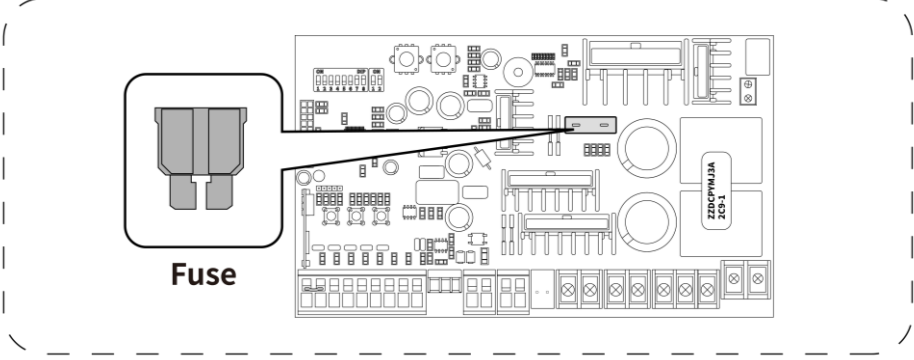


MS8013A1BBC1
Limit switch

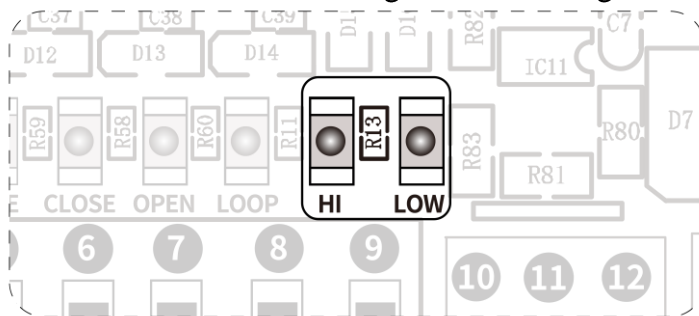
* Available on the TOPENS website (www.topens.com) and Amazon.

Troubleshooting

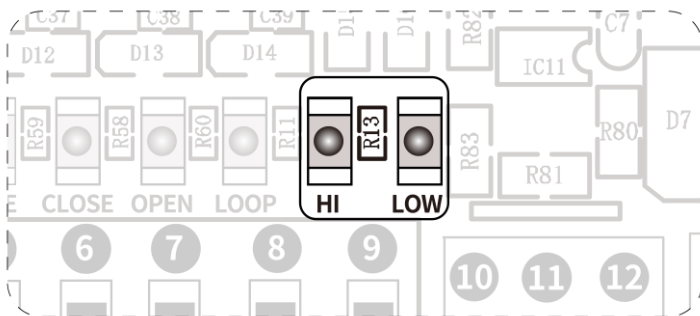
If your gate opener does not function properly after installation, please follow the steps below before contacting us for assistance. This guide provides common troubleshooting steps to help resolve issues efficiently. For further assistance, please feel free to contact us through our website at www.topens.com.

Symptom	Possible Solution(s)
The opener does not run. Power LED is OFF.	Step 1 Check Power Supply and Transformer Output (if connected with AC electricity): ◆ Ensure that the power supply is connected properly and securely. ◆ Verify that the output voltage of the transformer is 24VAC. If the voltage is 0, the transformer may be overheated or damaged. Turn off the power, allow the board to cool for several minutes, then reset. Replace the transformer if the issue persists. ◆ Connect the Live and Neutral wire of the Power Cord to Control Board: Directly connect the live and neutral wires of the power cord to the control board terminal “AC INPUT” . Please turn off the power before making any wire connections. Step 2 Examine Control Board Fuse: Inspect the control board fuse and replace it with the backup fuse that comes with the gate opener if it is burnt out. The fuse type is 40 Amp standard automotive blade fuse.  Step 3 Observe Solar Controller and Check Battery Voltage (if connected with battery): ◆ For the opener powered by battery and solar panels with the built-in solar controller: if the LOAD LED on the solar controller is OFF and the battery voltage is below 18VDC, wait until the batteries are fully charged. If the LED is OFF and the battery voltage is above 23VDC (normal), the solar controller may be faulty. ◆ For the opener solely powered by battery and AC electricity, check the battery voltage directly to ensure it is above 23VDC. If it is not, wait until the batteries are fully charged. ◆ Connect the Battery to Control Board: Directly connect the battery to the control board terminal “+24V BATT-” . Please turn off the power before making any wire connections.

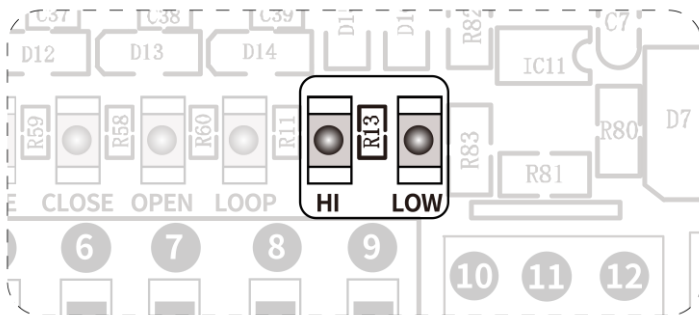
Troubleshooting

Symptom	Possible Solution(s)
The opener does not run. Power LED is OFF. (continued)	Step 4 Check Control Board: Inspect the control board and replace it if needed. Step 5 Check the Power Switch on the Gate Opener: Ensure that the power switch is turned on, and check for any loose connections in the cables connected to the power switch. Step 6 Check the Cable Connected to the Control Board Terminals “AC-INPUT” , “AC-OUTPUT” , “+24V BATT-” and “AC 24V” : Inspect the pre-connected cables attached to the control board terminals to check for any loose connections.
The opener does not run. Power LED is ON.	Step 1 Check Remote Control: Ensure the remote control is functioning properly. Confirm that the indicator light is ON, the remote is within the effective control range (<200 feet), and it is programmed with the opener. Step 2 Check Photocell Sensor Function: If a photocell sensor is used as a secondary entrapment prevention device, ensure its beam is not blocked. If no photocell sensor is installed, short the terminals 1 and 2 on the control board with a jumper wire. Step 3 Test the Motor: Disengage the clutch and disconnect the motor wires from terminals ②⑥ and ②⑦ “+MOTOR-” . Connect the wires directly to a 24V battery. The motor should run. Reverse the wire connections to the battery, and the motor should run in the opposite direction. If the motor operates in both directions, proceed to check the other components. Step 4 Check the Micro Switch: Move the gate to the open and closed positions to check whether the micro switch can detect the limit switch adjustment nuts, and observe whether the HI and LOW LED on the control board turn OFF. The HI LED indicates the sensing status of the left nut, while the LOW LED indicates the sensing status of the right nut.  Step 5 Check the Limit Switch Terminals: Disconnect the limit switch wires from terminals ⑩ “HI” , ⑪ “COM” , and ⑫ “LOW” on the control board. Use two jumper wires to short these three terminals simultaneously. Press the remote to operate the opener. If the motor runs normally in both directions, replace the limit switch. Step 6 Check Control Board: Inspect the control board and replace it if needed.

Troubleshooting

Symptom	Possible Solution(s)
The gate starts but immediately stops or reverses.	Step 1 Check the Clutch: Confirm that the clutch is properly engaged. Step 2 Adjust Stall Force: Ensure that the open or close stall force is appropriate and not too low. Adjust Potentiometer B to increase the force. Step 3 Check for Free Sliding: Disconnect the gate from the opener and ensure that it slides freely without any obstruction. Step 4 Check Control Board: Inspect the control board and replace it if needed.
Gate automatically opens, but does not automatically close.	Check Motor Open Direction: The motor open direction is incorrect. Ensure that DIP switch #8 on the gate opener control board is correctly set according to the installation for “Left Open” or “Right Open” .
The gate opens but fails to close.	Step 1 Check Photocell Sensor Blockage: If a photocell sensor is installed, ensure the sensor beam is not obstructed. Clear any objects blocking the photocell sensor. Step 2 Check the Jumper Wire: If a photocell sensor is not installed, make sure the control board terminals ① “COM” and ② “INFR” are shorted by a jumper wire. If the jumper wire is missing or faulty, replace it with a new one to short the terminals. Step 3 Check the Micro Switch: Move the gate to the open and closed positions to check whether the micro switch can detect the limit switch adjustment nuts, and observe whether the HI and LOW LED on the control board turn OFF. The HI LED indicates the sensing status of the left nut, while the LOW LED indicates the sensing status of the right nut.  Step 4 Check the Limit Switch Terminals: Disconnect the limit switch wires from terminals ⑩ “HI” , ⑪ “COM” , and ⑫ “LOW” on the control board. Use two jumper wires to short these three terminals simultaneously. Press the remote to operate the opener. If the motor runs normally in both directions, replace the limit switch. Step 5 Check Control Board: Inspect the control board and replace it if needed.

Troubleshooting

Symptom	Possible Solution(s)
Soft stop function is abnormal.	Step 1 Redo Travel Learning: Follow the instructions on DIP Switch Settings section to redo the travel learning process and reactivate the soft stop function. Step 2 Check the Micro Switch: Move the gate to the open and closed positions to check whether the micro switch can detect the limit switch adjustment nuts, and observe whether the HI and LOW LED on the control board turn OFF. The HI LED indicates the sensing status of the left nut, while the LOW LED indicates the sensing status of the right nut.  Step 3 Check the Limit Switch Terminals: Disconnect the limit switch wires from terminals ⑩ “HI” , ⑪ “COM” , and ⑫ “LOW” on the control board. Use two jumper wires to short these three terminals simultaneously. Press the remote to operate the opener. If the motor runs normally in both directions, replace the limit switch. Step 4 Adjust Soft Stop Speed: If gate inertia is high during opening and closing, decrease the soft stop speed by adjusting Potentiometer A. Step 5 Check Control Board: Inspect the control board and replace it if needed.
The gate opens randomly.	Step 1 Check DIP Switch Setting: Set DIP Switch #8 to ON for a left-opening gate and OFF for a right-opening gate. Step 2 Isolate the Issue with Wired Accessories: Disconnect all wired accessories from the control board and disable the photocell sensor function by shorting the terminals 1 and 2 on the control board with a jumper wire. Test the gate operation. If the issue is resolved, reconnect the accessories one by one to identify the problem. Step 3 Reprogram Remote Controls: Clear all existing remote codes from the control board and reprogram the remote controls. Step 4 Check Control Board: Inspect the control board and replace it if needed.

Troubleshooting

Symptom	Possible Solution(s)
Midway mode function is disabled.	Step 1 Check DIP Switch Setting: Set DIP Switch #8 to ON for a left-opening gate and OFF for a right-opening gate. Step 2 Verify Limit Switch Adjustment Nuts Position: Check if the limit switch is properly sensed by the closing adjustment nut when the gate is fully closed. Adjust the nut's position to ensure accurate sensing. Step 3 Replace Remote Control: Use a new remote control and test again. Step 4 Check Control Board: Inspect the control board and replace it if needed.



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Web: Http://www.agc-cert.com

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Windpower Industrial Park, No.9 Zhulin Road, Fozuling
Street, Wuhan East Lake High-tech Development Zone,
China

Attestation of Conformity

Registration No AGC-WH00066220632E2

Applicant Hangzhou Sanford Technology Co., Ltd
Room 106, Building 4, 8 Shengdi Road, Yuhang Town, Hangzhou City, Zhejiang Province,
China

Product Designation Sliding gate opener

Brand Name /

Model / Series Models DLC2000S

Manufacturer Hangzhou Sanford Technology Co., Ltd
Room 106, Building 4, 8 Shengdi Road, Yuhang Town, Hangzhou City, Zhejiang Province,
China

Requirement	Applied Standards	Document Evidence	Result
EMC Directive	EN 55014-1:2017+A11:2020 EN 55014-2:2015 EN IEC 61000-3-2:2019 EN 61000-3-3:2013+A1:2019	Test Report: AGC-WH00066220632EE01	Conform



Bram Wu
Signed by General Manager(Bram Wu)
Issue Date: August 16, 2022

This Attestation of Conformity is recognized by Attestation of Global Compliance (Wuhan) Co., Ltd. and made in accordance with the Electromagnetic Compatibility (EMC) Directive 2014/30/EU. The attestation doesn't imply assessment of the production. The Applicant of the attestation is authorized to use this attestation in connection with EC declaration of conformity to the Directive. The attestation is only applicable to the equipments described above. This attestation shall not be re-produced except in full without the written approval of Attestation of Global Compliance (Wuhan) Co., Ltd.

Note: This attestation is part of the full test report(s) and should be used in conjunction with it.

Version: 1.0



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China

Attestation of Conformity

Registration No. AGC-WH00066220632S4

Applicant Hangzhou Sanford Technology Co., Ltd.
Room 106, Building 4, 8 Shengdi Road, Yuhang Town, Hangzhou City, Zhejiang
Province, China

Product Designation Sliding gate opener

Brand Name /

Model / Series Models DLC2000S

Manufacturer Hangzhou Sanford Technology Co., Ltd.
Room 106, Building 4, 8 Shengdi Road, Yuhang Town, Hangzhou City, Zhejiang
Province, China

Requirement	Applied Standards	Document Evidence	Result
LVD Directive	EN 60335-2-103:2015, EN 60335-1:2012+ A11:2014 +A13:2017+ A1:2019+A2:2019+ A14:2019 EN 62233:2008	Test Report: AGC-WH00066220632ES01	Conform



Brian Wu

Signed by General Manager(Brian Wu)

Issue Date: August 9, 2022



This Attestation of Conformity is recognized by Attestation of Global Compliance (Wuhan) Co., Ltd. and made in accordance with the Low Voltage Directive 2014/35/EU. The attestation doesn't imply assessment of the production. The Applicant of the attestation is authorized to use this attestation in connection with EC declaration of conformity to the Directive. The attestation is only applicable to the equipments described above. This attestation shall not be re-produced except in full without the written approval of Attestation of Global Compliance (Wuhan) Co., Ltd.

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Version: 1.0



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Attestation of Conformity

Registration No AGC-WH00066220632E2

Applicant Hangzhou Sanford Technology Co., Ltd
Room 106, Building 4, 8 Shengdi Road, Yuhang Town, Hangzhou City, Zhejiang Province,
China

Product Designation Sliding gate opener

Brand Name /

Model / Series Models DLC2000S

Manufacturer Hangzhou Sanford Technology Co., Ltd
Room 106, Building 4, 8 Shengdi Road, Yuhang Town, Hangzhou City, Zhejiang Province,
China

Requirement	Applied Standards	Document Evidence	Result
Electromagnetic Compatibility Regulations 2016	BS EN 55014-1:2017+A11:2020 BS EN 55014-2:2015 BS EN IEC 61000-3-2:2019 BS EN 61000-3-3:2013+A1:2019	Test Report: AGC-WH00066220632BE01	Conform



Signed by General Manager(Bram Wu)
Issue Date: August 16, 2022

Recognized by Attestation of Global Compliance (Wuhan) Co., Ltd. in accordance with the Electromagnetic Compatibility Regulations 2016. The attestation doesn't imply assessment of the production. The applicant of the attestation is authorized to use this attestation in connection with UK declaration of conformity to the regulation. The attestation is only applicable to the equipment described above. This attestation shall not be re-produced without the written approval of Attestation of Global Compliance (Wuhan) Co., Ltd.

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Street, Wuhan East Lake High-tech Development Zone,
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Attestation of Conformity

Registration No. AGC-WH00066220632B4

Applicant Hangzhou Sanford Technology Co., Ltd.
Room 106, Building 4, 8 Shengdi Road, Yuhang Town, Hangzhou City, Zhejiang
Province, China

Product Designation Sliding gate opener

Brand Name /

Model / Series Models DLC2000S

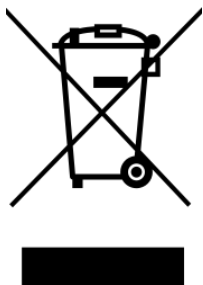
Manufacturer Hangzhou Sanford Technology Co., Ltd.
Room 106, Building 4, 8 Shengdi Road, Yuhang Town, Hangzhou City, Zhejiang
Province, China

Requirement	Applied Standards	Document Evidence	Result
Electrical Equipment (Safety) Regulations 2016	BSEN 60335-2-103:2015, BSEN 60335-1:2012+ A11:2014+A13:2017+ A1:2019+A2:2019+ A14:2019 BSEN 62233:2008	Test Report: AGC-WH00066220632BS01	Conform



Signed by General Manager(Bram Wu)
Issue Date: August 9, 2022

Recognized by Attestation of Global Compliance (Wuhan) Co., Ltd. in accordance with the Electrical Equipment (Safety) Regulations 2016. The attestation doesn't imply assessment of the production. The applicant of the attestation is authorized to use this attestation in connection with UK declaration of conformity to the regulation. The attestation is only applicable to the equipment described above. This attestation shall not be re-produced without the written approval of Attestation of Global Compliance (Wuhan) Co., Ltd.
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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.

Feedback & Review

**Your comments and suggestions are important to us
as they help us provide the best possible service.**

Should you have any need to contact us, the info below will help you get in touch:



TOPENS Website

www.topens.com

Contact Us:

E-mail: support@topens.com

***Kindly include your purchase channel, order #, gate information, issue description
and your contact information. All your concerns will be replied within 24 hours.***

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