







# **SD280**

## **Operation instructions**



*Automatic sliding door operator*

 **Pay attention to**

-  Please don't use the door in moist or vibratory place, or place where produce the corrosive gas.  
Or will cause the accident, such as fire, electric shock, crash.
-  Please don't use door in the environmental temperature which is beside -20°C~50°C, or will cause fire, poor movement.
-  After opening the door, please ensure more than 30mm space,  
Or cause to grip finger in the door and column, then damage the person.
-  Please don't cut off the power supply, when door is in movement.  
Or will cause people to hurt.
-  Please paste the pasteboard of direction on the sash of door.  
If not, will make the person who pass can't notice the sash of door, which will cause injury.
-  Please don't install any accessory which the capacity is more than DC24V 300mA to the operator, if do will expand the device. Will cause the fire.

■ **Other Important Notice**

Please don't use the door which surpass the regulated weight, or will cause fault.

In order to know the model of motor device easily, please paste the attached product marks in the package to every parts of the operators, such as engine box.

How to use the battery box device function

Before using this, please charge for 24 hours. Connect to the Function expansion devices, which makes main power supply of engine device start to charge a battery. service life is 1-5 years under environmental temperature 0°C~40°C, if the environmental temperature beside 0°C~40°C, so the service life will be shorted.

After charging for 24 hours, battery box device still can't be opened or closed, when cutting off the power supply, which means the battery can't be used any more. Please charge battery immediately.

Please regularly do the inspection on battery each half year.

How to use magnetic lock

Please use this under environmental temperature 0°C~40°C, or which will cause poor movements. the pictures in the manual only for your reference. please subject to material object, if the product has change, Without notice.

# Catalogue

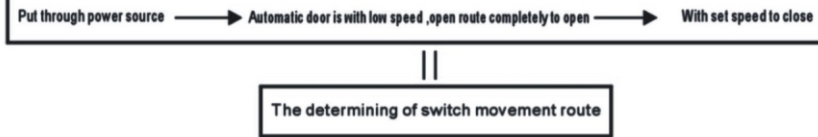
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## Exception and diagnosis

Exceptional condition	Reason	Confirm item	Processing technique
Door switch movement is smooth too slowly or not	<ul style="list-style-type: none"> <li>● It is too slow to open or close speed</li> <li>● Buffer distance sets too</li> <li>● Switch door person meets door body or has foreign matter cause exceptional pattern</li> <li>● Walk resistance is too big</li> </ul>	<p>Confirm that switch door sets value</p> <p>Cut off power source, use hand switch door</p> <p>Confirm that rail bone has rubbish.</p> <p>Whether confirmation has barrier.</p>	<p>Adjustment is steamed close speed value.</p> <p>Adjustment buffer sets value.</p> <p>Let door body be closed temporarily one time.</p> <p>Clear away rubbish</p> <p>Clear away barrier</p>
Door does not move	<ul style="list-style-type: none"> <li>● Power source sinks put throughing</li> <li>● Sensor fault</li> <li>● Door is locked</li> <li>● There is rubbish in door rail</li> <li>● Whether jumper contacts bad or broken road</li> </ul>	<p>Check circuit breaker</p> <p>Whether check mains switch opens</p> <p>Whether check door had been locked.</p> <p>Close the confirmation of power source door machine whether smooth move.</p> <p>Check connection.</p>	<p>Put through circuit breaker.</p> <p>Open mains switch</p> <p>Change sensor.</p> <p>Open door lock</p> <p>Clear away rubbish or barrier.</p> <p>Join or change again.</p>
Door barrier is not last	<ul style="list-style-type: none"> <li>● Sensor continued work</li> <li>● Safe sensor continued work</li> <li>● Sensor line short circuit</li> </ul>	<p>In biography sense district, it has mobile object to cause wrong movement</p> <p>In biography sense district, have not moved object to cause wrong movement.</p> <p>Inspect safe photoelectric head or have rubbish on smooth ware.</p> <p>Optical axis go</p> <p>Take apart the line of terminal son it is rear, whether door is closed.</p>	<p>In biography sense district mobile object.</p> <p>Change sensor.</p> <p>Clear away rubbish</p> <p>Tune is accurate optical axis</p> <p>Change line</p>
Door can open the door automatically	<ul style="list-style-type: none"> <li>● Sensor misoperation</li> </ul> <p>Detection district whether have to move door object</p> <p>Near door, it has to send stiff electric wave.</p> <p>The inspection district with other sensors is overlapping.</p> <p>There is fluorescent lamp in detection district</p> <p>Sensor is bad</p>	<p>Have checked</p> <p>Have checked</p> <p>Have checked</p> <p>Have checked</p> <p>Sensor has to jump on the contrary phenomenon</p>	<p>Mobile object is put aside from detection district</p> <p>Put aside the machine of the electric wave that is sent out vigorously</p> <p>Conversion disturbs switch</p> <p>The lamp away from the test area, the replacement sensor</p>
Door is not whole drive	<ul style="list-style-type: none"> <li>● Set in half open pattern.</li> </ul>	<p>Inspect whole / half open width door to open switch.</p>	<p>Switch arrives open pattern completely.</p>
Sash of door trembles	<ul style="list-style-type: none"> <li>● Start moment to set mistake</li> </ul>		<p>Set to start force to resist</p>

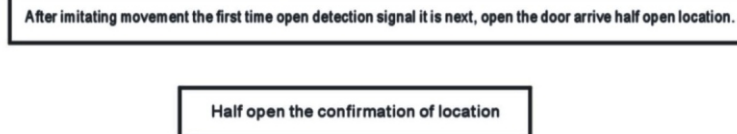
## Movement illustration

### ■ Simulated movement



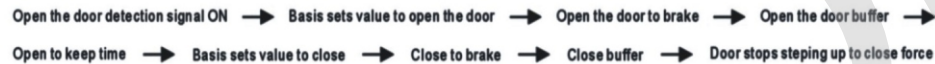
Notice: Carry out above movement after putting through power source,with drive completely half is unconcerned open.

### ■ Use half open pattern



Notice: In open detection signal for the first time open and submit to open form = confirmation half open location, If being to add the imitation person of outside force to bump against, go to door on , confirm wrong location easily, Please Note.

### ■ Normal movement



### ■ Collision detection function

In close in movement, after meeting barrier, carry out kick back.

Meet barrier to carry out kick back it is rear,Door body in in close route become buffer rectification speed before going to barrier place.

Dismantle as barrier it is rear, after door body confirms begin to return to normal next time.

### ■ Protect function ]

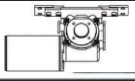
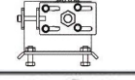
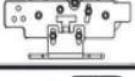

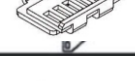
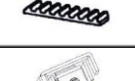
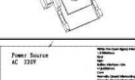

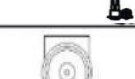

Control equipment in inside,self protects function,the temperature that goes to inside goes up when going to certain value,It is biggest value that open time sets automatically.

When going up again continuously as temperature,it is automatic to stop working,after temperature drops, It is automatic to return to normal.

## Series specifications

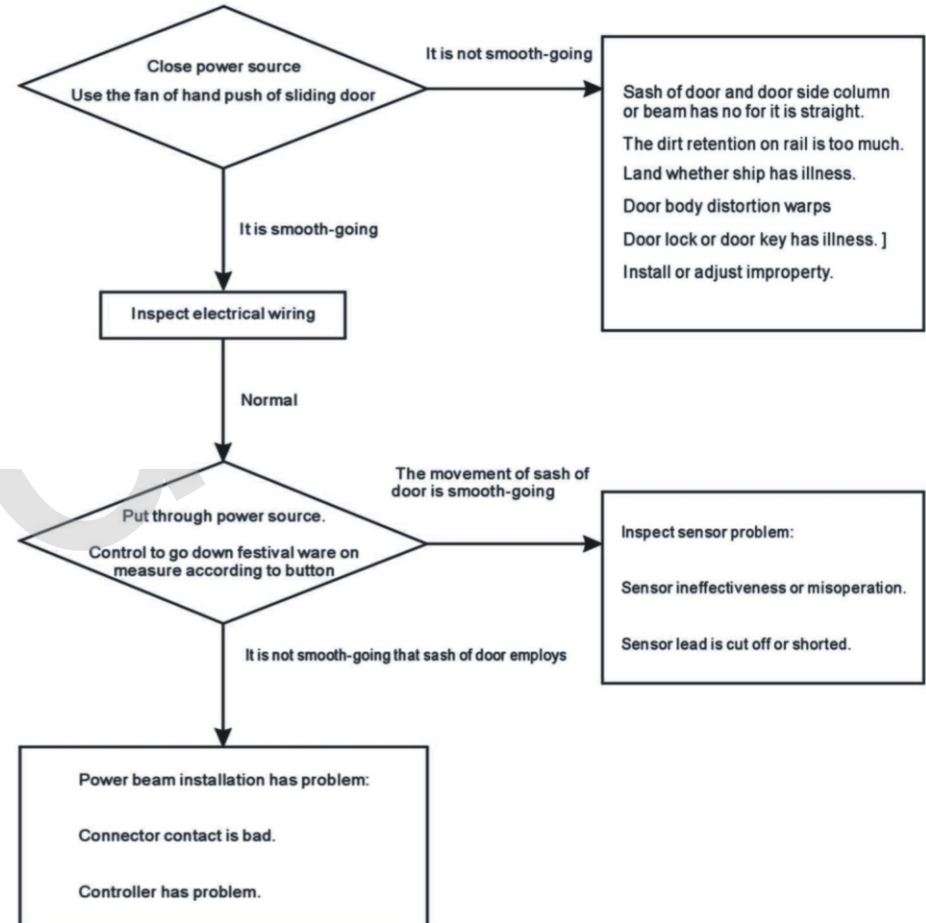
Power beam installation specifications		
Mobile way	Sheet opens type	Pair opens type
Installation method	Surface mount	Surface mount
Weight of door	Below180KGX1	Below180KGX2
Width of door	700-1300mm	600-1250mm
Motor device	DC24Vbrushless	
Opening speed	55-99 c m/s (adjustable)	
Closing speed	55-99 c m/s(adjustable)	
The open time of door	1-10 seconds (adjustable)	
Half-open function	adjustable	
Manual thrust	Below 39N	Below 42N
Collision fuction	Under collision condition, then carry out kick back	
Input voltage AC	175-240V	50/60H z
Input voltage DC	More than 24V/3.5A (backup power)	
Output DC	24V/1A	(use for sensors )
Output DC	12V/0.1A	(used for access keypad)
stand by energy	5-10W	(related to all kinds of sensors)
Power of peak value	150W	(good connection is required)

## A list of device components on surface mount SD280

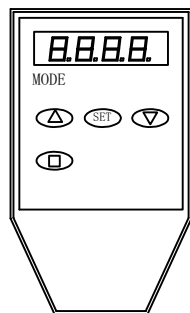
Door body opens form			Single door	Double door
Door weight			Below180KGS*1	Below180KGS*2
Parts name	Parts model	Sketch map	Quantity	
Motor device	1101		1	1
Tension wheel devie	1103		1	1
Hanger device	1104		2	4
Belt fastening device	1105		1	1
Belt fastening device (double door)	1106		1	1
Belt	1107		1	1
Track stopper	1108		2	2
Control device	1102		1	1
Connection terminal	1109		1	1
Transformer	—		1	1
Belt device safety bolt	1110		1	1
Guaranty and Manual	—		1	1

## Inspect step

Automatic door when not move , please press picture step to carry out inspection.



## Description of controller panel



- upwards
  - set up
  - downwards
  - test
- Precautions  
The programmer should be unplugged until power off

### Adjustment method:

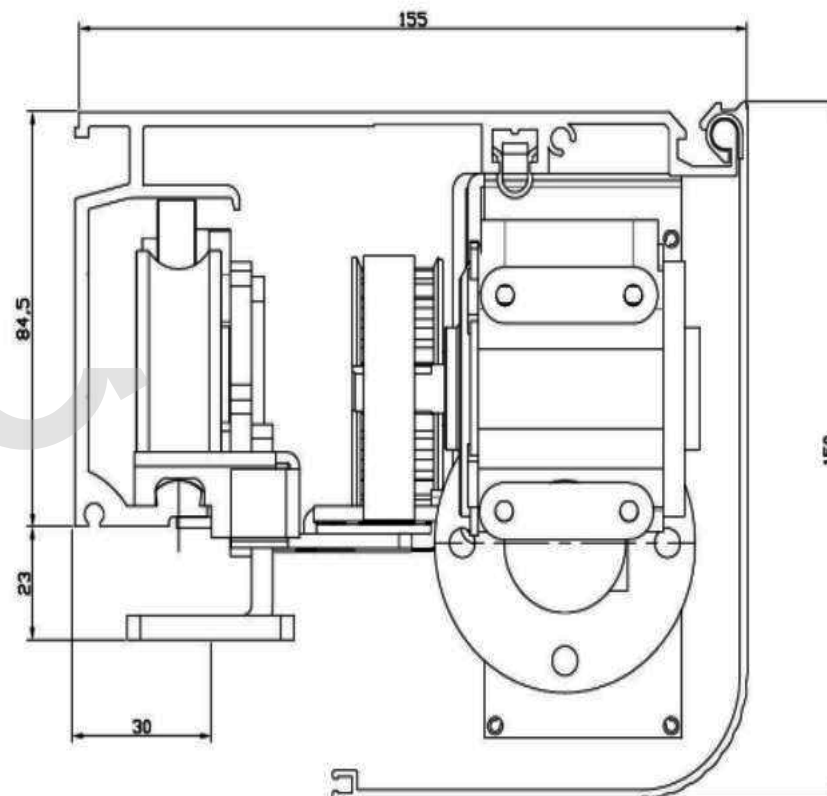
Do not program the opener when checking the closing position of the door. Programmer connect with controller, then it displays "\*\*\*\*\*", you can press "SET" button to set parameters, and then adjusted up or down, press the test button to open the door once.

wait 30 seconds, then press Return to display "\*\*\*\*\*", press "SET" button to select the number, press the "Up / Down" button to adjust the value range, press the "SET" button to save the settings

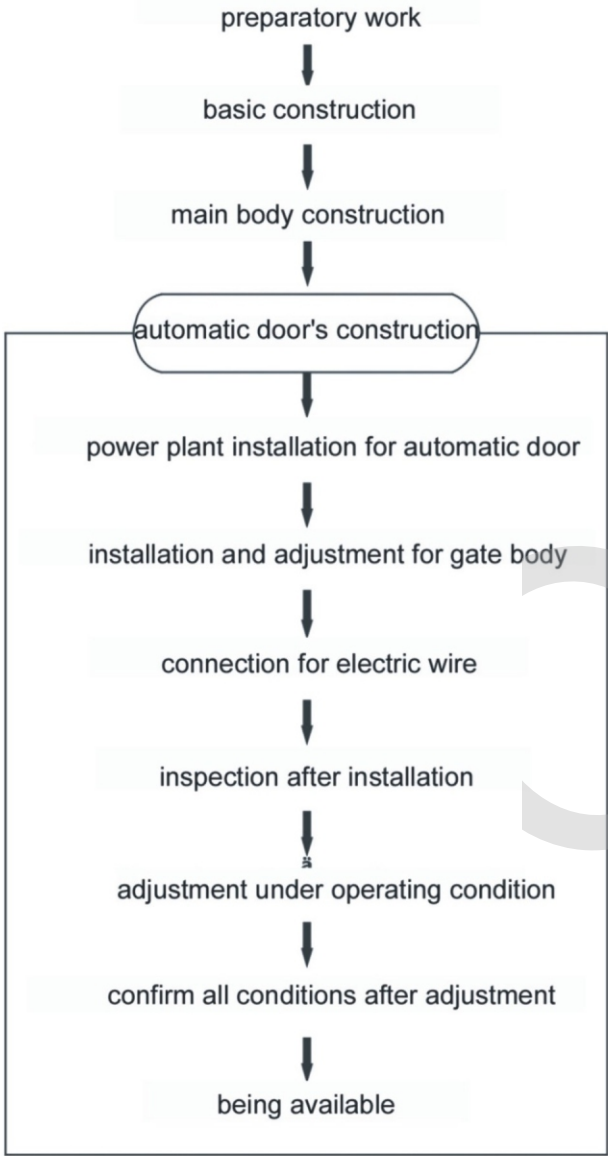
NO	Number Range	initial value	Function explanation
1	10--100	65	Opening speed
2	10--100	55	Closing speed
3	1--10	5	Opening buffer distance's speed
4	1--10	5	Closing buffer distance's speed
5	1--60	35	Opening buffer distance
6	1--60	30	Closing buffer distance
7	0--120	1	<b>Holding opentime</b>
8	0--3	0	Opening signal delayed time
9	0--1	1	Opening direction
A	0--1	0	Second sense(0 means first sense, 1 means second sense)
B	30-- 200	30	The lowest force
C	0--30	0	without lock function
		1--30	with lock function
D	5--100	50	Opening brake
E	5--100	50	Closing brake

## surface mounting the type sectional drawing

### ■ Sectional drawing



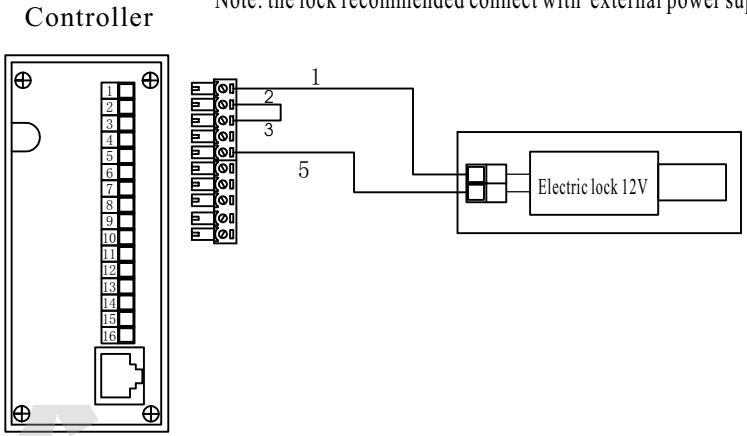
# Installation process of automatic doors



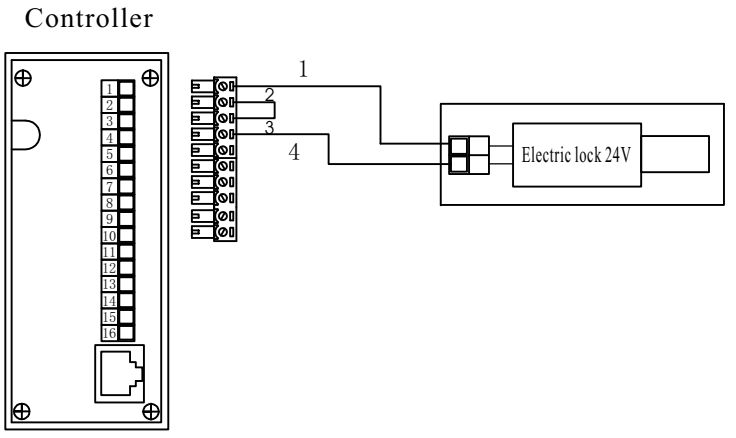
# Electric lock wiring diagram

12V Electric lock wiring diagram

Note: the lock recommended connect with external power supply

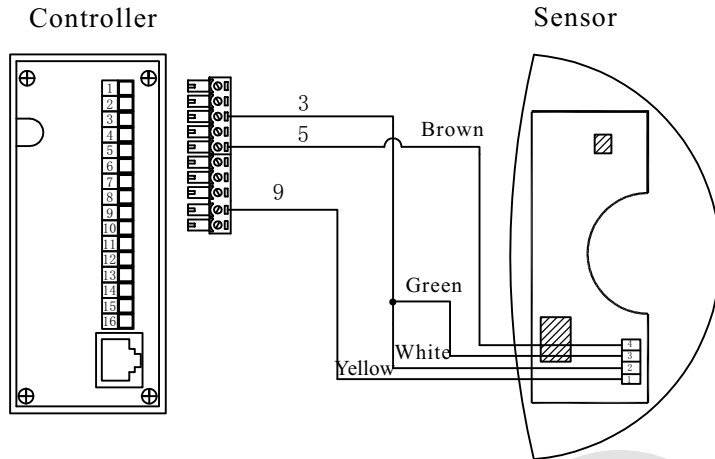


24V Electric lock wiring diagram

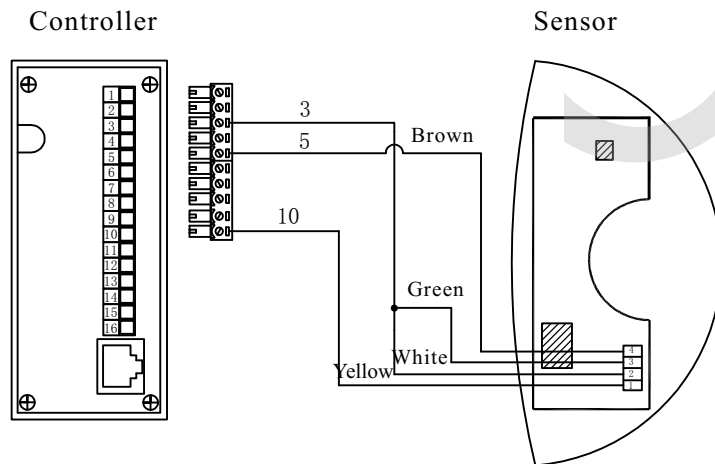


## Internal and external sensor wiring diagram

Internal sensor wiring diagram



The external sensor device wiring diagram



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## The installation of power beam

### Power beam cutting size

1. Cut power beam

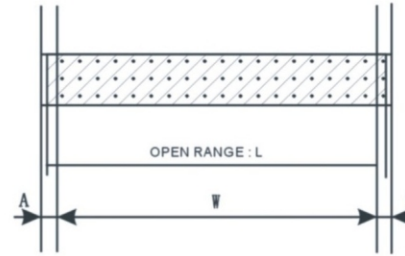
$$\text{Power beam: } L = W + A + B - 5\text{mm}$$

2. drill hole on power beam or horizontal window or wall

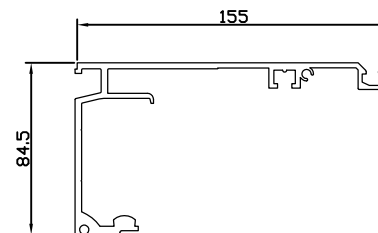
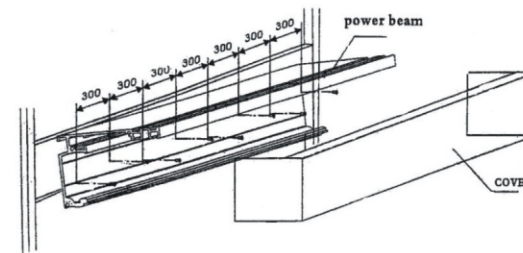
3. drill hole on power beam or cover plate

4. fix power beam on beam by using bolt

Please note, power beam must be in horizontal situation, when install and cut, don't damage the rail, otherwise the function will be damaged and the period for using will be shorted.



### The construction method of power beam

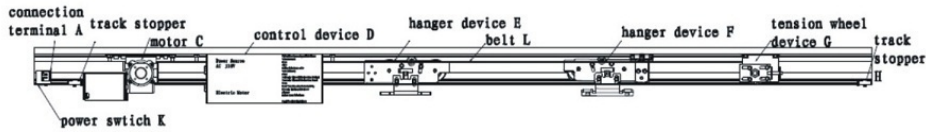


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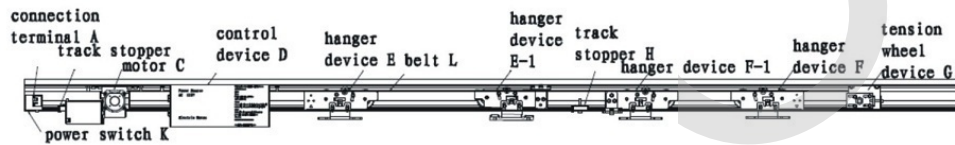
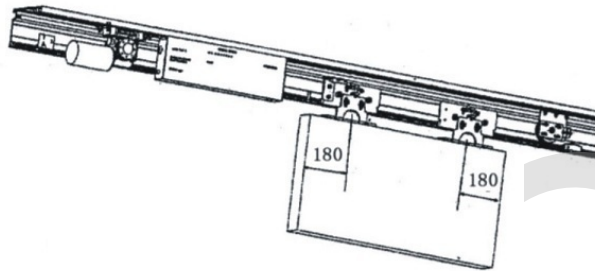


## Installation position of power beam parts

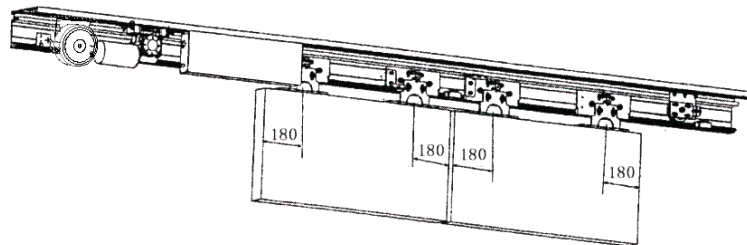
- (1) turn the sets of hanger bolts (M10\*25) in the top of the fixed entry positions, and left the 5mm from group.
- (2) Put the sets of hanger bolts (M10\*25) which is in the top of the door to the Long groove, and attention keep the door level.
- (3) tightened the sets of hanger bolts, fasten the door.



single door

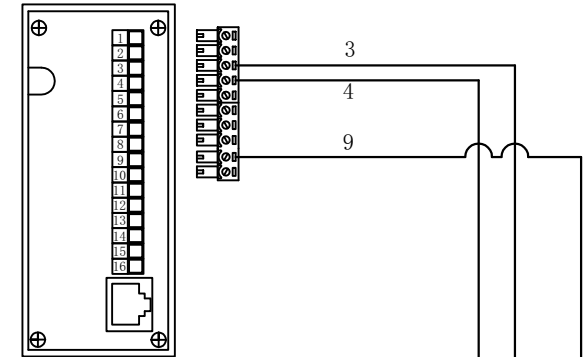


double door



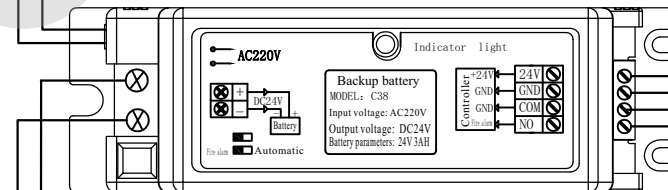
The connection between the backup battery, the battery controller and the controller

Controller

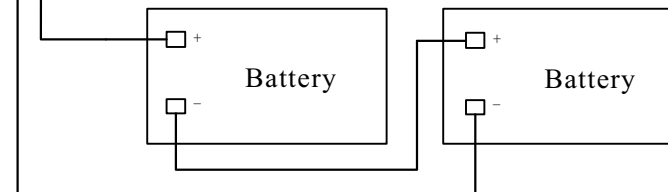


Input power supply 220V

battery controller



Backup battery

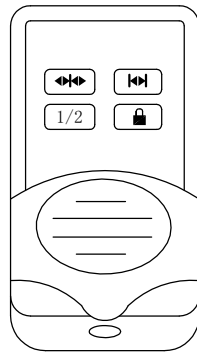


Note: the positive and negative of the battery can not be wrong

## Remote control Learn code and clean code process

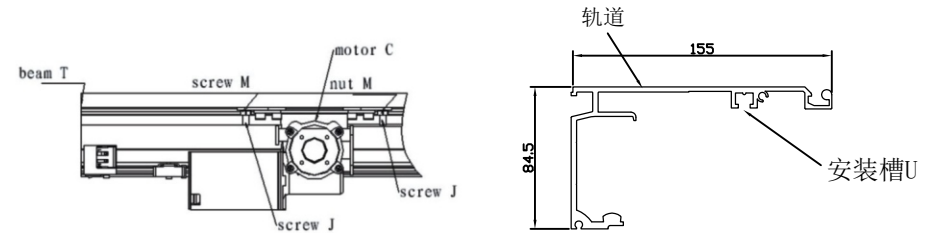
- 1、 Learning code: press the learn button to learn code, learning code lamp lights, it shows that it is learning code , and then press any one of the keys on the remote control, if learning code lights flashing, the code has learned successfully.
- 2、 Cleaning code: keep press the code button (about 10 seconds), learning code lamp light then the lamp off automatically , and then let go of the learn code button, it means the code has deleted successfully.
- 3、 A remote control receiver can learn up to 7 different yards of the remote control.

Remote control



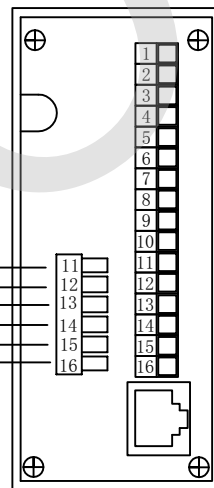
- ◀▶ automatic
- ▶ Normally open
- 1/2 Half open
- 🔒 Lock

## Installation of motor controller and tension wheel device

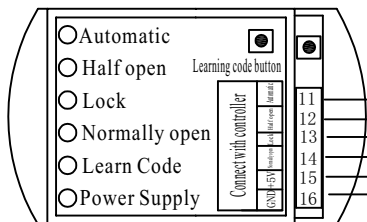


At first, there are total 4 screws J (m6), then put two of them in the Installed groove U-1 of beam T, the other two put in the Installed groove U-2 of beam T. install the motor with 4 screws J, fasten the motor with 4 nuts M (m6), The installation position is 60cm apart from the groove (According to the actual situation of the door).

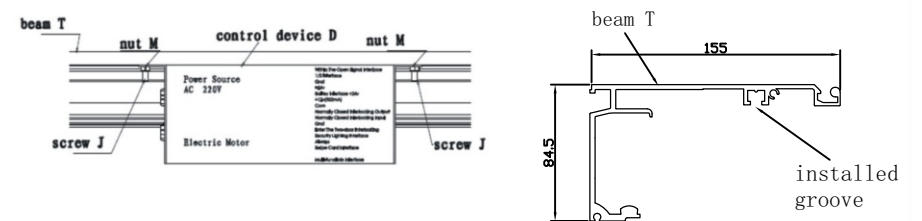
Controller



Remote control receiver



## Installation of control device

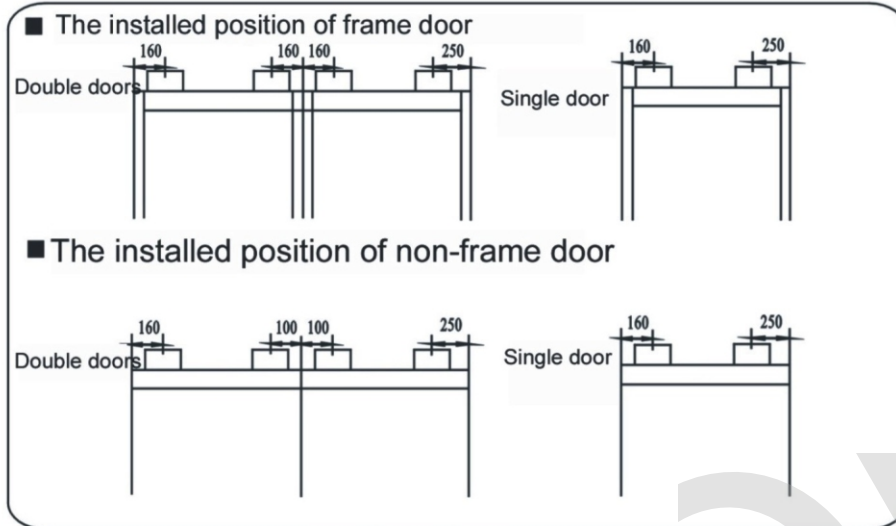


There are 4 pcs of screws J (m6), put 2 pcs of screw on installed groove U-1 of beam T. another 2 pcs on installed groove U-2 of beam T. Then match 4 holes on the control device D with 4 pcs of screws J. and fix them by nuts M (n6)m, the position of the control device installation is 5cm part from motor.

## Hanging operation of door body

- Please install the hanger device on the resigned position by using supplementary bolt group of gate body

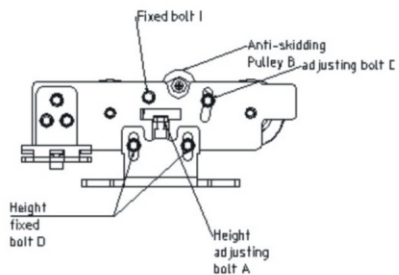
The installed position of hanger device



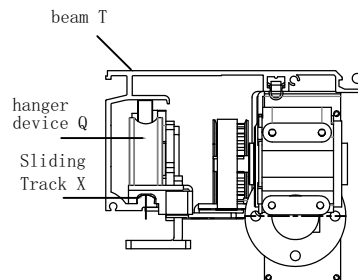
Please note Pulley Center of hanger device and door body should be in the Parallel state. if not, the service life of pulley will be shortened.  
Loose the fixed installed bolts on hanger protective device and lower the hanger protective device. hang the pulley of hanger device to the rail of power beam

Please note, when hanging, don't injure the other components of power beam and rail, or will cause fault of components and short service life of pulley, noise, ect.

### ■ Hanger

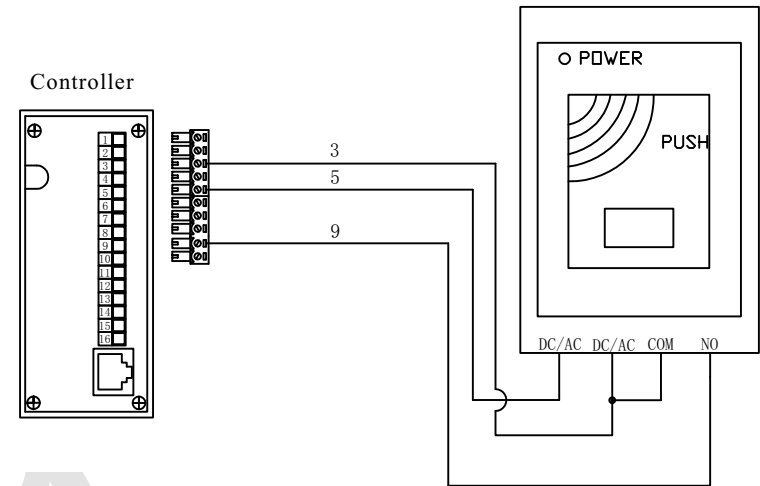


### ■ Installation position of hanger

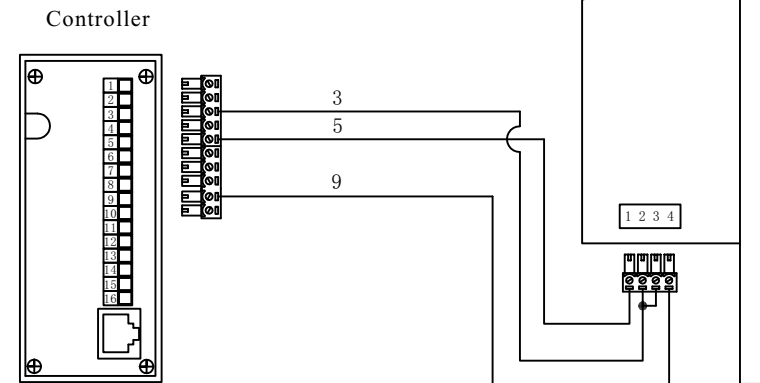


## Hand sensor and foot sensor wiring diagram

### Hand sensor wiring diagram

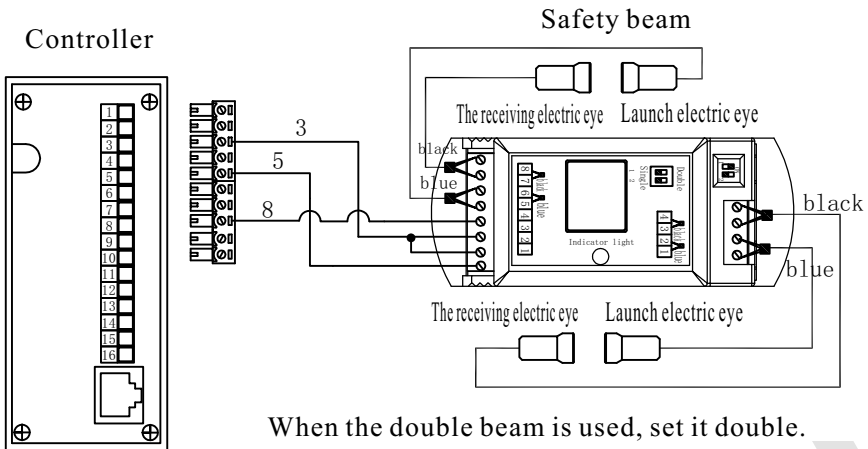


### Foot sensor

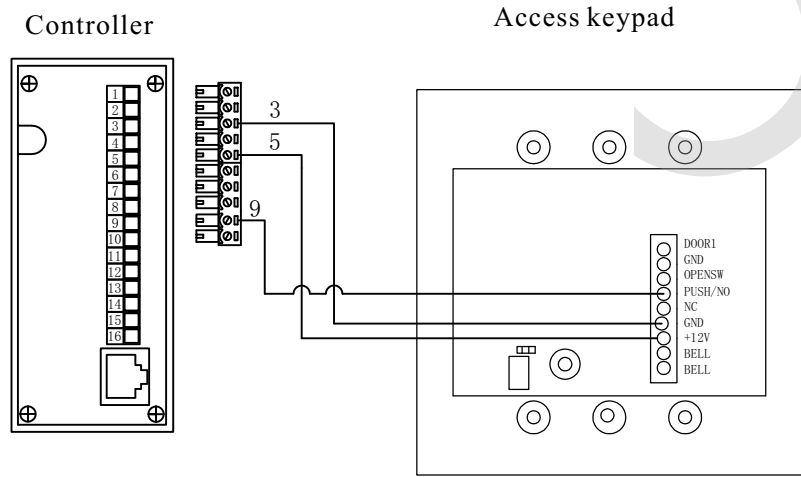


# Safety beam and access control wiring diagram

Double safety beam wiring diagram

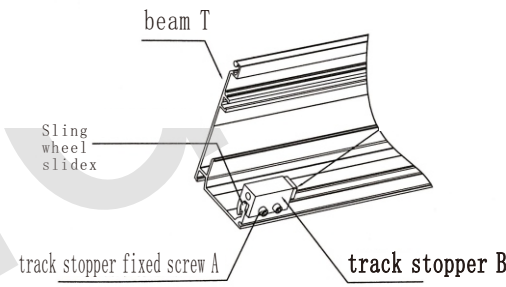


Access control wiring diagram



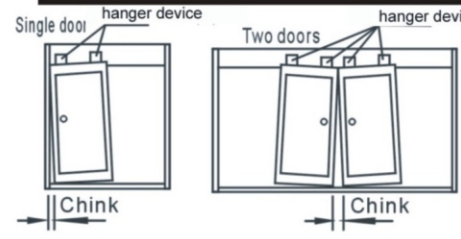
Install the tension wheel device: please put 2 pcs of the screws J (m6) on installed groove U-1 of the beam T. Then match 2 holes on the tension wheel device G with 2 pcs of screws J, and install it, then fixed them by 2 pcs of the nuts M(m6). The installed position is other side of the motor ( please install it, according to door body and belt length).  
 Adjustment of tension wheel device: loose 4 pcs of screws O (m5) and screw Z, tighten the belt, and cage nut. At this moment, the belt is a little loose, please adjust the screw Z clockwise, until the belt is ok. Then fasten the fixed screw O.

## Installation of track stopper and door adjustment



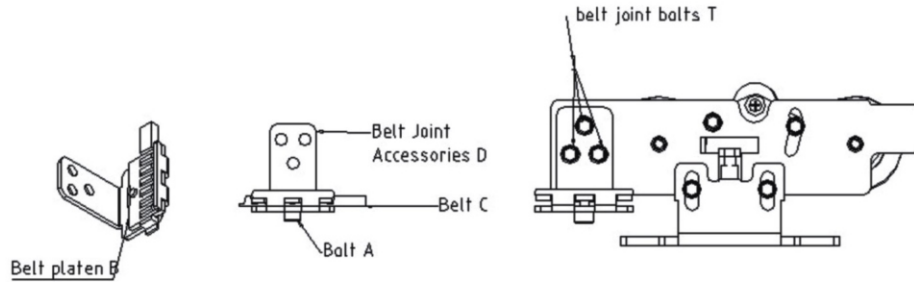
at first, loosen the fixed screw A, put the check stopper's groove in Sling wheel slideX of beam T, then fasten the fixed screw A, the installation position is according to the actual situation of the door.

## The architectural installation high adjustment of door body



If the door can't level when installing, may adjust the hanger of door.  
 1 screw off fixed hanger by nut.  
 2 adjust bolts for installation  
 rise revolving door in clockwise direction  
 drop revolving door in counter-clockwise direction

## Double open-belt installation (only for double door)



1. Put the Belt C on the Belt Joint Accessories D, Then install the Belt platen B on the belt, One side insert into Joint Accessories D's groove, and another side be fastened by Bolt A (M5).
2. Close the door, adjusting Belt Joint Accessories D to make three sure mounting holes are directed at hanger device's mounting holes
3. Fasten the Three belt joint bolts T. the actual situation of the door

### ■ Leather belt cuts off table (double door)

The length = of leather belt  $(DW * 3 + 375) * 2$  Unit: mm

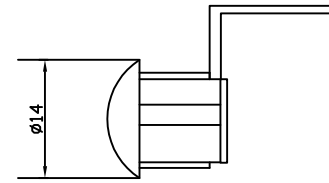
■ Leather belt cuts off table

	DW(mm)	Belt
standard	600~1067	Belt 3200mm

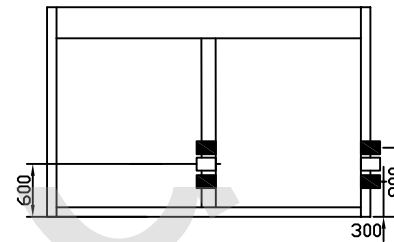
Belt sectional diagram	
DW (mm)	Belt length (mm)
600	4100~4150
750	5000~5050
800	5300~5350
850	5600~5650
900	5900~5950
950	6200~6250
100	6500~6550
1067	6900

## Connection and wiring diagram of safety beam (Optional accessories)

For Basic layman

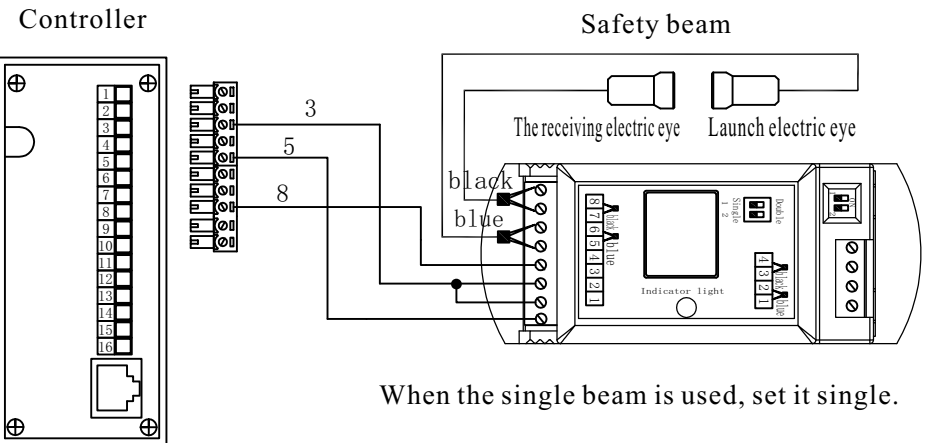


Set basic height dimensions



- 1、 pre - buried hole is arranged on the frame of the two leaves doors, and the position of the two hole should be in the same horizontal plane. The size of the pre - buried hole is 14mm
- Set height: use a set of 600mm when using two sets of 300mm, 900mm
- 2、 Two photoelectric head distance is set within 6m, or will make the door open all the time.
- 3、 Please clear the surface after machining
- 4、 To tie a thing on the auxiliary lead line, to drop it from the frame and pull it out of the hole.
- 5、 Connection line of auxiliary beam sensor should be fixed on the auxiliary lead line, and the pulling connection line of the auxiliary beam sensor into the frame.
- 6、 The connection line of the auxiliary beam sensor should be connect with left side of controller pls refer to the wiring diagram for details
- 7、 Make the probe of the auxiliary sensor buried in the pre - buried hole (two electric heads should be in the same horizontal plane).

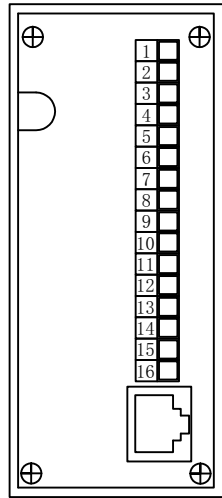
### Single beam safety light wiring diagram



When the single beam is used, set it single.

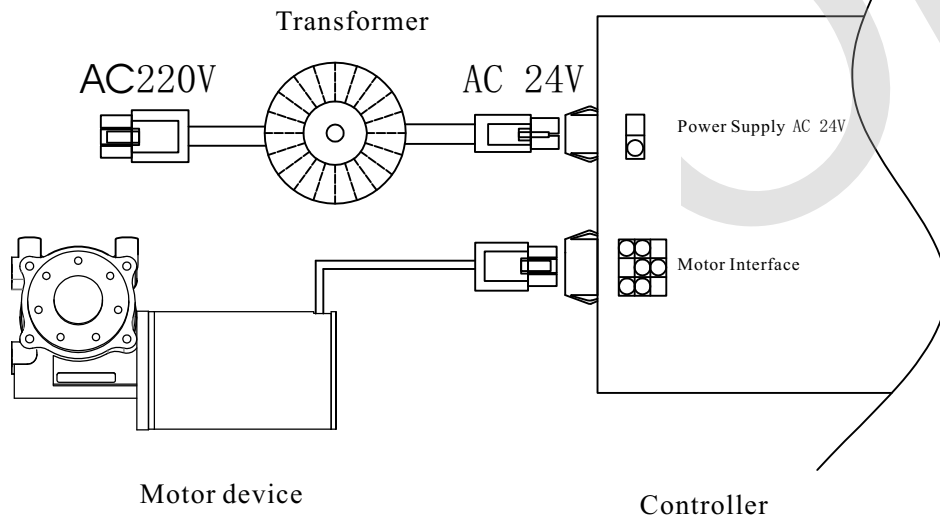
## Electrical wiring diagram

### Introduction for functions of interfaces on controller

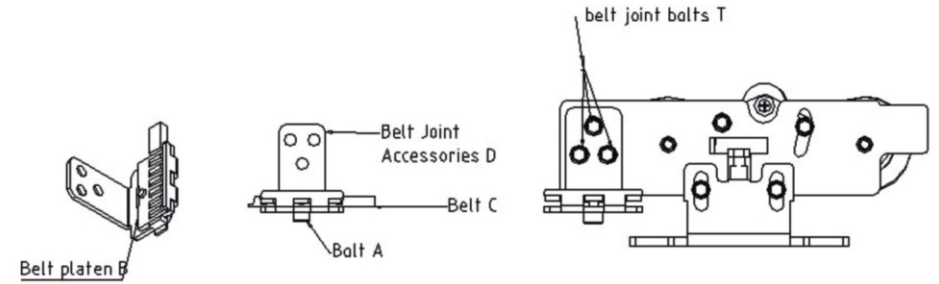


- 1 NO
- 2 COM
- 3 GND
- 4 input Power 24V
- 5 output Power 12V
- 6 Multi functions interface
- 7 Lock input
- 8 Safety beam
- 9 Access keypad
- 10 External signal
- 11 Automatic
- 12 1/2
- 13 Lock
- 14 Open from inside
- 15 +5V
- 16 GND

Debug port



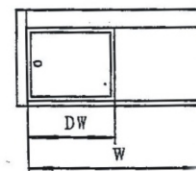
## Single open -belt installation (only for single door)



1. Put the Belt C on the Belt Joint Accessories D, Then install the Belt platen B on the belt, One side insert into Joint Accessories D's groove, and another side be fastened by Bolt A (M5).
2. Close the door, adjusting Belt Joint Accessories D to make three sure mounting holes are directed at hanger device's mounting holes
3. Fasten the Three belt joint bolts T. the actual situation of the door

### Leather belt cuts off table (single open)

The length = of leather belt  $(DW * 3 + 375) * 2$  Unit: mm



Leather belt cuts off table		
	DW(mm)	Belt
standard	600~1067	Belt 3200mm

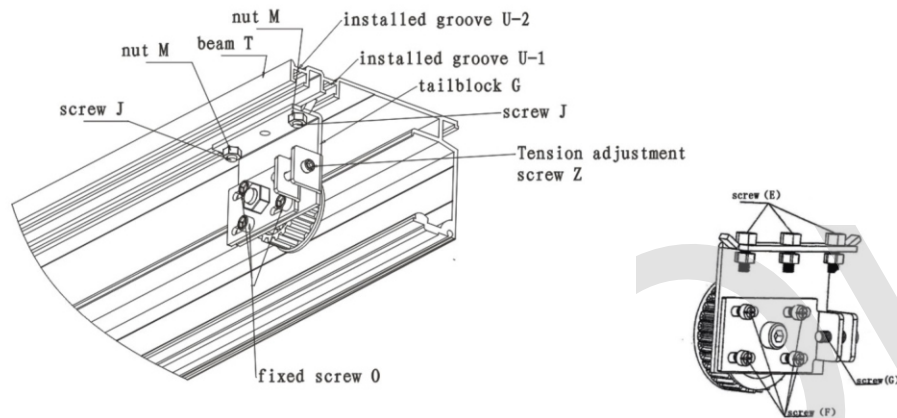
### Belt sectional diagram

DW (mm)	Belt length (mm)
720	2274~2674
800	2350~2750
850	2450~2950
900	2550~3200
950	2650~3200
950~1219	2750~3200

## Installation of tension wheel device

Install the tension wheel device: please put 2 pcs of the screws J (m6) on installed groove U-1 of the beam T. Then match 2 holes on the tension wheel device G with 2 pcs of screws J, and install it, then fix them by 2 pcs of the nuts M (m6). The installed position is other side of the motor ( please install it, according to door body and belt length).

Adjustment of tension wheel device: loose 4 pcs of screws O (m5) and screw Z, tighten the belt, and cage nut. At this moment, the belt is a little loose, please adjust the screw Z clockwise, until the belt is ok. Then fasten the fixed screw O.

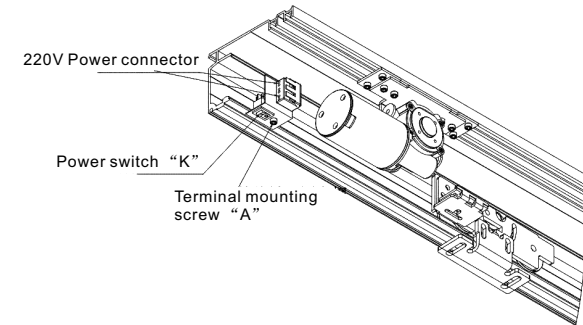


## Belt tension adjustment

Adjust belt tension

- (1) pull the tension wheel to the right side, Make the belt keep tense up, then fasten the nut on the tailor-made screws.(E)
- (2) loosen the four fixed screws.(F)
- (3) turn the screws Along the clockwise (G), make the adjustment plate right move, belt tension expand, adjust the tension suitably.
- (4) Fasten the four fixed screws (F)
- (5) After a period of using belt, It will produce the elongation phenomenon, now you readjust the belt tension, and readjust the step1-4.

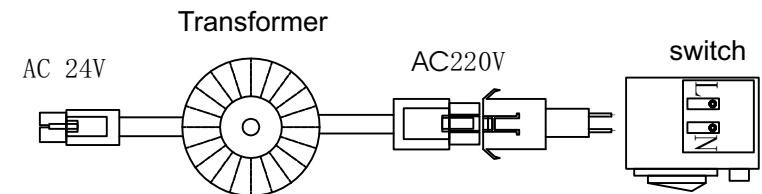
## Installation of terminal



Terminal installation: firstly loosen the terminal mounting screws "A", the position of the power switch "K" should be parallel with hanger roller rail "X" on track, and then screwing tightly terminal mounting screws "A". It should be installed on the back of the motor, the accurate position can be adjusted according to the

## Wiring diagram for power line and sensor

Note: all wiring operation should be carried out under the condition of power off.



Note: the power supply voltage is AC 175-265V, if the power supply voltage is not correct, it will cause fire and electric shock. Wire stripping length is 10 mm and wire diameter is 2.5<sup>2</sup>

It should only connect with the power supply terminal, otherwise, it will cause electric shock, the live line connect with "L", the zero line connect with "N"