

RS-140 Side-mounted Flat Door Opener

Chapter 1: Product introduction.	2
1.1 Workflow	2
1.2 Product Characteristics	3
1.3 Main Technical Parameters	3
 Chapter 2 : Installation	 4
2.1 Installation of mechanical part of door opener	5
2.2 Connection of electrical part of door opener	8
 Chapter 3: Parameter Setting and State Display	 11
3.1 Parameter Setting	11
3.2 State Display Description	14
3.3 Error Alarm	14
 Chapter 4: Debugging	 14
4.1 Closing Position Learning	14
4.2 Opening Debugging	15
4.3 Closing Debugging	15
4.4 Other Debugging	16
 Chapter 5: Common Troubles and Removal	 16
Parking List	18

Chapter 1 Product Introduction

In order to meet the automation requirements of modern flat-opening door, our company has developed and produced intelligent automatic door opening/closing machine, which adopts microcomputer chip, digital control, powerful function, high safety performance, easy installation and debugging.

Note: In order to use the equipment better and more comprehensively,

please read the operation instructions carefully before you install and use it.

1.1Workflow :

A. Main Process:

open the door-----open & slow down-----keep in place-----close the door-----close & slow down----lock the door.

B. Detailed Workflow :

Step 1: The open signal from external equipment triggers the electromagnetic lock of the door-opener to shut down.

Step 2: Open the door (permissible speed 1 to 10 gears, see Chapter3).

Step 3 : Open & slow down(permissible speed 1 to 9 gears, see Chapter 3).

Step 4: Stop it.

Step 5: Open &hold (permissible time 1 to 99 seconds, see Chapter 3).

Step6: Close the door (permissible speed 1 to 9 gears, see Chapter 3).

Step7: Close & slow down(permissible speed 1 to 9 gears, see Chapter 3)

Step8: Electromagnetic lock power on.

Step9: Presse door closed.

End of a workflow.

Note: In the process of closing the door, if there is a trigger signal for opening the door, the action of opening the door will be executed immediately.

1.2 Product Characteristics

- 1). Low consumption, static power :0.5W, maximum power: 25W.
- 2). Super silence, working noise less than 50 d B.
- 3). Small size, easy installation.
- 4). Powerful, maximum push door weight 140 Kg.
- 5). Support multiple signal input, relay signal, voltage signal (5-24V).
- 6). motor over-current, overload, short-circuit protection.
- 7). Intelligent resistance, push-door reverse protection.
- 8). Motor current (thrust), speed accurate regulation.
- 9). Self-learning limitation, abandoning tedious limitation debugging.
- 10). Enclosed shell ,rain and dust proof.

1.3 Main Technical Parameters

Product Types	Type 140
Range of application	Various flat-open doors with the width $\leq 1200\text{mm}$ and the weight $\leq 120\text{Kg}$

Open Angle	90°
Power Supply	DC24V 5A
Rated Power	25W
Static Power	0.5W (no electromagnetic lock)
Open/Close Speed	1-9 gears, adjustable (corresponding opening time 10-3S)
Open Hold Time	1 ~ 99 seconds
Operating Temperature	-20°C ~ 60°C
Operating Humidity	30% ~ 95%(no condensation)
Atmospheric Pressure	700hPa ~ 1060hPa
External Size	Long 360mm*Wide 83mm*High 131mm
Net Weight	about 7.3kg
Three-Guarantee Period	One year

Chapter 2 Installation

Installation Notes:

A. Considering the influence of wind resistance, force arm and other factors, the maximum width of the door for the door opener is 1.6 meters. The weight of the

door should be less than 90 kg, the width of the door should be reduced by 0.1 meters, and the weight can be increased by 10 Kg. By analogy, the width of the door with 1.1 meters can reach 140 Kg, slightly overweight will not affect the life of the door opener. But it will affect the opening/closing speed.

B. Installation must be carried out according to the size provided in the instructions. Improper Installation will directly cause the door opener to fail to work properly and damage the equipment in serious cases.

C. During installation, it is forbidden to change the structure of the door opener. and no holes can be made in the shell to avoid water and air entering and causing electronic and electrical components failure.

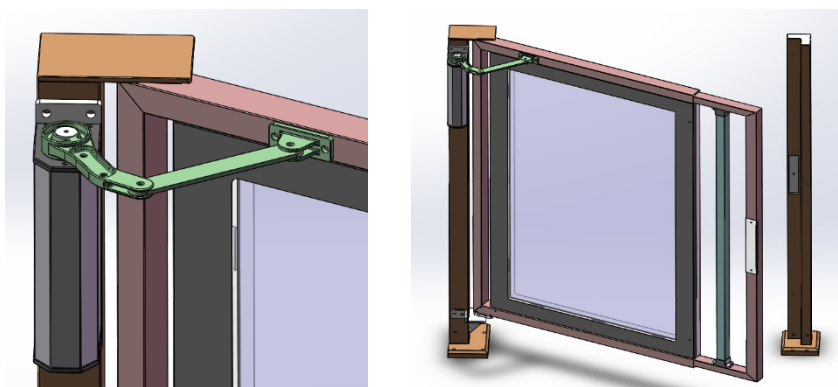
2.1 Installation of mechanical part of door opener .

2.1.1 Installation instructions:

A. Distinction of left/right door opening: Clockwise door opening direction is left door, conversely, counter-clockwise door opening direction is right door .

B. The door opener should be mounted vertically with the door post. Pay attention to the rotation direction of the connecting rod. Installation is as follows:

Left Open Door:



Right Open Door:



C. Install the main body of the door opener according to the size provided in 2.1.2 and 2.1.3.

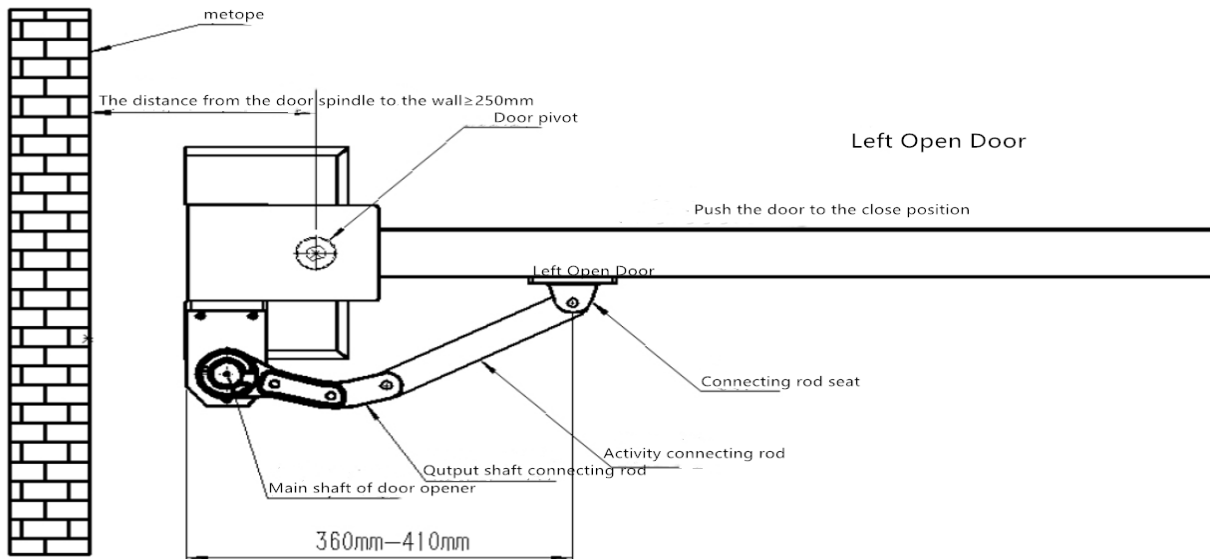
D. Remove the crank fixed screw and gasket from the main shaft of the door opener.

E. Put the perforated end of the crank assembly into the main shaft of the door opener. Remember to make the position of the keyway on the hole aligned with the key of the main shaft, next lock the crank with gasket and screw.

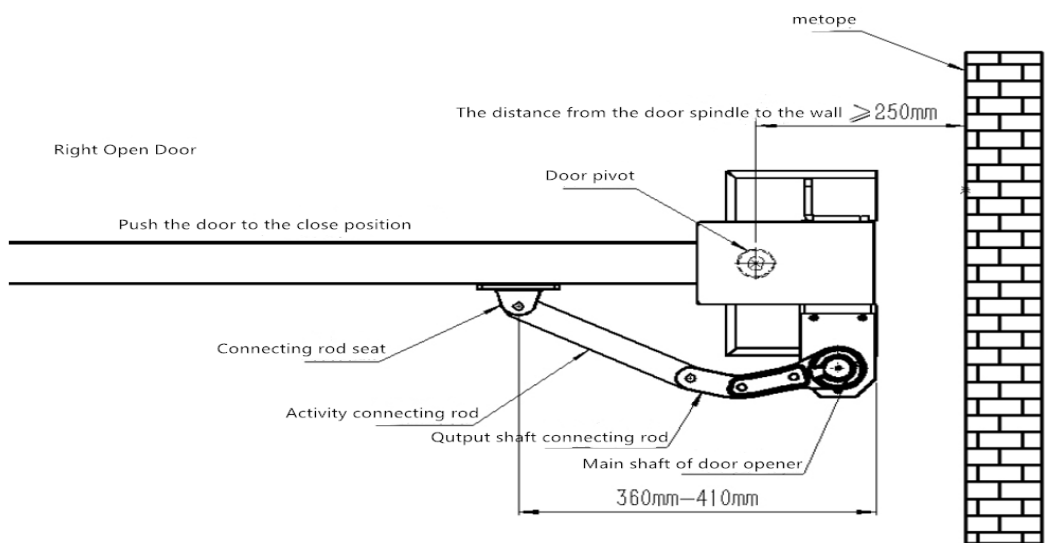
F. Fix the L-type mounting seat on the crank to the door ,with the fixed screw M8*70 and the flat cushion nut M8.

Note: When installing, the L-type mounting seat, crank and main shaft of the door opener should be on the same horizontal plane. Otherwise, the crank up and

down plane will be forced and blocked.



2.1.3 Right open door installation method and size.

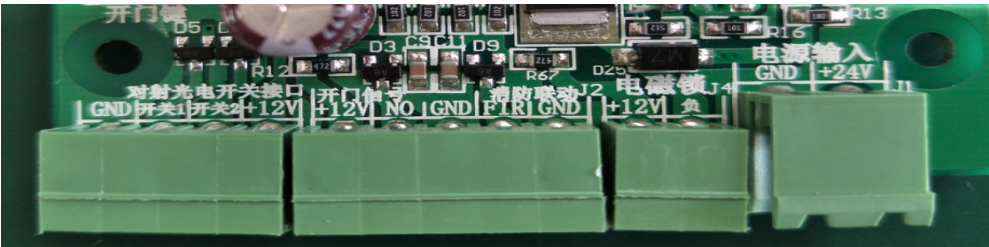


2.2 Connection of electrical part of door opener

2.2.1 Description of the control port:

Warning: A. When the electrical part is connected, live work is strictly prohibited. Power can be energized after all connections . B. Do not connect the positive and negative poles of the power supply inverse, otherwise the equipment will be damaged. Note: A. Please choose an electromagnetic lock whith supply voltage is 12V DC and the power $\leq 9W$ or our company' s electromagnetic lock. Otherwise it will cause abnormal operation or circuit damage. B: When leaving factory, the motor wire has been connected, do not take it out without any special case. C: Opening signal of external access control equipment : a: When the access control equipment is the output of switch quantity (dry contact), the close switch controls the opening of the door, and the switch should be open usually, without polarity requirements. b: When voltage output (wet contact), add transfer module.

Name	Open Door Control Signal			Fire fighting linkage		Electromagn-et ic lock		Power Supply	
door opener	+12 V	N O	GND	FIR	GND	+12V	Neg-a tive	GND	+24V
Switchi-ng Power								COM or-V	+V
Electro-m agneti-c Lock						Red line	black line		
Access Control Machine	+12 V	N O	COM GND						

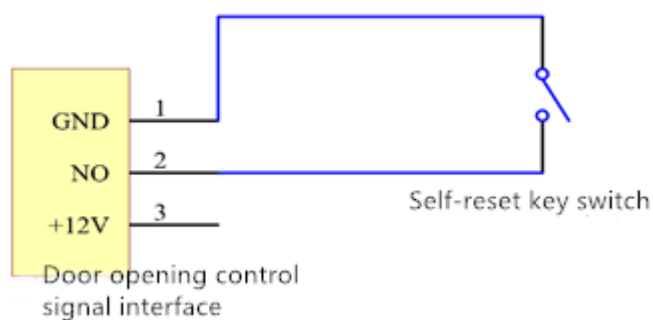


Infrared photoelectric switch interface (Note: please use NPN normal open type)	GND
	Infrared photoelectric switch interface (Note: please use NPN normal open type)
	Infrared photoelectric switch interface (Note: please use NPN normal open type)
	+12VDC

2.2.2 Diagram of control signal wiring

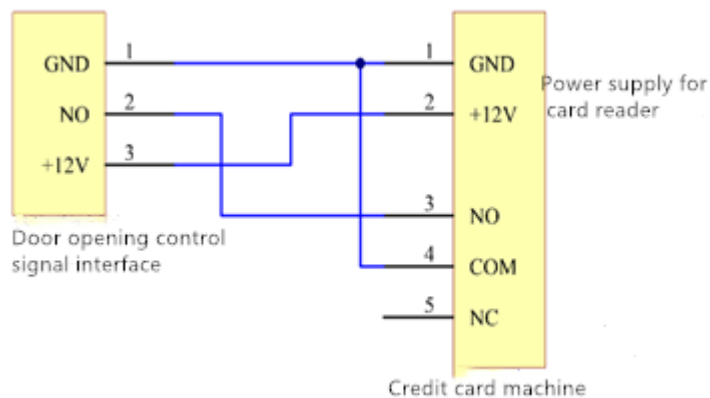
Connect power supply, electromagnetic lock and external door opening control equipment according to the diagram. After checking , start the power commissioning.

1. Exit button switch connects the control signal of door opener:

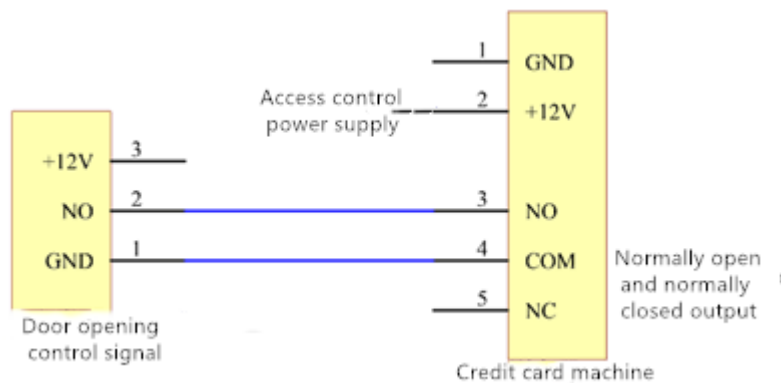


2. Access Control machine Connects the control signal of door opener:

the first connection:



the second connection:



Note: All door opening signals should connect to the same point (GNG, NO)

Chapter 3 Parameter Setting and State Display

3.1 Circuit Board Diagram

The CNC board for door opener uses 3-bit LED digital tube to display and three keys to set parameters. The dial switch is used to select the right and left switches. Jumper selection door opening control signal input is relay or voltage mode. Check each indicator indicating the power supply normally and the Hall state of speed measurement.

As follows:

Motor terminal

Left & right door

opening selection

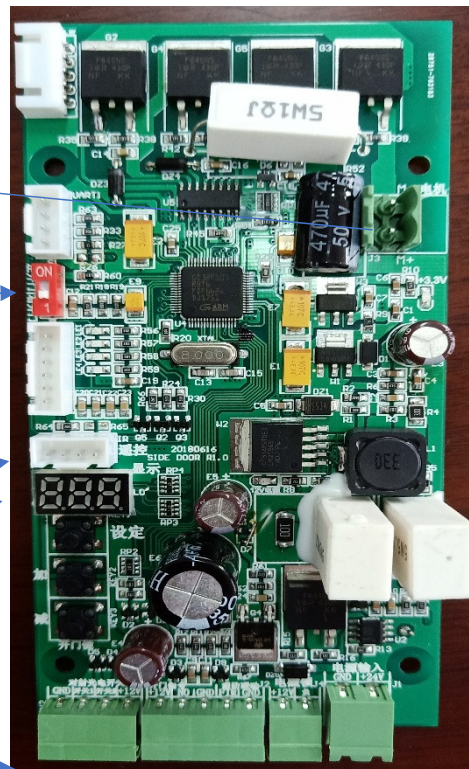
Encoder signal

Remote control

Digital display

The keys

External terminal



3.2. After installation and wiring , turn on the power and the door opener will enter the learning state of the closing position (digital tube display "H07") .

After close and finish learning , it enters the standby state, and the digital tube displays" _ _ _"in the standby state.

3.3.Function and corresponding digital tube display

Dis-pl ay	Explain	The default value	Range8	Remarks
P01	Closing speed	6	1-10	The numerical value larger, the speed faster.
P02	Closing slow speed	3	1-10	The numerical value larger, the speed faster.
P03	Closing delay	5	1-15	Force the door close in place.
P04	Opening & holding time	5	1-99	Residence time after opening the door in place.
P05	Closing slow angle	30	5-60	The numerical value larger, the angle larger.
P06	Current Detection (High Speed)	110	20-240	Unit is 0.01A
P07	Wind resistance time	3	1-10	Unit is S
P08	Left & Right open door	3	=1 left open door =2rightdoor =3 testing	Default 3: Open the door according to the red dial switch on the circuit board.
P09	Auto-induction open and close position	1	=1 induction =2 non-induction	at1 When the door is not closed in position , it will close again
P10	Open speed	7	1-10	The numerical value larger, the speed faster.
P11	Opening slow speed	3	1-10	The numerical value

				larger, the speed faster.
P12	Opening slow angle	15	5-60	The numerical value larger, the angle larger.
P13	Open angle	135	50-200	Open angle
P14	Factory holds	5	1-10	Factory holds
P15	Factory reset	2		66Factory rest 01Working mode sounds 02Working mode silent 05 Display the number of people in and out 88 Clear the number of people in and out 03 Test program
P16	Factory holds	5	1-20	Factory holds
P17	Factory holds	15	1-60	Factory holds
P18	Delay before opening	2	1-60	1 means 0.1S
P19	Low-speed current	35	20-150	Unit 0.01A
P22	Remote mode selection	1	1-2	1. Inching (all keys can be used as open key, the door opening time delay to automatic closing) 2. Interlocking (press open key to open the door and keep it open normally, need to press close key to close).
P23	Factory holds	10	1-10	Factory holds
P24	Selection of Magnetic /Electronic Lock	1	1-2	1Magnetic lock(power on and lock) 2 Electronic control lock ((power on and open)
P25	Factory holds			Factory holds
P26	Coefficient of downwind resistance	4	1-10	0 Maximum wind resistance

3.2. State Display Description

Work Display H01 - H09

Dis-play	Explain	Remarks
- - -	Hold State	Standby without work
H01	High speed open door	Open the door high speed
H02	Open &slow	Open stop &slow down
H03	Open& slow Delay	Open stop& slow down
H04	Open& hold	Open in place& hold
H05	High speed close door	Close the door high speed
H06	Close& slow down	Close stop& slow down
H07	Close door in place Delay	Close door in place
H08	Push-door Protection	If the motor driving current is too high when open/close door, or push the door reverse.
H09	Fast Protection for back-push door	

3.3.Error Alarm

Work Display E01 - E04

Display	Explain	Remarks
E01	Report error of open door	
E02	Report error of close door	
E03	Close stop error	
E04	Hall detection error	

Chapter 4 Debugging

4.1 Closing Position Learning

A. Normal state: Power on, the digital tube on the circuit board shows "H07", and the door moves slowly towards closing automatically(in the learning

closing position), waiting for the door to close in place and digital

display "---" ;

B. Abnormal state: Power-on, the door repeatedly switches back and forth, then set the P15 parameter as 02, when power on again, and then observe whether it enters the normal state A.

C. Abnormal state: Power-on, the digital tube on the circuit board shows "H07". When the door moves towards opening ,please refer to(3.1) and dial the open direction dial switch(red) on the circuit board to the opposite direction, and then observe whether it enters the normal state A.

Note: please do not block when learning closing position, otherwise the blocking position will be regarded as the closing position!

4.2 Opening Debugging

A. Opening Angle: if the opening Angle is not enough, increase the value of P13; if it is too large, decrease the value of P13 to reach the desired Angle.

B. Opening speed: adjust the value of P10, the larger the value, the faster the speed, the smaller the slower speed.

C. Time of open and hold : When the door open in place, the time of stopping at the position, and adjust the value of P04 (in seconds).

4.3.Closing Debugging

A. Closing speed: Adjust the value of P01, the larger the value, the faster the speed, the smaller the slower;

B: Close-slow Angle: Adjust the value of P05, the larger the value, the larger the Angle, the smaller value the smaller angle.

4.4.Other Debugging

A: Adjust backpushing current:

Set P06, factory value is 110, that is, set motor working current to 1.10A.If the motor works abnormally and the LED digital tube shows "H08" alarm, the P06 value must be increased.

B. If the door is not closed in place, increase the value of P19 or P02.

C. If the close buffer speed is too fast, the P02 value can be reduced.

D. Please refer to 3.1 for setting other parameters, it should be according to the situation on site.

Chapter 5: Common Troubles and Removal

Fault phenomena	Fault Judgment		Treatment Measures
No working, and the 3.3v power indicator and digital tube do not light.	Use a multimeter to Check whether there is a 24V voltage at the two points of "power input" on the circuit board terminals.	24V	1. Check & replace 24V power supply. 2. Check & replace wiring.
		no 24V	Replace the circuit board.
No working, digital tube	Set P6 parameters by referring to	Problem solve	End

display "H08"	3.1.3, increase high-speed current (high-speed torque), and restart the work.	Fault remain	1. Replace the motor. 2. Replace the circuit board. 3. Disconnect the connection from the door to the rocker arm and check whether the door is blocked.
Open not in place	Increase the value of P13, increase the angle of open door .		
Open without buffer	Increase the value of P12, increase the buffer angle of open door.		
Close not in place	Increase the value of P19, increase the value of low-speed current (low-speed torque), or increase the value of P2, increase the buffer speed.		
Close without buffer	Increase the value of P05, increase the buffer angle of close door.		
When the door is closed, the lock cannot lock the door.	Use a multimeter to Check whether there is a 12V voltage at the two points of "electromagnetic lock" on the circuit board terminals.	12V	1. Check and adjust the electromagnetic lock, make it flat with the iron plate. 2. Replace the electromagnetic lock. 3. Check and replace the connection.
		no 12V	Replace the circuit board.

Parking List

No.	Part Name	Unit	QTY	Remarks
1	140 model side-mounted door opener	set	1	
2	Crank component	set	1	1 straight handle, 1 crank, 1 L-type mounting seat.
3	Installation screw	bag	1	2 round pins M10*25, 6 Flat pads M10, 2 open pins, 2 screws M8*70, 6 nuts M8; 4 screws M8*110.
4	Switching Power DC24V 5A	Piece	1	AC220