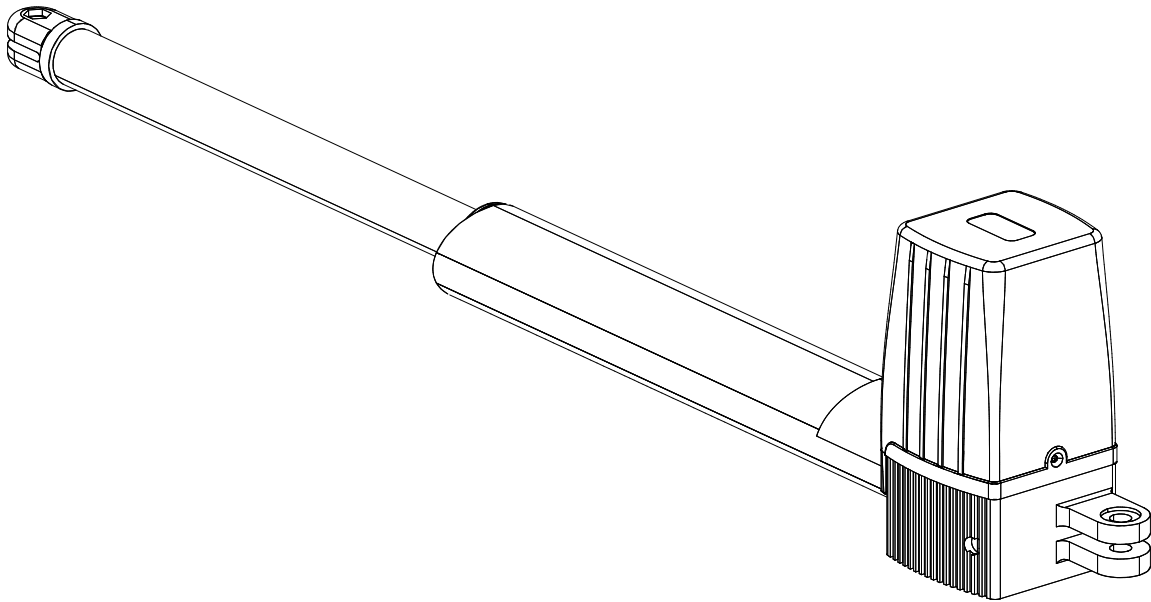

PK300DC/PK350DC Swing Gate Opener User Manual



Dear users,

Thank you for choosing this product. Please read the manual carefully before assembling and using it. Please do not leave out the manual if you send this product to a third party.

1. Safety Instruction



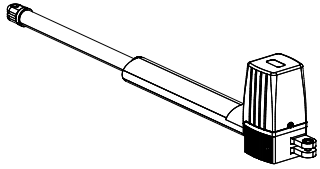
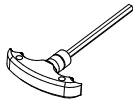
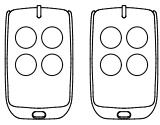
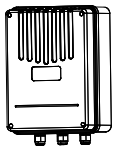
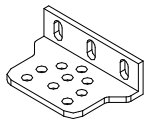
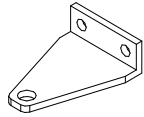
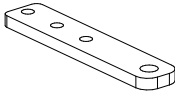

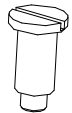
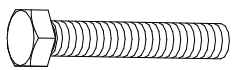
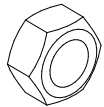
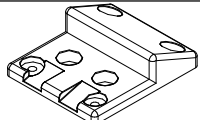
Please ensure that the using power voltage matches with the supply voltage of gate opener (AC110V or AC220V); kids are forbidden to touch the control devices or the remote-control unit.

The remote-control unit is controlled by a single button mode or three button mode (please refer to the instructions of the remote control in accordance with the actual gate opener type). The indicator light on the remote-control unit will flicker when the button on it is pressed. Main engine and gate can be unlocked by disengagement wrench and the gate can move with manual operation after disengagement.

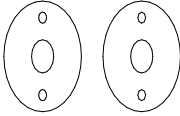
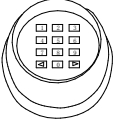
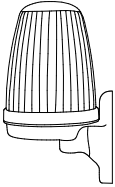
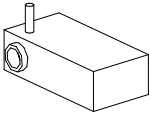
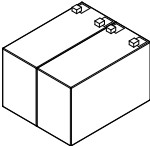
Please ensure that no one is around the main engine or gate when the switch is operated and it is usually demanded to examine the stability of installation. Please temporarily stop using if the main engine needs repairing or regulation.

The installation and maintenance of the products must be carried out by professionals.

2. Packing List (standard)

No.	Picture	Name	Quantity
1		Main engine	2
2		Manual release bar	1
3		Remote control	2
4		Control box	1
5		Wall bracket	4
6		Front mounting bracket	2
7		Connecting bracket	2
8		Mounting screw (short)	2
9		Mounting screw (length)	2
10		Screw M8×25	4
11		Nut M8	8
12		Limit stopper	1

2. Packing List (optional)

No.	Picture	Name	Quantity
1		Infrared sensor	1
2		Wireless keypad	1
3		Alarm lamp	1
4		Electronic lock	1
5		Storage battery	2

3. Technical Parameters

Model	PK300DC	PK350DC
Power supply	220V/50Hz;110V/60Hz	220V/50Hz;110V/60Hz
Motor power	80W	80W
Gate moving speed	18~22 second per 90 (approx)	18~22 second per 90 (approx)
Max.single-leaf weight	300Kg	300Kg
Max.single-leaf length	2.5M	3.0M
Max.piston stroke:	34cm	54cm
Max.force	1500N	1500N
Remote control distance	≥30m	≥30m
Remote control mode	Single button mode	Single button mode
Storage battery (optional)	24V or 12 VDC	24V or 12 VDC
Noise	≤58dB	≤58dB
Working duty	S2, 30min	S2, 30min
Recording of up remote controls	25	25
Frequency	433.92 MHz	433.92 MHz
Working temperature	-20°C - +70°C	-20°C - +70°C
Package weight	17Kg	19Kg

4. Installation

PK300DC/PK350DC swing gate opener is applicable to single leaf gate weight less than 300kg, and length of the single leaf swing gate should be less than 2.5m/3m. The drive mode adopts the worm and worm gear to combine the screw rod transmission. This gate opener must be installed inside the enclosure or yard for protection.

4.1 Installation Drawing

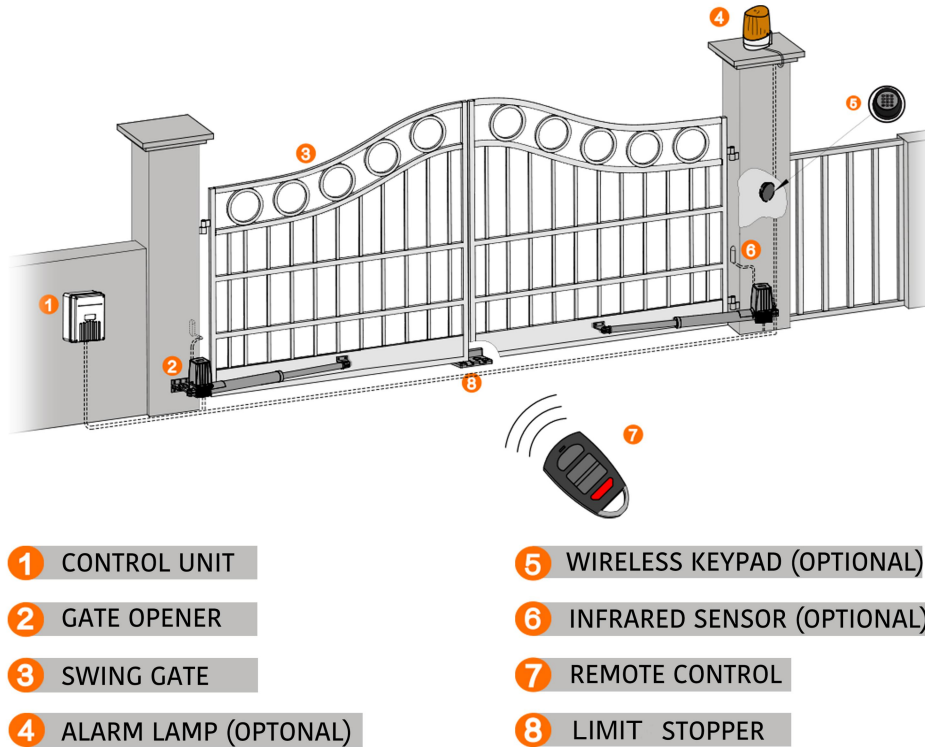
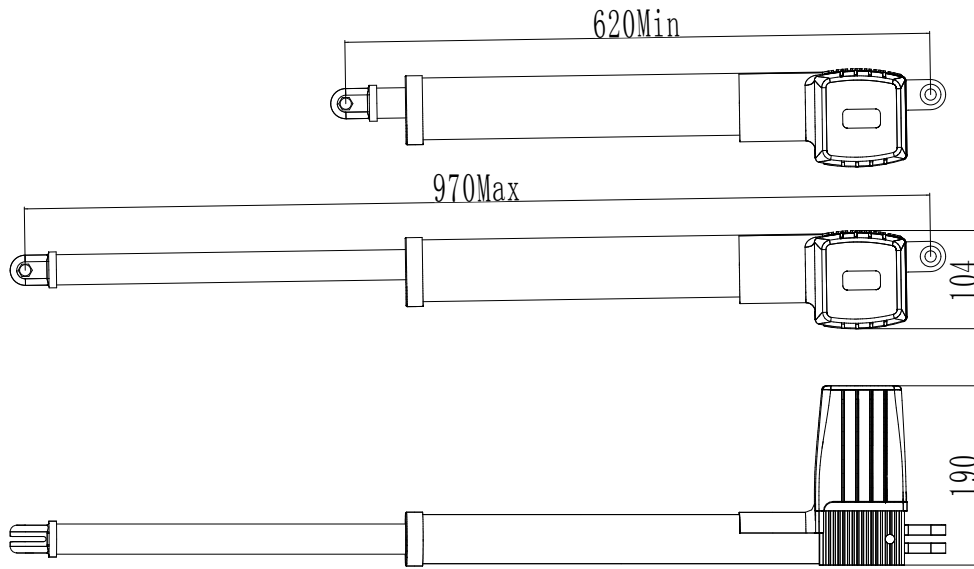


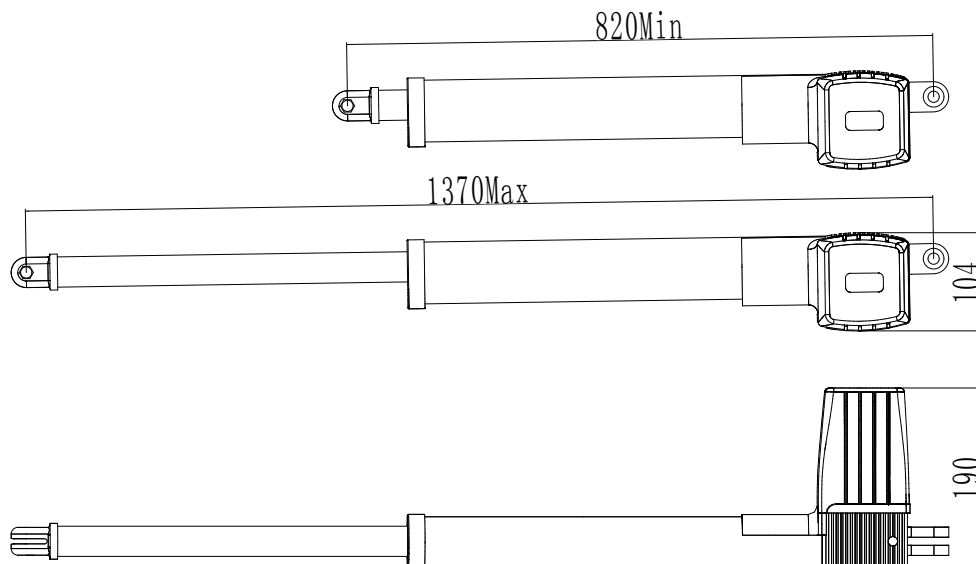
Figure 1

4.2 Size of Main Engine and Accessories

4.2.1 Size of Main Engine



PK300DC



PK350DC

Figure 2

4.2.2 Size of Mounting Plate

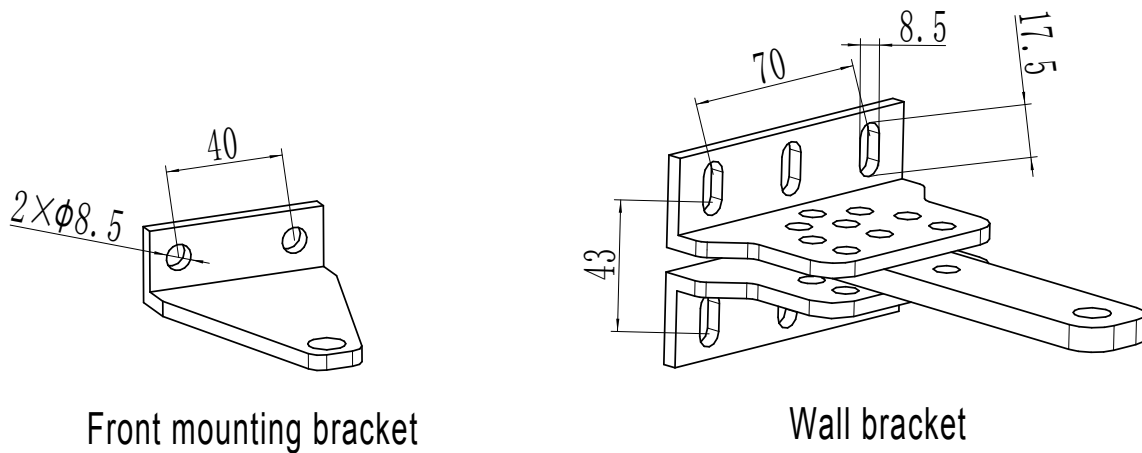


Figure 3

4.3 Installation Steps

4.3.1 Preparation Before Main Engine Installation

- Before installing the door opener, please confirm the correct installation of the door to ensure that the door can be easily manually operated, and the door safety stopper can effectively prevent the door to continue moving.
- Install the electric lock, the distance between the door bottom and ground should be 40-50mm. If not install the electric lock, the distance between door bottom and ground should be ≥ 20 mm;
- The main engine recommended mounting height is about 300 ~ 800mm from the ground, and make sure there are reliable fixed points for mounting brackets.

Cable

In order to ensure the normal operation of the door opener and protect the cable from damage, please use PVC pipe laying motor, power cable, and control cables, and separate two PVC pipes to lay (motor and power cable) and (control cable), respectively.

Mounting brackets

In order to install the PK300DC / PK350DC main engines firmly, recommend to use the expansion screws to fix the mounting brackets.

4.3.2 Accessory

- Before installing the main engine, install the wall bracket on the wall, then fix the connecting bracket, and install the front mounting bracket on the door.

Note: Please detect by gradienter before fixing, to ensure that the front mounting bracket and the connecting bracket in the same level.

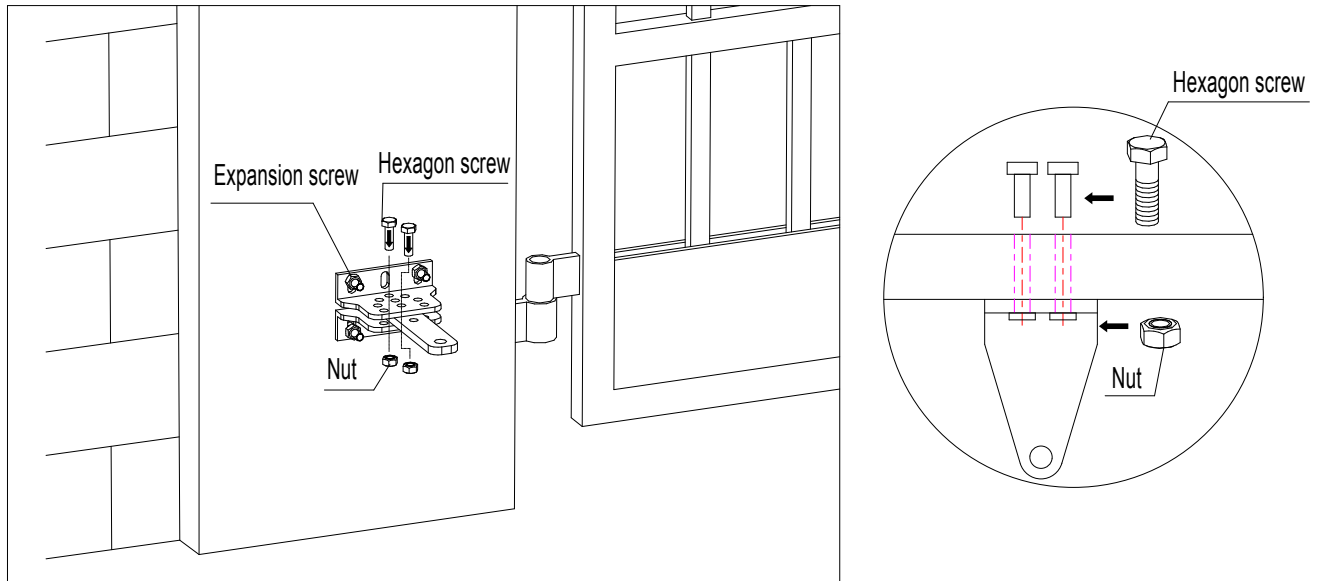


Figure 4

b) The connecting bracket and the wall bracket can be connected according to different conditions, as shown in figure 5.

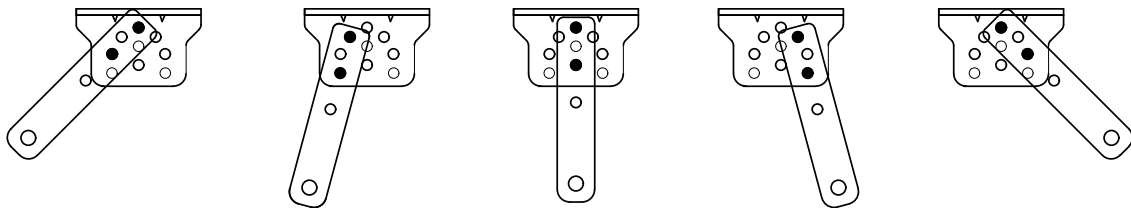


Figure 5

c) Users shall prepare power cables for the control box and main engines, according to different installation environment, the power cable of the control box is not less than 3 cores, and the power cable of the control box with 2 cores. If you need to install electric locks, infrared sensor, alarm lamp, external button switch and other external equipment, please increase corresponding the embedded wire, and the sectional area of electric lock cable core shall not be lower than 1.5mm^2 , others shall not be lower than 0.5mm^2 . The length is determined by the user of according to the situation in the installation site.

Note: The pipe outlet should be facing down to avoid rain water entering the pipe along the cable.

d) Before the installation, please unlock the main engine. Method: Remove the cover, insert the manual release bar, rotate the bar until the release, as shown in Figure 6, then turn the telescopic arm to make it easily stretch.

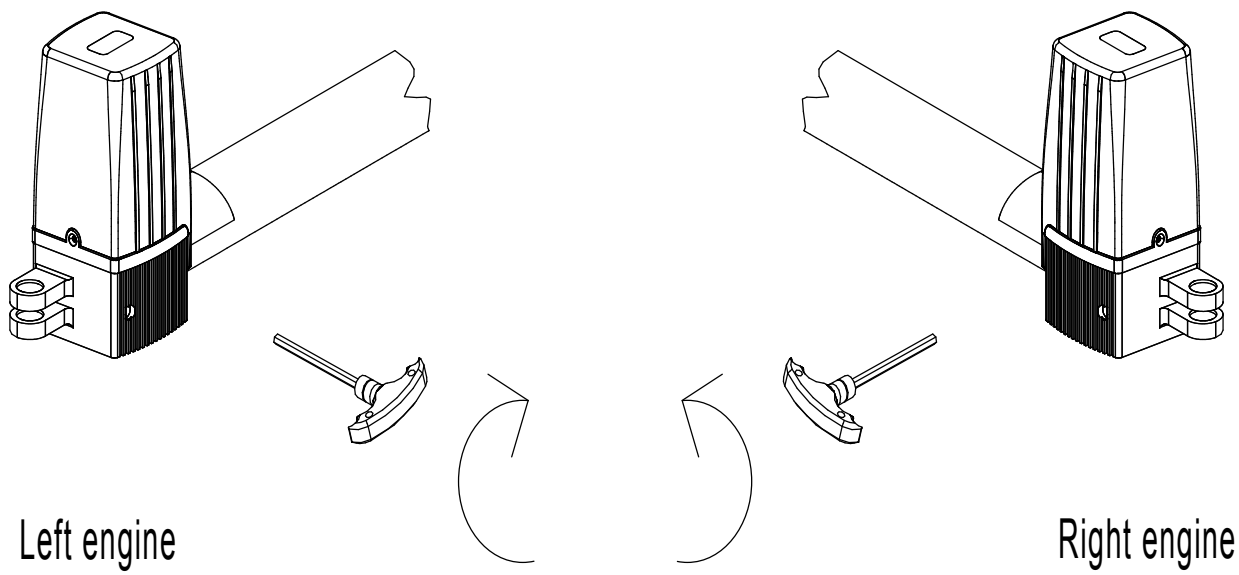


Figure 6

4.3.3 Main Engine Installation

As shown in Figure 7, the tail of the main engine and the connecting bracket are fixed together through the installation of screws, and then manually adjust the telescopic arm to the appropriate length, and finally fix the telescopic arm connector and the front mounting bracket with the installation screws. Pull the door after the completion of the installation to ensure the entire process flexible without jamming.

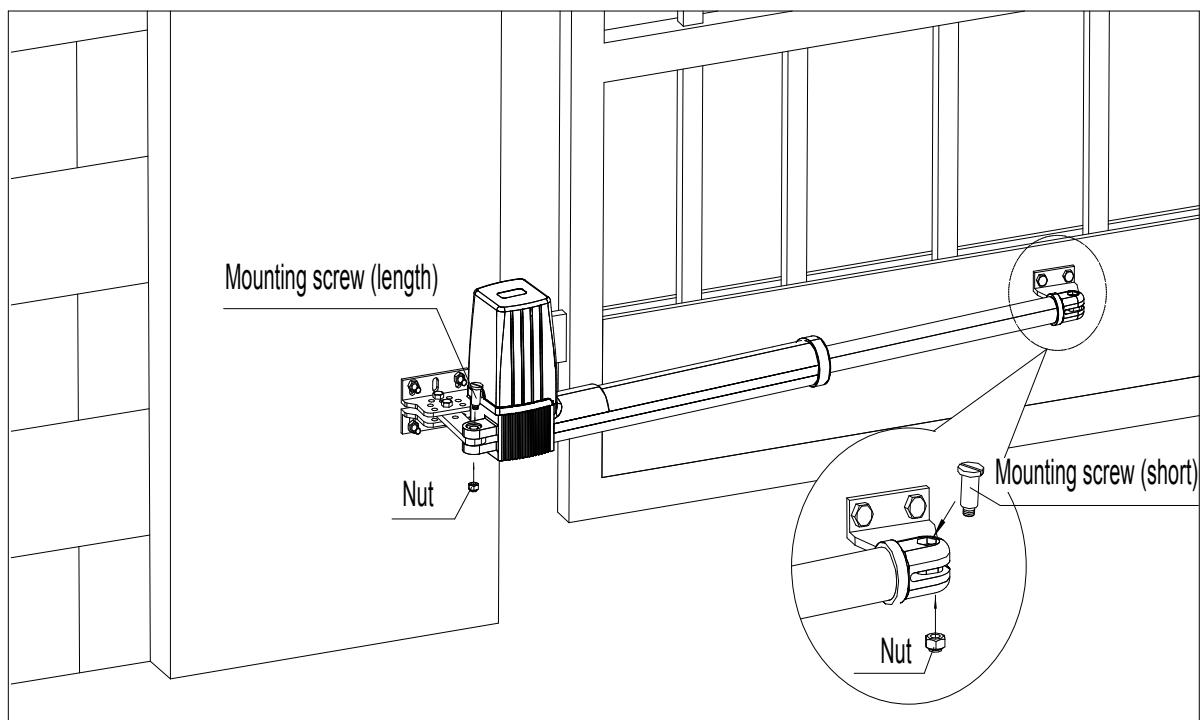


Figure 7

Installation direction: door opens inward (PK300DC)

Note: Limit stopper must be installed

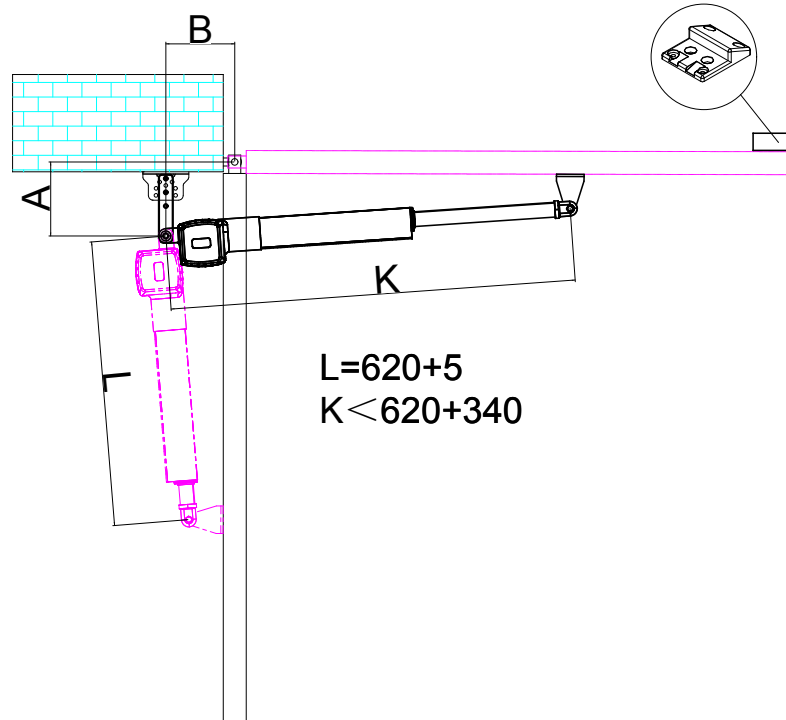


Figure 8

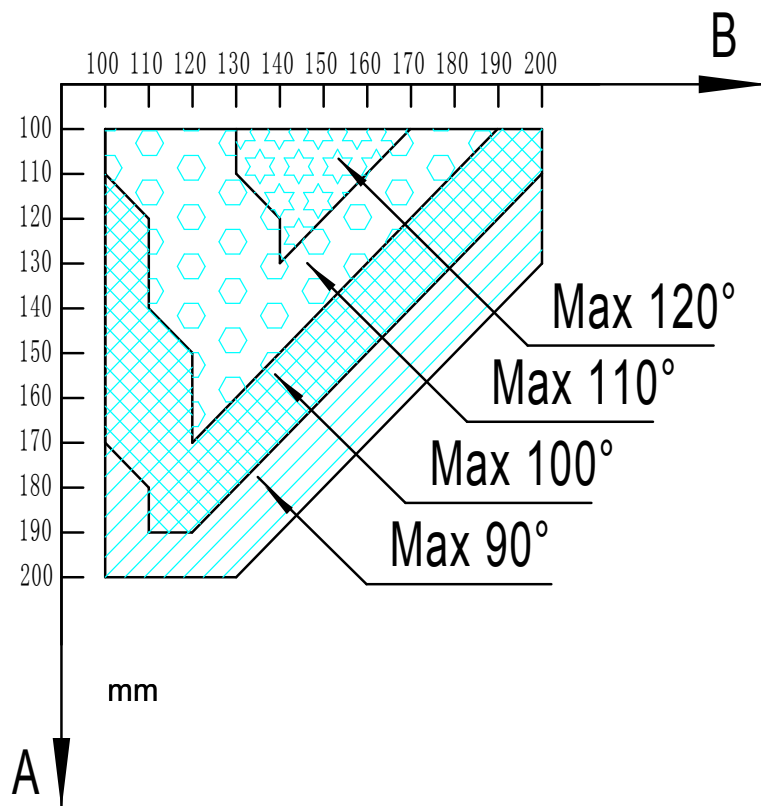
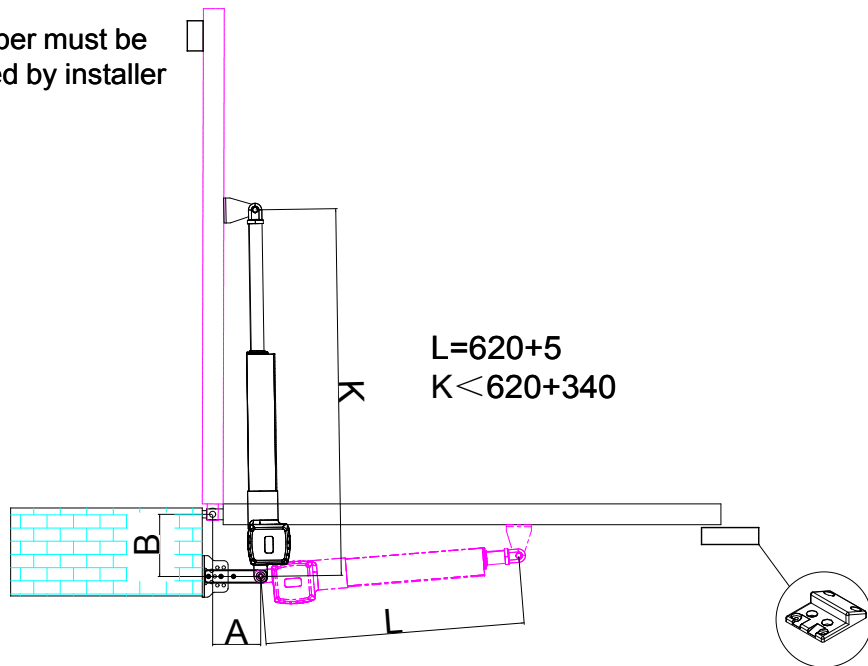


Figure 9

Note: Value B must be close to or equal to the value A to obtain the best mechanical advantage.

Installation direction: door opens outward (PK300DC)

Note: Safety stopper must be installed, is provided by installer



$L=620+5$
 $K < 620+340$

Note: Limit stopper must be installed

Figure 10

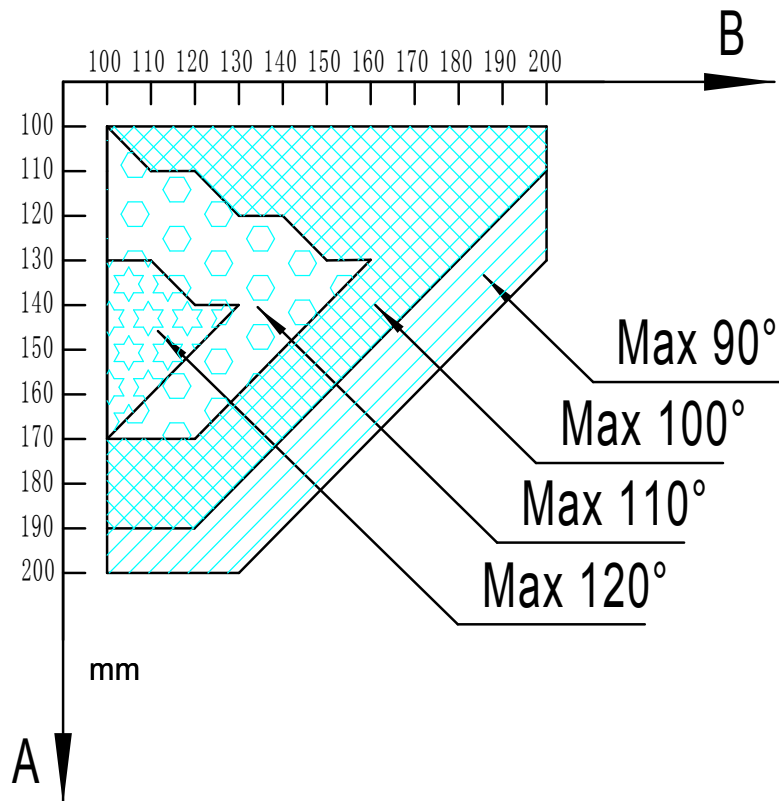
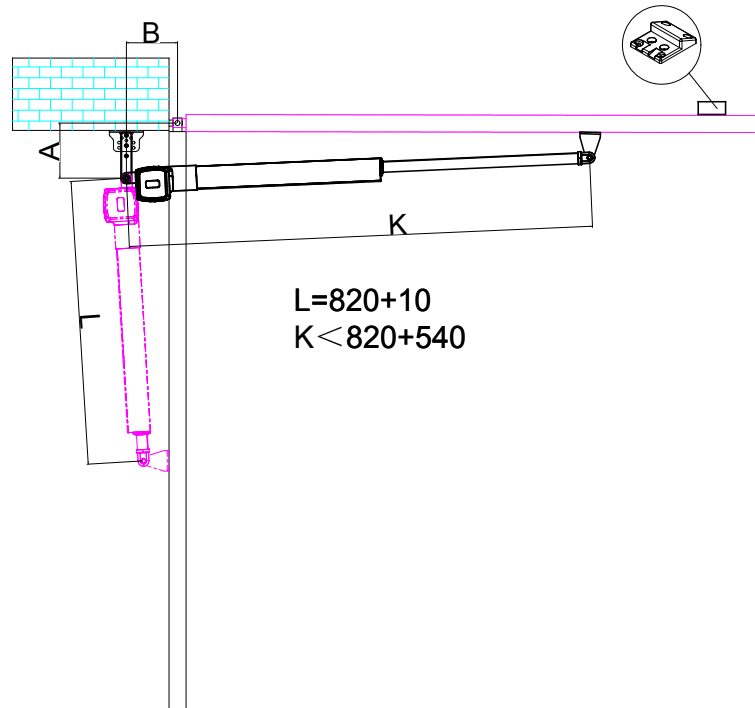


Figure 11

Note: Value B must be close to or equal to the value A to obtain the best mechanical advantage.

Installation direction: door opens inward (PK350DC)

Note: Limit stopper must be installed



$$L=820+10$$
$$K < 820+540$$

Figure 12

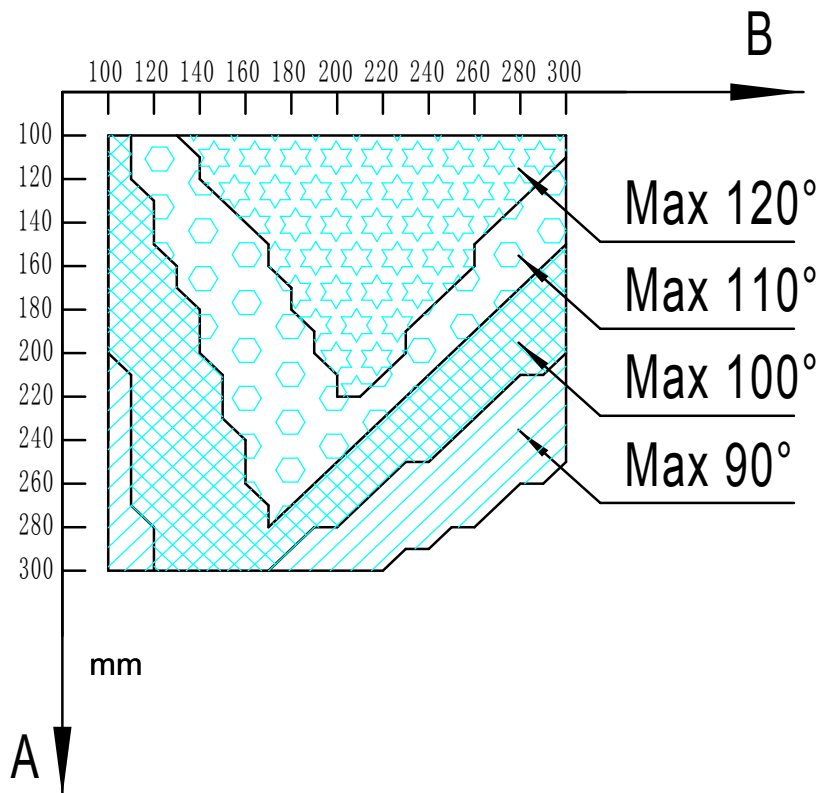
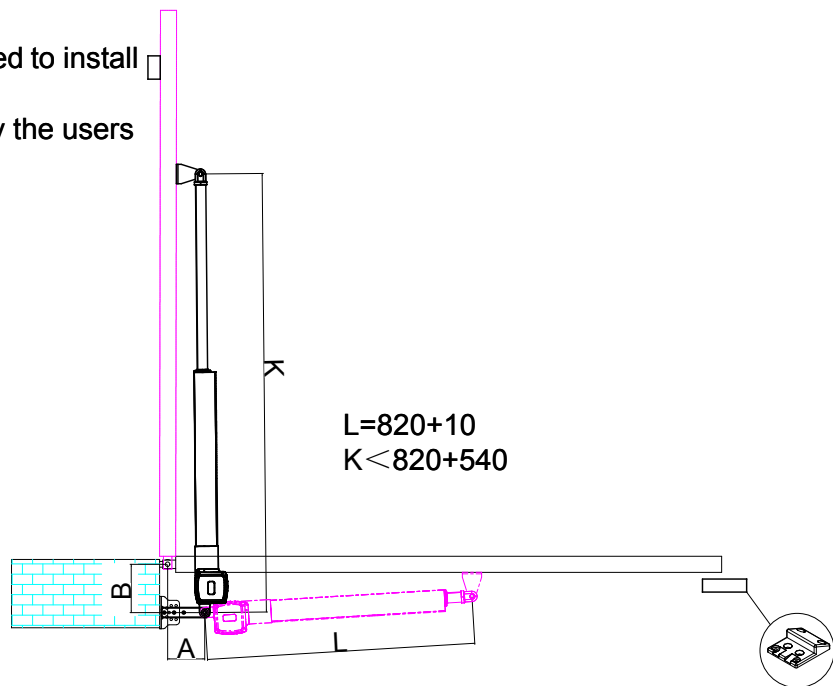


Figure 13

Note: Value B must be close to or equal to the value A to obtain the best mechanical advantage.

Installation direction: door opens outward (PK350DC)

Note: It is recommended to install with a safety stopper (should be prepared by the users themselves)



Note: Limit stopper must be installed

Figure 14

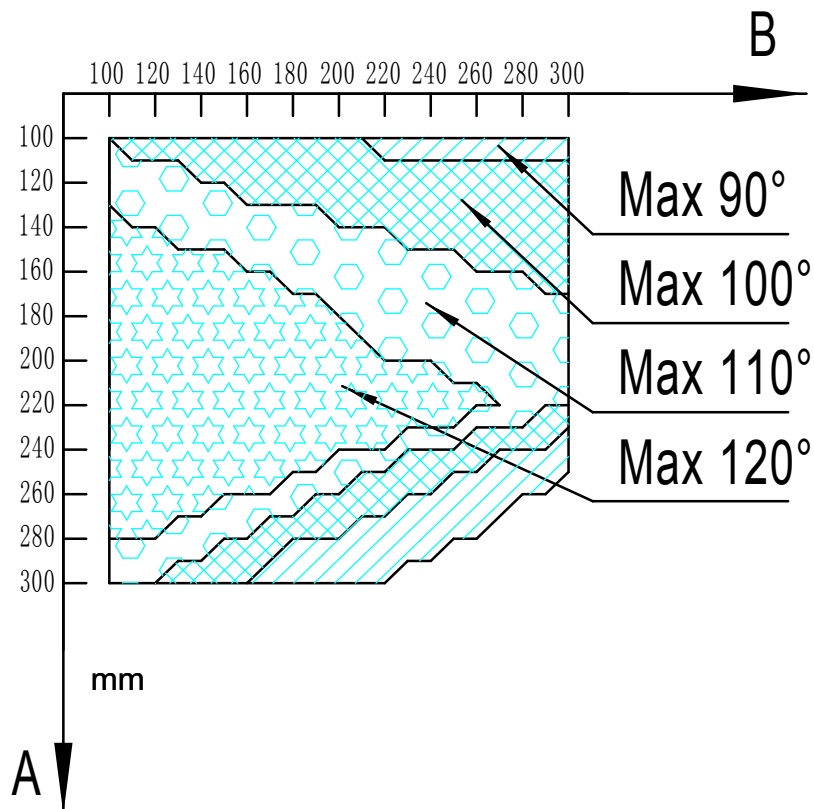


Figure 15

Note: Value B must be close to or equal to the value A to obtain the best mechanical advantage.

4.3.4 Size of Control Box

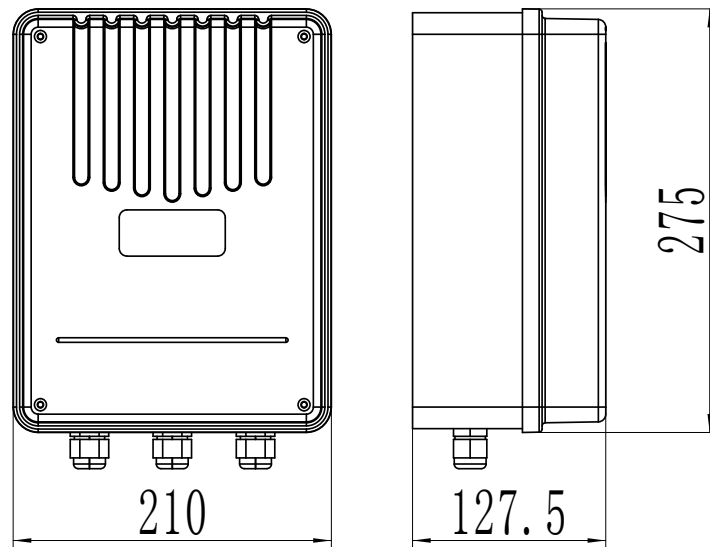


Figure 16



Warnings

- To ensure safety, when door open facing outward, the safety block must be installed at the OPEN limit position to prevent the door opening angle from exceeding the machine range; the safety stopper must be installed at the CLOSE limit position, to make two doors stopping at the CLOSE limit position accurately (as shown in figure 10, 14). When door open facing inward, the safety stopper must be installed at the CLOSE limit position (as shown in figure 8, 12).
- Before installing the main engine, make sure that the main engine and components are in good mechanical performance and that the door can be operated manually.
- One control unit can control driving one main engine or two main engines.
- Earth leakage circuit breaker must be installed where the gate movement can be seen, and the minimum mounting height of control box is 1.5m to protect it from being touched.
- After installation, please check whether the mechanical property is good or not, whether gate movement after manual unlocking is flexible or not, and whether the infrared sensor (optional) is installed correctly and effectively.

4.3.5 Control Board Wiring

Wiring
Main functions

(1) Just a battery voltage can be connected at once, or 12 or 24V.

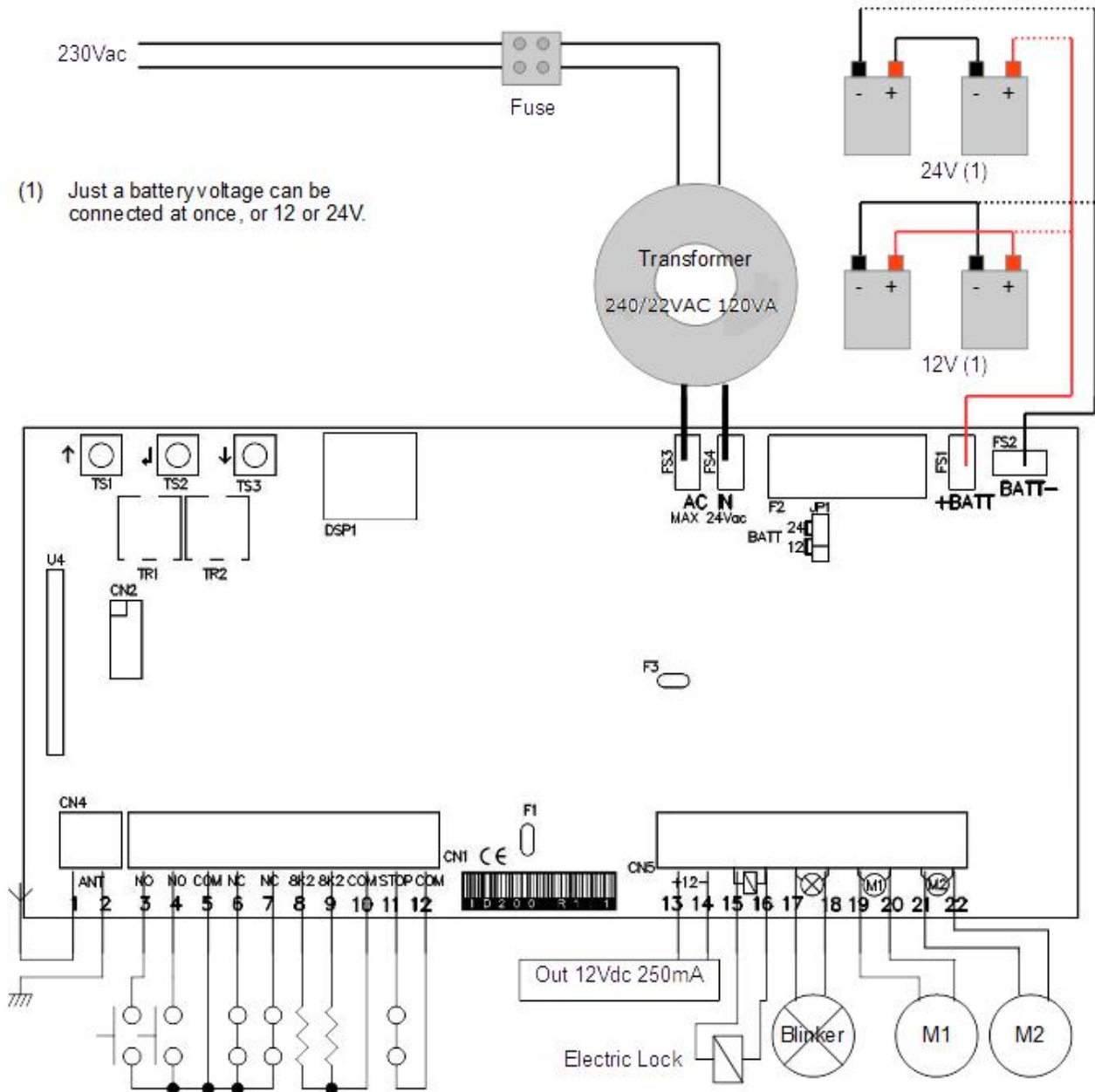


Figure 17

1. Antenna
2. Antenna's shield
3. Start input (NO)
It completely opens the gate
4. Pedestrian start in. (NO)
It opens just motor 2
5. Common

-
- 6. Photocell input (NC)
 - During pause: Reloads pause
 - During closing: Reverses motors direction
 - 7. Photo stop input (NC)
 - During pause: Reloads pause.
 - During closing: Reverses motors direction.
 - During opening: stops the motors and waits till contact returns close.
 - 8. Analog opening edge input (8K2 ohm)
 - Waiting an opening command: inhibits opening
 - During opening: reverses motor direction for 1 second.
 - If not used left unconnected.
 - 9. Analog closing edge input (8K2 ohm)
 - Waiting a closing command: inhibits closing.
 - During closing: reverses motor direction for 1 second.
 - If not used left unconnected.
 - 10. Common
 - 11. Stop input (NC)
 - It always stops motors and blocks control unit activity.
 - 12. Common
 - 13-14. Power supply output
 - 12Vdc 250mA
 - 15-16. Electric lock output
 - 17-18. Flashing light output
 - 12/24V 1A
 - 19-20. Output motor 1
 - 8A
 - 21-22. Output motor 2
 - 8A
 - TR1. Slowing down speed trimmer
 - TR2. Obstacle detection sensibility trimmer.
 - TS1-TS3. Buttons up/down
 - TS2. Enter button
 - DSP. Display
 - FS3-FS4. Transformer input 12-20Vac / 100-200VA
 - F2. Battery fuse 10A Fast
 - FS1-FS2. Backup battery input 12/24Vdc
 - J1. Back up battery voltage selector 12/24V

Inputs status

When the control unit is in standby. User can read inputs status on display:

__: No input active.

5t: Stop input active.

P5: Photo stop input active.

Pc: Photocells input active.

EO: Analogic edge opening input active.

EC: Analogic edge closing input active.

5B: Start input active.

5p: Pedestrian input active.

op: Open input active.

CL: close input active.

During pause, the display show the seconds countdown to closing.

Trimmers setting

Slow down speed trimmer regulates the slowdown speed. Do not set speed to low (less than 10 cm/sec on the wing edge) to avoid that gate stops in too cold conditions.

Obstacle sensibility trimmer fine tunes the obstacle detection level learned by the control unit during working times programming. This fine regulation must be done after working times learning.

Normally the trimmer goes in the center, in this position should be possible to respect rules in most of installations. If it's need to resolve problems related to norms or to environmental situations (ex. Strong wind) is it possible to regulate this trimmer increasing or decreasing sensibility.

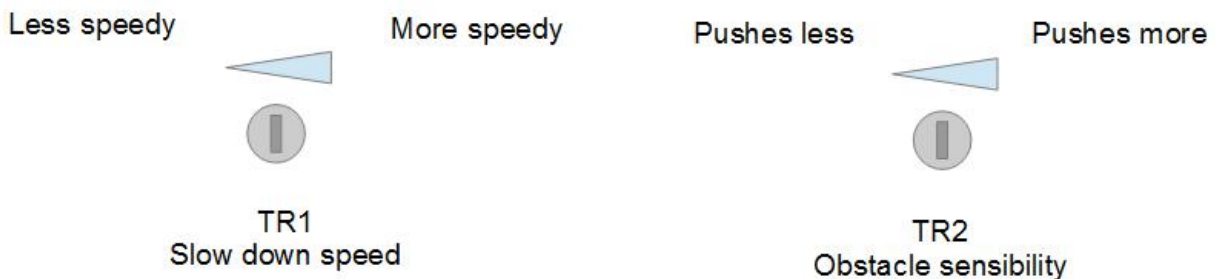


Figure 18

Quick installation

After the first time installation but before starting normal operation, one important step you have to take it to set the opening and closing limit stop positions for the running travel.

Please unlock the actuator first, manually swing the 2 doors to fully opened position then lock the

actuator. Press and hold 'TS1' button on the PC board till you read **AL** on the display. The door will open and stop in the opened position for 5 seconds (PC board is learning the rotor-locked current value), then door will close automatically. After the 2 swings are fully closed and display showing '--', running travel setting is finished. Please verify the correct installation by pressing the opening/closing button on the remote transmitter.

Slow stop is activated after travel setting, if slow stop speed is too slow, please adjust 'TR1' to increase. If slow stop speed is too fast, please adjust 'TR1' to decrease.

Note: If the door is no need to be fully opened, please install the limit stopper at the proper position.

Auto Learning transmitters:

It's possible to learn transmitters quickly without using the base menu. To insert a new transmitter transmit 3 times with the new remote, making at least 1 second pause between each transmission. Then transmitter already in memory and then once with the new. When programming is done, the blinker flash once. **Attention:** function must be enabled, refer to "advance menu"-auto learning transmitters. The new code takes the same channel as the one used to insert it.

Board settings

Base Menu

Push enter 1 for at least 1 second to enter base menu.

OL is on the display, with up/down it's possible to select other functions of this menu.

To exit this menu select **EX** or push up and down together.

After 2 minutes without actions, the control unit exits itself from this menu.

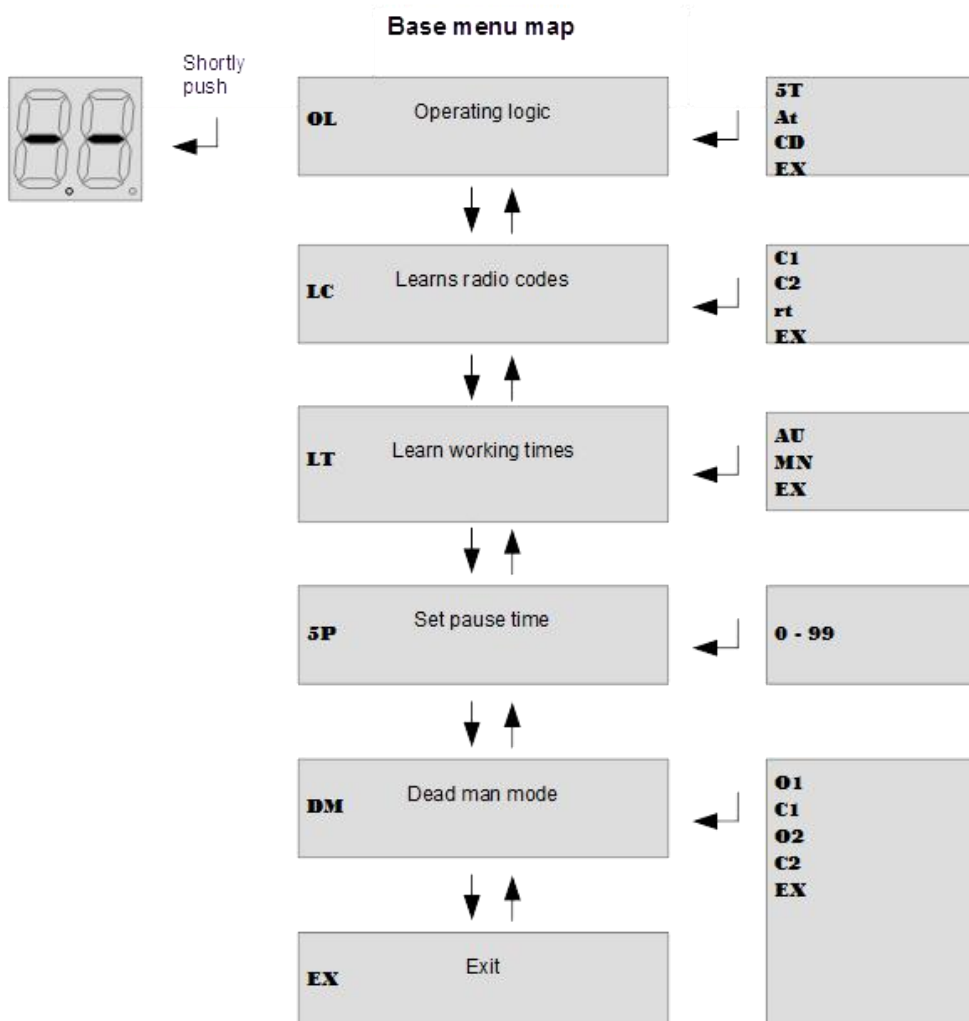


Figure 19

Base Menu Description:

Operating logic **OL**:

Select **OL** and push enter, with up/down select wanted logic between following end push once enter. Check tab operating logic for further information.

5T: Step by step logic.

At: Automatic closing with stop function.

CD: Automatic closing for condominium function.

To exit this menu select **EX** or push up/down together.

LC Learning/ removing transmitters code:

Select learning code function **LC** and push enter, than select one of following functions with up/down.

C1: learn a transmitter on channel1.

C2: learn a transmitter on channel2.

Rt: Delete all transmitter in memory.

Once selected the channel transmit the code, on the display is show “**OK**” for a while if operation is done.

To replace the channel of a code, just select desired channel and transmit once the same code.

To delete just one code, select **RT** and transmit the code to be removed, on the display is show “**OK**” for a while if operation is done.

To delete all codes, select **RT** and push enter, then confirm with **YS**.

To exit this menu select **EX** or push up/down together.

LT learn working time:

Attention: before to start learning procedure, the gate must be open to do automatic procedure, otherwise must be closed to do the manual procedure. Use “dead man ” function to put the gate in the right position.

Is it possible to program working time automatically, please refer to “**Quick installation**”

Select **LT** in the base menu and push enter, after select the learning mode with up/down.

AU: automatic learning procedure.

MN: Manual learning procedure.

To exit this menu select **EX** or push up/down together.

AU: Automatic procedure for working times learning.

Attention: in this procedure all safety inputs are disabled.

The wings close themselves, in the meanwhile all the working times and values for obstacle detection sensor are learned. If just motor 2 is connected, the control unit sets itself for “single wing working”. If analogue edges are connected, they are automatically enabled.

5p Set pause times:

Use up/down to set the pause time between 0 and 99 seconds. Push enter to confirm. To exit without modifications push together up and down.

Attention: setting pause time doesn't enable auto closing, please refer to chapter “OL operating logic” to enable this function.

DM Dead man mode:

Selecting this menu it's possible to control each motor in dead man mode. Push up and down to select one of following item:

- O1 open motor1
- C1 close motor1
- Q1 open motor2
- C2 close motor2
- EX Exit

Keep pushed enter to start the selected motor in dead man mode.

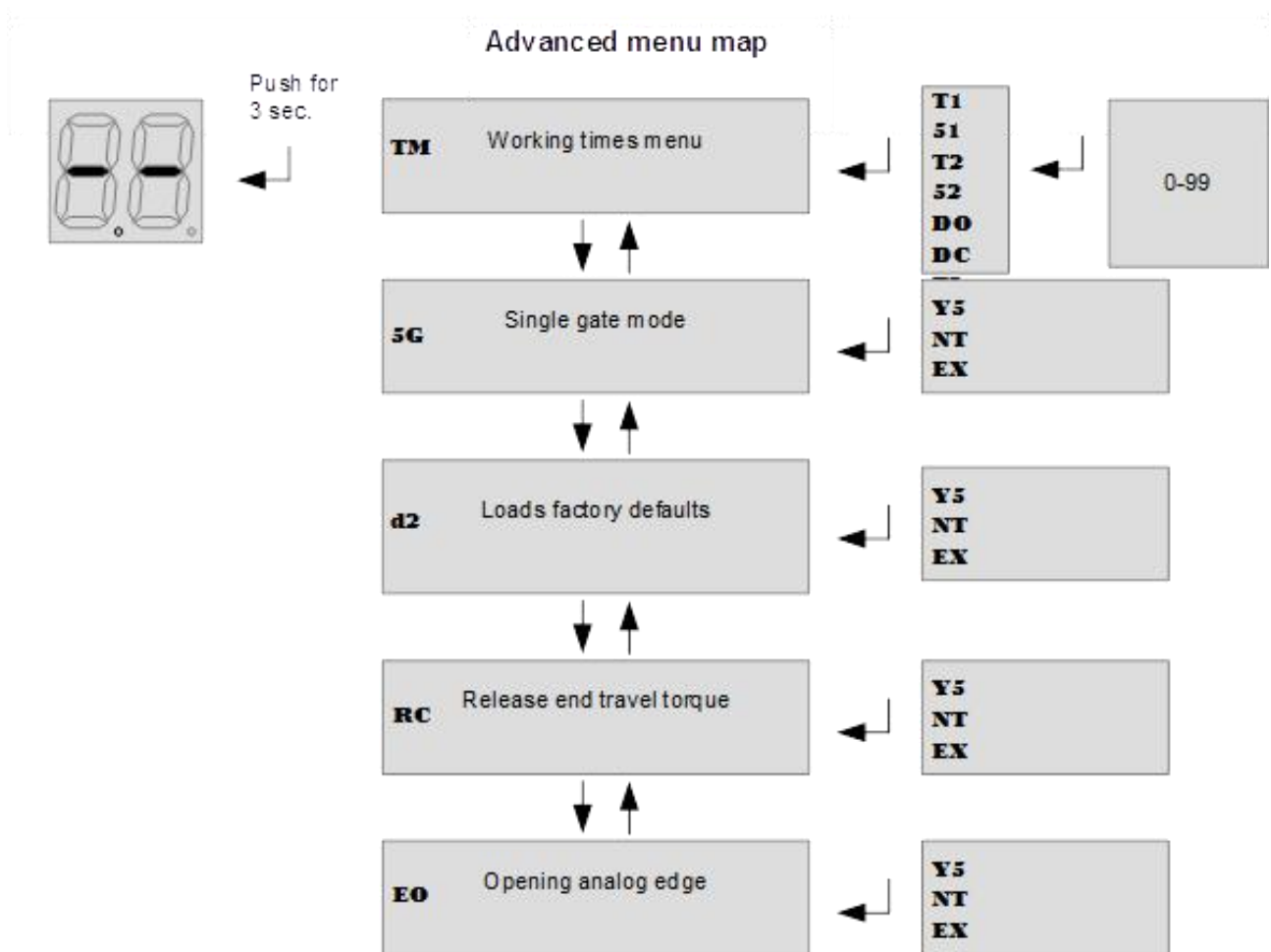
Board settings:

Advanced Menu

Push enter button till on the display is shown **TM**. With up/down it's possible to select all items In this menu.

To exit this menu select **EX** or push up/down together.

After 2 minutes without actions, control unit exits itself from this menu.



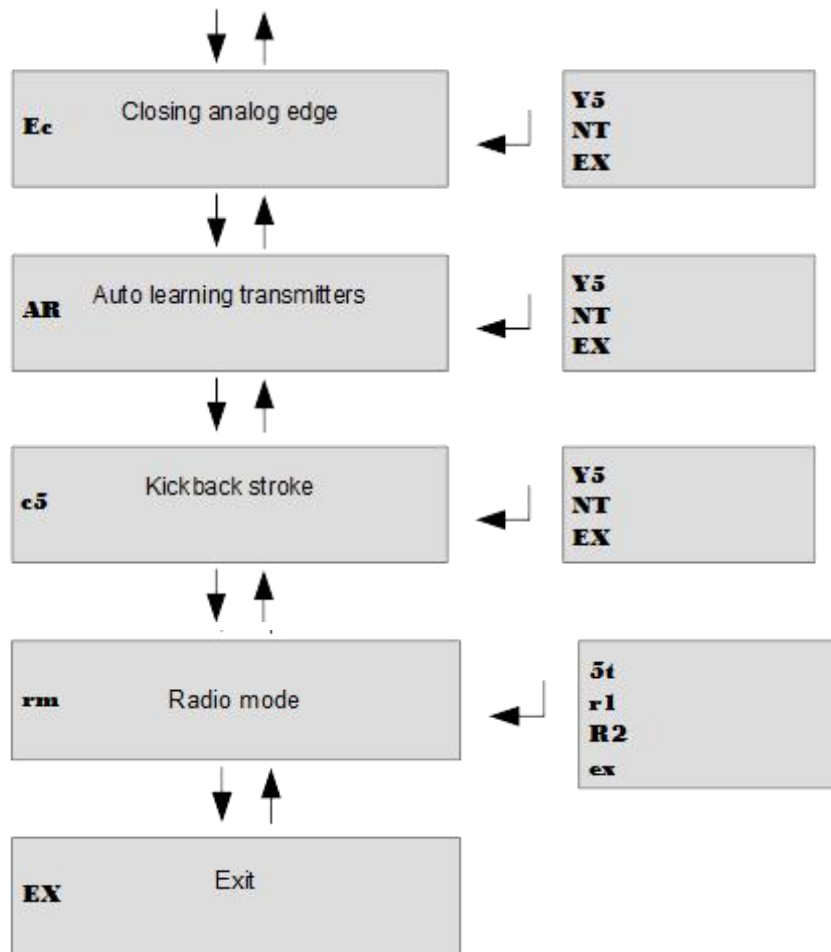


Figure 20

Advanced menu

TM working times menu:

In this menu it's possible to modify working times of control unit:

- T1- Working time motor1
- 51- Start time slowdown motor1
- T2- Working time motor2
- 52- Start time slowdown motor2
- DO-Motors delay opening
- DC- Motors delay closing
- TL-Electric lock activation menu.
- EX-Exits from advanced menu.

Once selected working times to be changed, use up/down to modify it from 0 to 99 seconds. Push enter to confirm.

To exit without modifications select EH or push together up and down.

5G Single wing mode:

In this menu it's possible to verify or set if gate works in single wing mode (motor2). Use up/down to choose yes (YS), not (NT) or exit(EX). Push enter to confirm.

D2 Load defaults:

Choosing this menu and confirming with yes (YS), set the control unit at factory defaults.

RC release torque at work end:

Enabling this function, the motors reverse direction for a while to release the torque at end of work .Use up/down to choose yes(YS),not (NT) or exit(EX). Push enter to confirm.

EO Enable opening analogue edge:

Enabling this function it's enabled the edge active in opening period. Choose yes(YS) is enables the edge.

EC Enable closing analogue edge:

Enabling this function it's enabled the edge active in closing period. Choose yes(YS) is enables the edge.

Ar Enable automatic transmitters learning:

Enabling this function it's possible to insert new transmitters without accessing base menu. Refer to "Automatic transmitters learning".

C5 Enable kickback stroke:

In this menu you can enabled the stroke at start to unlock electric lock and the final stroke to lock it.

rM Radio mode:

In this menu it's possible to modify how transmitters work with the control unit.

5T- Step by step mode: Each button (code) of the transmitter is entered separated by the others, Codes learned on C1 work as "Start command". Transmitters learned on C2 word as "Pedestrian command".

r1- Learning a code from a transmitter, it enables all the four buttons of transmitter wording with the control unit. Sequence is: Button1=open command, Button2=close commend, Button3=Pedestrian commend, Button 4=stop commend.

r2- Learning a code from a transmitter, it enables all the four buttons of transmitter wording with the control unit. The sequence is as above, except buttons3 and 4 inverted.

Default settings (Factory presets)

Here it follows list default settings. The same set after a **D2** command of advanced menu.

Setting	Default
0L Operating logic	5T Step by step
5P Pause time	10 10 seconds
T1 Working time motor 1-2 T2	30 30 seconds
51 Slowing down time motor 1-2 52	20 20 seconds
D0 Wings delay opening	02 2 seconds
Dc Wings delay closing	05 5 seconds
TL Electric lock activation time	02 2 seconds
5G Single gate mode	NT Not
RC Release end travel torque	NT Not
E0 Opening analog edge	NT Not
EC Closing analog edge	NT Not
AT Auto learning transmitters	Y5 Yes
rm Radio mode	5T Step by step
C5 Kickback stroke	NT Not

Figure 20

5. Others

5.1 Maintenance

Check whether the gate operates normally every month.

For the sake of safety, each gate is suggested to be equipped with infrared protector, and regular inspection is required.

Before installation and operation of the gate opener, please read all instructions carefully.

Our company has the right to change the instruction without prior notice.

5.2 Troubleshooting

Problems	Possible Reasons	Solutions
The gate cannot open or close normally, and Display does not light.	<ol style="list-style-type: none"> 1.The power is off. 2.Fuse is burned. 3.Control board power wiring with problem. 	<ol style="list-style-type: none"> 1.Switch on the power supply. 2.Check the fuse, change the fuse if burnt. 3.Re wiring according to instructions.
The gate can open but cannot close.	<ol style="list-style-type: none"> 1.Photocell wiring with problem. 2.Photocell mounting with problem. 3.Photocell is blocked by objects. 4.Sensitivity of obstacle is too high. 	<ol style="list-style-type: none"> 1.If not connect photocell , please make sure that the 5 and 6, 5 and 7short circuit; if connect infrared sensor, please make sure the wiring is correct and the photocell is N.C. 2.Make sure that the photocell mounting position can be mutually aligned. 3.Remove the obstacle. 4.Reduce the sensitivity of obstacle.
Remote control doesn't work.	<ol style="list-style-type: none"> 1.Battery level of the remote control is low. 2.Remote control learning is not completed. 	<ol style="list-style-type: none"> 1.Change the remote control battery. 2.Re-conduct remote control learning.
Press OPEN, CLOSE button, the gate is not moving, motor has noise.	Gate moving is not smoothly.	According to the actual situation to adjust the motor or the gate.
Leakage switch tripped.	Power supply line short circuit or motor line short circuit.	Check wiring.
Remote control working distance is too short.	Signal is blocked.	Connect external receiver antenna, 1.5 meters above ground.
The gate moves to the middle position to stop or reverse.	<ol style="list-style-type: none"> 1.Motor output force is not enough. 2.Sensitivity of obstacle is too high. 3.Gate meets obstacle. 	<ol style="list-style-type: none"> 1.Check whether the transformer power is normal, if not, change the transformer. 2.Adjust the TR2. 3.Remove the obstacle.

Warranty

Warranty Ordinance

1. To repair against this warranty card and invoice during the warranty period.
 2. Warranty period: 1 year after the date of invoice.
 3. Without unauthorized dismantling, any product broken or damage due to quality problem, we'll offer the repair service for free or replace for free.
 4. The malfunction and damaged caused by incorrect use or man fault is not covered by this warranty.
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Maintenance Record

Check Date	Check Content	Maintained by