

Sliding Gate Operator

User's Manual

Model:DKC301DC

WARNING!

ONLY QUALIFIED AND EXPERIENCED TECHNICIANS SHOULD ATTEMPT INSTALLATION OR SERVICE TO THIS UNIT, OTHERWISE, SERIOUS PERSONAL INJURY, DEATH, OR PROPERTY DAMAGE MAY OCCUR. PLEASE KEEP THESE INSTRUCTIONS FOR FURTHER REFERENCE.

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1. Important Safety Information

Carefully read and follow all safety precaution and warnings before attempting to install and use this operator, incorrect installation can lead to severe injury.

- The gate operator should be installed by a qualified technician; otherwise, serious personal injury or property damage may occur.
- The auto-reverse function must be checked during installation to ensure that the gate can auto-reverse in the event of obstruction.
- This auto-reverse function should be regularly inspected and adjusted, if necessary.
- When opening or closing the gate, do not attempt to walk or drive through the gate.
- Children should not be allowed to play near or operate automatic gates.
- The automatic gate operator must be grounded.
- Install the gate operator on the inside of the property, DO NOT install it on the outside of the property where the public has access to it.
- Be careful when in close proximity to moving parts where hands or fingers could be pinched.
- Do not allow control devices to be placed so that a person can access them by reaching through the gate.
- In the event of power failure, an emergency release key allows you to operate the gate manually.
- The operator should be switched off before repairing it or opening its cover.
- Please erase and reprogram the code after installing the operator.
- Our company reserves the right to change the design and specification without prior notification.

2. Main Technical Parameters

Tab.1

Model	DKC301DC	
Power supply	AC220(1±10%), 50Hz	AC110(1±10%), 60Hz
Motor	24V 100W	
Gear teeth	16	
Gate moving speed	10m/min	
Output torque	8N.m	
Output speed	50rpm	
Gate weight	≤300kg	
Control board	KZB21	
Built-in battery	12V 2.6Ah*2	
Three optional limit switch (According to your order)	Encoder limit switch Magnetic limit switch Spring limit switch	

3. Main Features

- The device is used to drive sliding gate.
- For your safety, the gate operator will stop and reverse if it was obstructed on closing and stop when it was obstructed on opening.
- User programmable and user erasable remote codes.
- Infrared terminal (N.C) is supplied to use.
- Auto-close feature is available for this operator.
- Pedestrian mode.
- Manual key release design for emergency purposes.

4. Installation and Adjustment

The DKC301DC rack-driven gate operator operates by forcing a drive rack past a drive gear. The entire configuration is shown in Fig.1. The gate operator must be installed on the inside of the gate.

Gate preparation

Be sure the gate is properly installed and slides smoothly before installing the sliding gate operator. The gate must be plumb, level, and move freely.

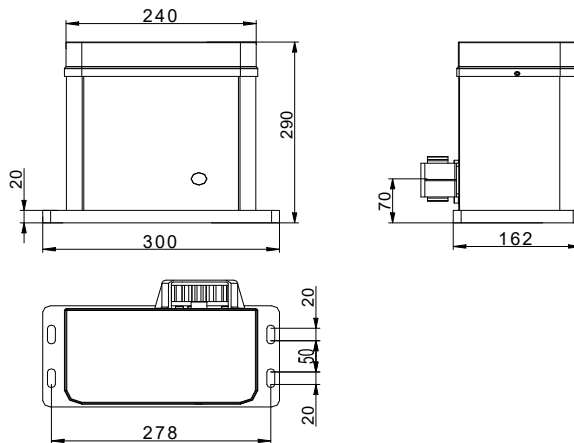


Fig.1 Gate operator

Conduit

In order to protect the wires, use PVC conduit for wires, conduit must be set into the concrete when it is poured. Wires within the conduit shall be located or protected so that no damage can result from contact with any rough or sharp part.

Concrete pad

The base unit of the gate operator requires a concrete pad in order to maintain proper stability. The concrete pad should be approximately 300mm x 200mm x 200mm deep in order to provide

for adequate operation. The pad should be 70mm above finish grade. Be sure to locate the pad so that it will not interfere with the gate.

Bolts

You can use the bolts and nuts that are provided with the operator see Fig.2. These anchors must be set into the concrete when it is poured, or you can use wedge expansion bolts.

Operator base

Mount the gate operator base to the concrete pad. Verify that the operator is leveled properly.

Operator

Mount two pieces of plates and gate operator to the base using nuts and washers.

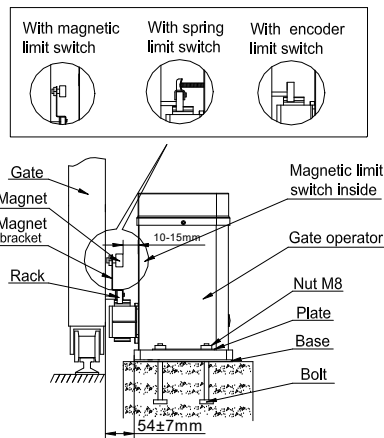


Fig.2

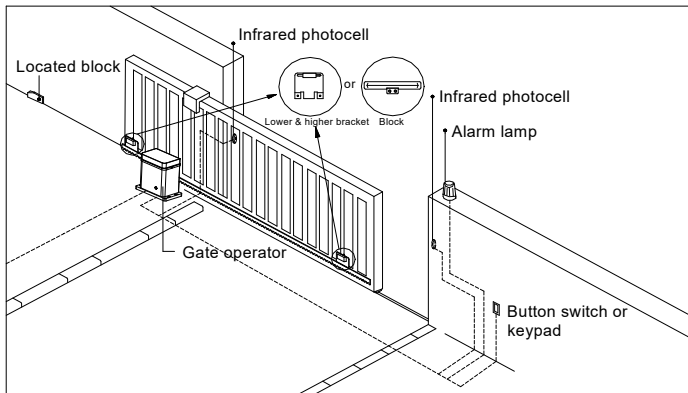
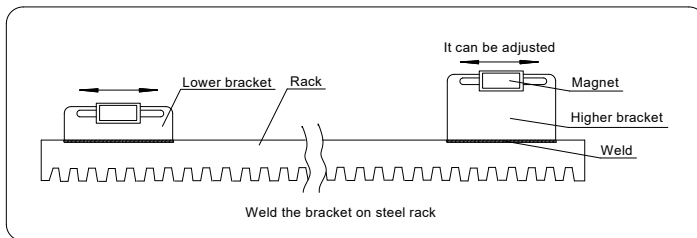
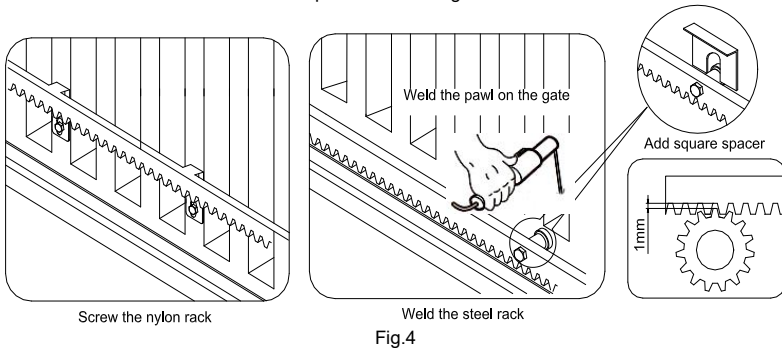


Fig.3

Installing the rack (see Fig.4)

Weld the steel rack

- Manually move the gate to its closing position.
- Place the three threaded pawls (in the same package with rack) on the rack element.
- Lay the first piece of rack on the gear and weld the first threaded pawl on the gate.
- Move the gate manually, checking if the rack is resting on the gear, and weld the second and third pawls.
- The space between rack and gear is about 1mm.
- Bring another rack element near to the previous one. Move the gate manually and weld the three pawls as the first rack, thus proceeding until the gate is fully covered.
- When the rack has been installed, to ensure it meshes correctly with the gear.
- If necessary, assemble the spacer between the rack and pawl to synchronise the teeth of the two rack elements and keep racks in a straight line.



Magnets for limit switch

Install the magnet as shown in Fig.5. The magnet and limit switch are used to control the position of the gate. When the magnet is installed, release the gear clutch and push the sliding gate manually to pre-determine the position. Weld or fit the magnet bracket to the rack and then tighten the gear clutch. The lower bracket is for open position and higher bracket is for close position. Finally adjust the magnet to the proper position by moving the gate with the motor. The magnet should be 10-15mm away from the magnetic limit switch. If it is too far

away, the switch will fail to work. Adjust the position of the magnets until the positions of the opening and closing meet the requirement.

Important Note: Please note the two magnet brackets (fixed plate) are different: one is higher and another is lower. Verify and if necessary exchange the two brackets position. Also if necessary exchange the limit switch wires CL (close) and OP (open). Another common problem is there are two reed switches inside the magnetic limit switch: one is upper and another is lower. The magnet position can be installed in the middle so it inducts both reed switches. **Solution: adjust the magnet upper or lower.**

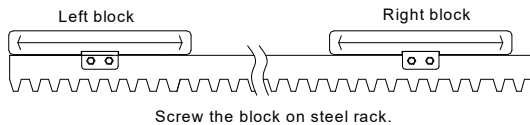


Fig.6

Spring limit switch

Install the block as shown in Fig.6. Release the gear clutch with the key and push the sliding gate manually to pre-determine the position, screw the block to the rack and then tighten the gear clutch with the key. Moving the gate electrically, adjust the block to the proper position until the position of the opening and closing meet the requirement.

Manual operation

In case of power failure use manual release key to open or close gate manually, use the release key as follow:

- Fit the release key in the lock.
- Turn the key 6-8 circles anticlockwise see Fig.7.
- Open or close the gate manually.
- Turn the key 6-8 circles clockwise to engage the gate operator.

Note: If the gate bumps the mounting post and cannot be electric opened, move the gate a few inches by hand, thus you can release the gate with the key, open or close the gate manually.

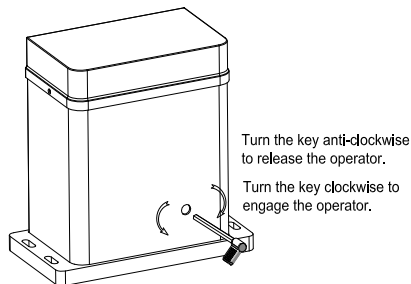


Fig.7

5. Connecting

Make sure the power is OFF before making any electrical connections. Control board included in the gate operator.

SET button: Mode set and confirm function

CODE button: Transmitter set and clear function

OPEN button: Open limit

CLOSE button: Close limit

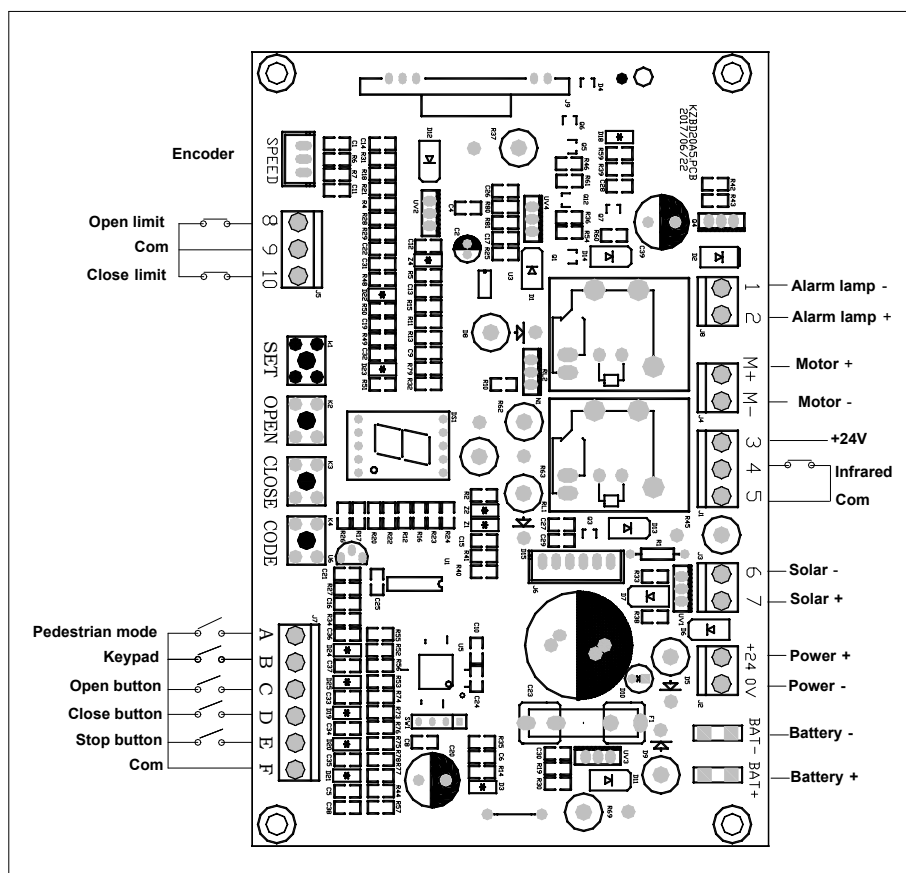


Fig.8 Control board

6. Programming

With power on, The LED will display number from '9' to '1'.

If the gate operator with magnetic limit switch or spring limit switch, this step can be skipped. If the gate operator with encoder limit switch, set open and close positions as follow.

Set open and close positions

1. Press and hold **SET** (see Fig.8 control board) until number '1' is indicated on the LED display.
2. Press and hold **OPEN** to set open position, release the button until the gate has reached the desired position. (You also can press **CLOSE** to close the gate, **OPEN** and **CLOSE** can be used to fine adjust the door position.)
3. Press the **SET** to confirm the open position, now number '2' is indicated on the LED display.
4. Press and hold **CLOSE** to set close position, release the button until the gate has reached the desired position. (You also can press **OPEN** to open the gate, **OPEN** and **CLOSE** can be used to fine adjust the door position.)
5. Press the **SET** to confirm the close position, '11' is indicated on the LED display.

Note:

- Set the open position first.
- Press and hold **OPEN**, If the gate does not move in the OPEN direction, then you will need to reverse the motor operating direction, you can do this by exchanging motor wires.
- If '—' is indicated on the LED display, reprogram the open and close positions.
- Short the infrared terminal block (see Fig.8 terminal 4 and 5) if the gate only runs in open direction.

Setting obstruction force (level1- level9 adjustable)

If the gate meets an obstruction during closing, it will stop and reverse about 15cm~20cm.

1. Press and hold **SET** until the number '3' appears on the LED display, release the **SET**.
2. Number '1' (factory preset) appears on the LED display.
3. Press **OPEN** to increase the obstruction force, the maximum force is level 9. Press **CLOSE** to decrease force, the minimum force is level 1.
4. Press **SET** to confirm. '11' is indicated on the LED display.

Automatic close (0~90 seconds adjustable)

1. Press and hold **OPEN** until '—' is indicated on the LED display.
2. Number '0' (factory preset) appears on the LED display.
3. Set timer to '0', the automatic close function will disable.
4. Press **OPEN** to increase the auto close time (1-10seconds, 2-20seconds...9-90seconds), press **CLOSE** to decrease time.
5. Press **SET** to confirm the setting. '11' is indicated on the LED display.

NOTE: Automatic close function is available only when the door is in fully opened position.

Remote control

- The remote control works in a single channel mode. It has four buttons.
- The function of button 1, button 2 and button 4 are the same. With each press of the remote control button which has been programmed, the gate will close, stop, open or stop cycle. Button 3 is available to set pedestrian mode.
- If you have programmed/learned one button, the other buttons also have been programmed, you may not repeat the program/learn process if you want to use more than one button.

Adding extra transmitter (learn)

1. Press and hold **CODE**, a dot is indicated on the LED display.
2. Press the transmitter button which you want to use (button 1, 2, 4), then press the same button again. Note: button 3 is only for pedestrian mode.
3. The dot on the LED display will flash then turn off.
4. The learning process is finished.
5. Up to 20 transmitters may be used.

Erase transmitter

Press and hold **CODE** until a dot turns on and then turns off. This indicates that all the transmitters have been erased completely.

Set width of pedestrian mode

1. Press and hold **SET**, release the **SET** when the number '4' appears on the LED display.
2. Number '1' (factory preset) is indicated on the LED display.
3. Press **OPEN** to increase the width of pedestrian mode (1-70cm, 2-75cm...9-110cm), press **CLOSE** to decrease width.
4. Press **SET** to confirm the setting.

Note : Button 3 of remote control is used for pedestrian mode.

Set auto-close time of pedestrian mode

1. Press and hold **SET**, The LED will display number from '1' to '5', release the **SET** when the number '5' appears on the LED display.
2. Number '0' (factory preset) appears on the LED display.
3. Set timer to '0', the automatic close function of pedestrian mode is disable.
4. Press **OPEN** to increase the auto-close time of pedestrian mode (1-5 seconds, 2-10 seconds...9-45 seconds), press **CLOSE** to decrease time.
5. Press **SET** to confirm the setting.

7. Final Check

Check the power supply, grounding and wiring before running the device.

Release the gear clutch with the release key to determine whether or not the gate can be moved manually. If everything is in good working order, tighten the clutch with the key.

Switch on the power and run the device to ensure that the gate is sliding smoothly.

Adjust the magnet position until the gate opened and closed properly at the limited positions.

8. Maintenance

Keep operator clean at all times.



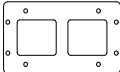

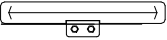


Ensure the operator is well earthed, and correctly terminated.

Regularly grease the wheels and axles to ensure the gate moves smoothly.

9. Packing list

After receiving the product, you should make an unpack-inspection, in which you should check whether the product was damaged. If you have any problem please contact our sales agent.

You should find the following items in our standard packing:

No.	Item	Diagram	Quantity
1	Bolt M8X100		4
2	Nut M8		8
3	Operator base		1
4	Plate		2
5	Block(optional)		2
6	Magnet bracket (optional)		2
7	Transmitter YKF06		2
8	User' s manual		1