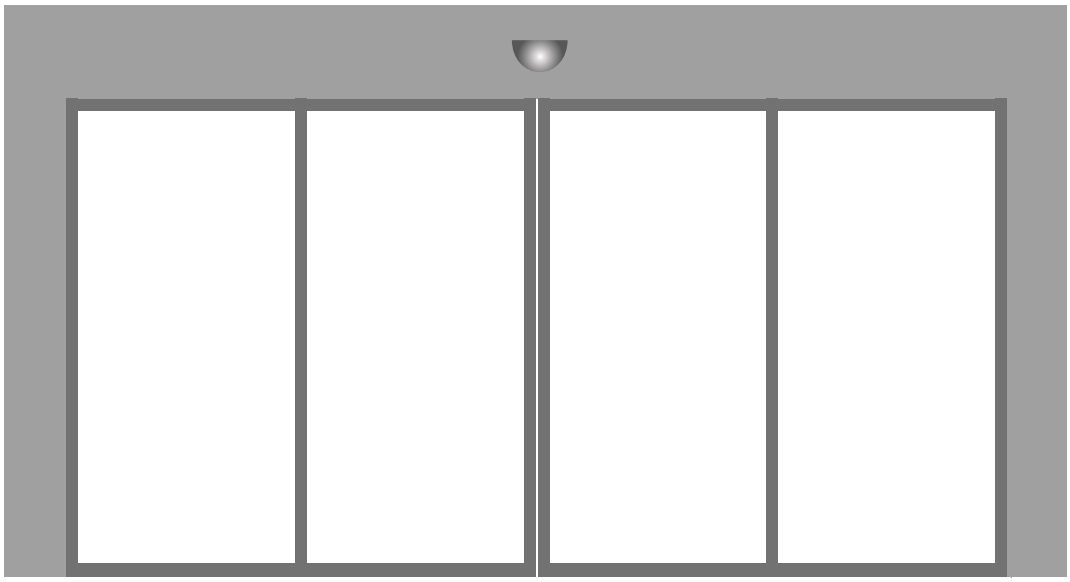
Installation Manual

DSH-250

- Installation of automatic door should be entrusted to the appointed distributor or professional team as installation by non-professionals may result in injury.
- Installation must be performed by professionals only in accordance with relevant decrees and codes for electrical installation.
- This manual must be kept well for product maintenance.



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Product features

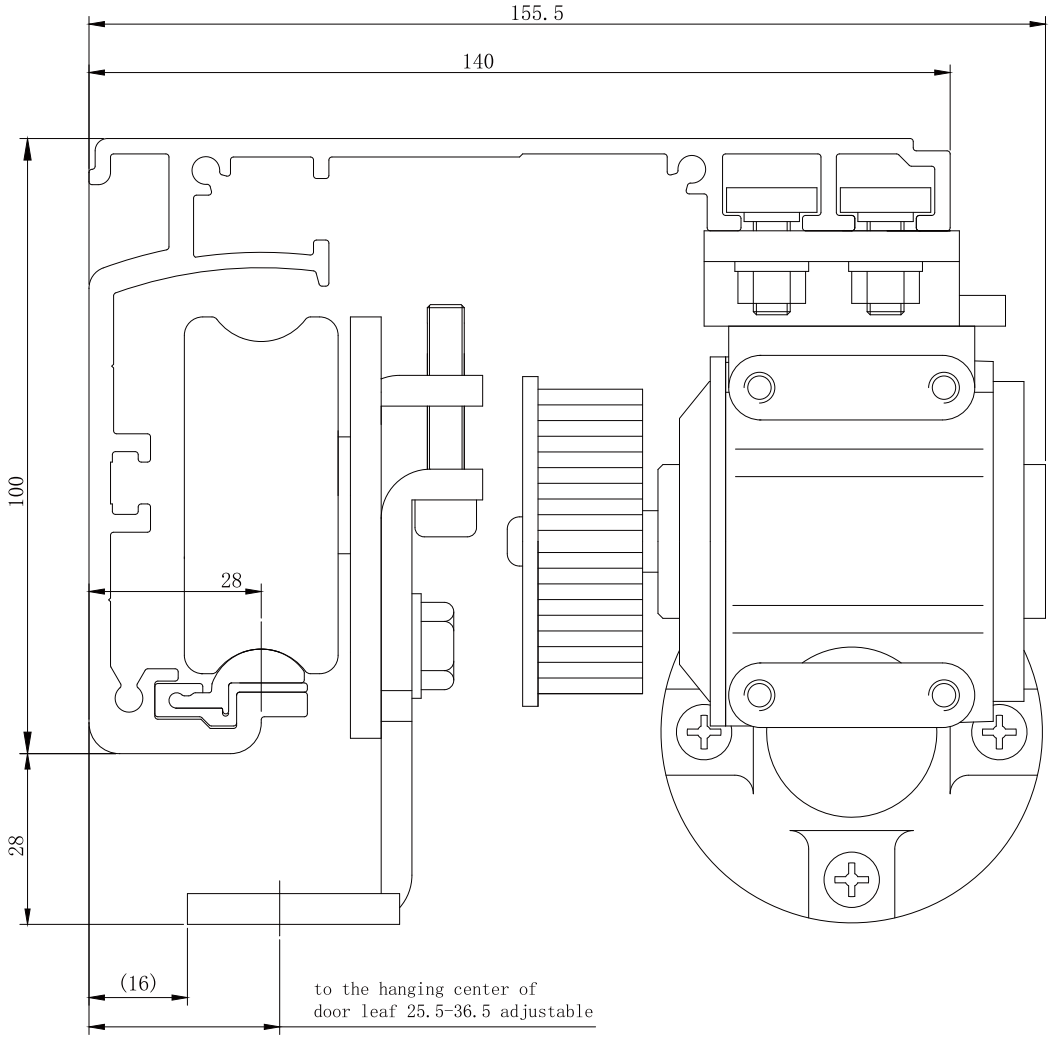
◎ Microprocessor control technology and advanced mechanical manufacture

- Intelligent controlled system, various functions can be adjusted manually or with remote control.
- Remote control has memory of each function.
- Low noise level motor with worm drive gearbox.
- Unique electric locking function: no need to add extra components, safe and reliable.
- Advanced brushless motor design offers high efficiency, high torque and long service life.
- Double-entry interlock function, either door always keeps closed.
- Optional backup power, when power fails, it can be used to keep the door open or continue to operate normally.
- Safety sensor input terminal: the safety sensor will be ignored once the door reaches the fully closed position.
- Built-in detent to keep the door closed fully and tightly after every cycle.
- Installation is simple and convenient.

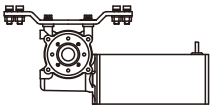
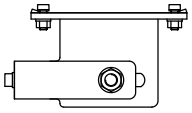
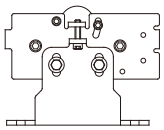
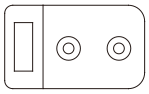
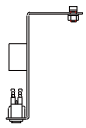
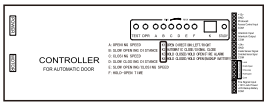
Technical specifications

Door configuration	Single opening	Double opening
Door leaf weight	1x300kgs	2x250kgs
Clean opening	1000mm-2800mm	1800mm-3800mm
Closed force：F	>100N	
Supply voltage	AC220V±10%，50/60Hz	
Opening speed	200-460mm/s (adjustable)	
Closing speed	200-460mm/s (adjustable)	
Hold open time	1-9s (adjustable)	
Push force	＜100N	
Power consumption	＜100W	
Environment temperature	-20℃-+50℃	

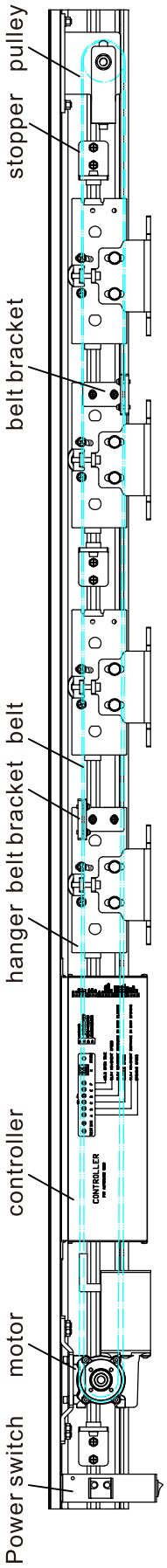
Sectional view of the guide rail



Components List

Name	Drawing	Quantity	
		Single opening	Double opening
Motor		1	1
Belt pulley		1	1
Hanger		2	4
Belt bracket	Left Right	Left 1 Right 1	1
Belt		1	1
Stopper		2	2
Switch terminal		1	1
Controller		1	1
Wire holder		4	4

Component positions in the guide rail



Installation process

◎ Components listed below are in the guide rail packing

Preparation

↓

Guide rail cutting & installation

↓

Sensor installation

↓

Controller installation

↓

Motor installation

↓

Belt pulley installation

↓

Door leaf hanging & adjusting

↓

Belt installation

↓

Belt tension adjustment

↓

Wire connection

↓

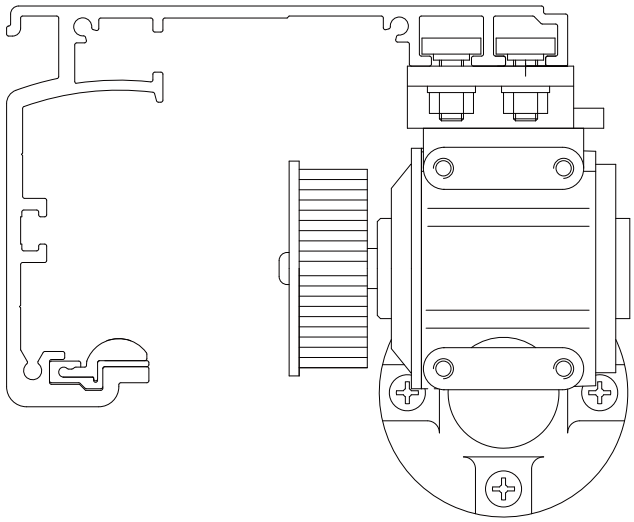
Opening & closing adjustment

Components installation

◎ Use the supplied mounting bracket on the motor, controller, belt pulley etc. to install each component to the relative positions below the square fixing channels of the guide rail.

(1)Loosen the nut on mounting bracket , then insert the channel bolt head into the square groove;

(2)When the component is in position, rotate the channel bolt to 90 ° , then tighten the nuts until secure.

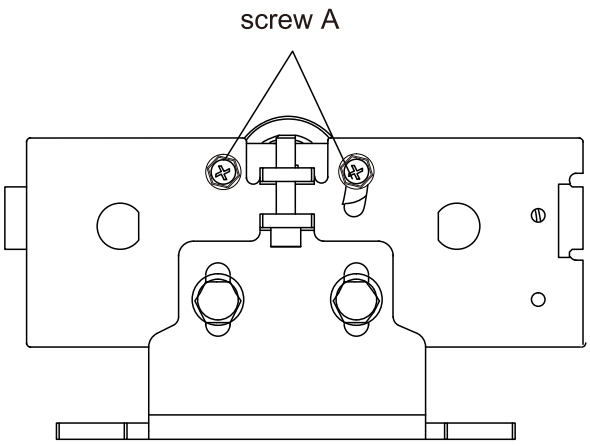


◎ To install hangers, you should confirm the hanger roller are correctly located in the top arc rail of guide rail.

(1)Loosen screws (A), adjust the anti-rise roller to the lowest position;

(2)Install the hangers respectively into the guide rail;

(3)Adjust anti-rise roller position, make sure there is 0.5mm clearance between anti-rise roller and top arc rail and then tighten the screws (A).

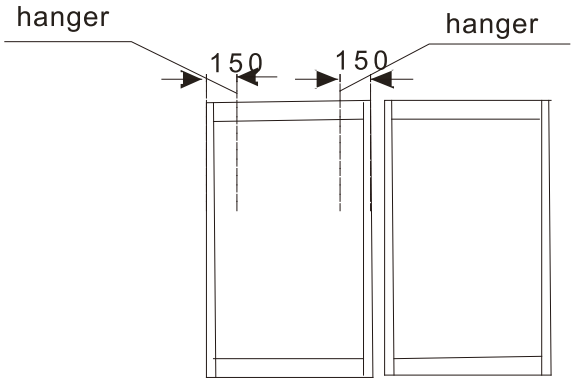


Hanging the door leaf

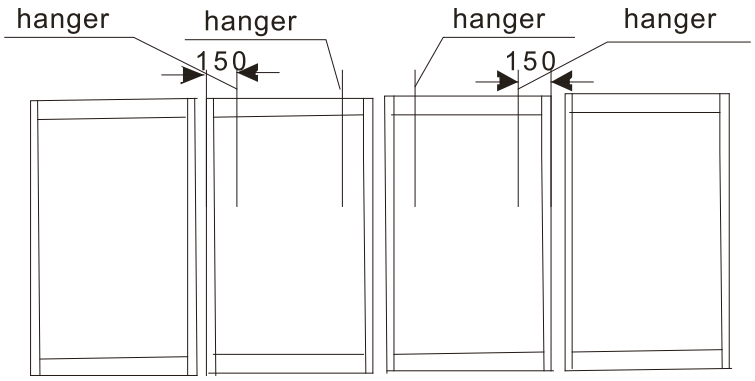
◎ Position the door hangers as follows:

(1)Rotate the hanger bolts(M8X25) on top of door leaf to allow a gap of 5mm;
(2)Put the top bolt set into the long groove of hanger bottom, please note to keep door leaves at level line;
(3)Tighten the bolt sets separately and fix door leaves.

[Single open]



[Double open]



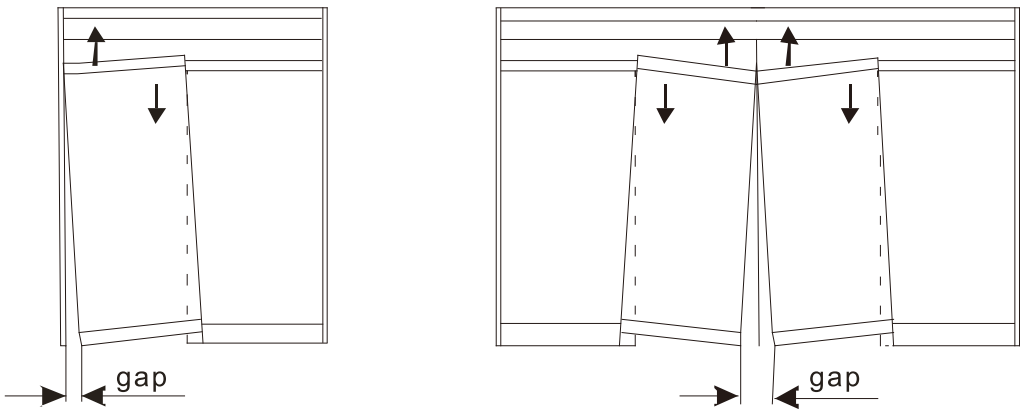
Door leaf adjustment

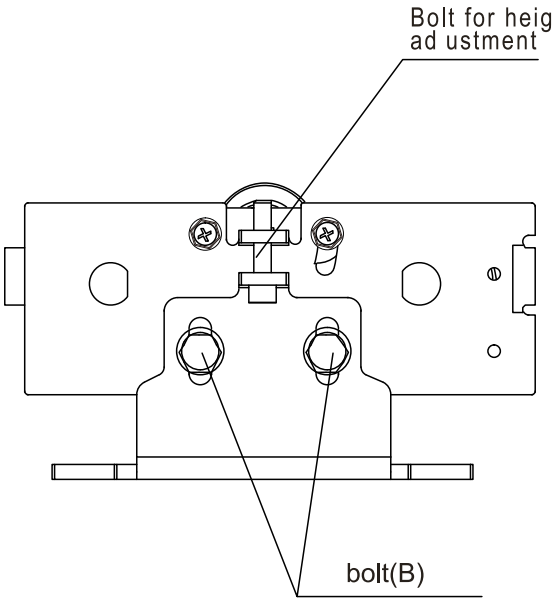
◎ Adjust hanger to achieve door leaf adjustment.

If the gap between left & right door leaf and fixed sidelight is not the same,adjust the height adjustment bolts on each of the hangers until both doors meet at top and bottom and are aligned with fixed sidelights.

a) Firstly loosen hanger bolt (B);
b) Rotate height adjusting bolt until the door leaf is at required height (limit 8mm up and down); To lift the door, turn the adjustment bolt clockwise; To lower the door, turn the adjustment bolt counter-clockwise.
c) Tighten bolt（B）after adjusting.

Note: Door leaves should be opened or closed gently to test for smooth travel and have no friction with static objects,such as guide rail,cover,fixed sidelights and the floor.

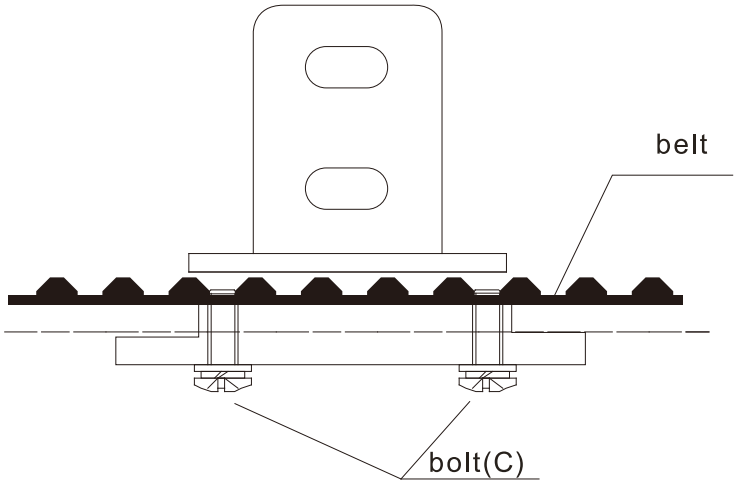




Belt installation

1. Remove 4 x bolt（C）;

2. Insert the cut belt into the square groove of the belt bracket,making the two ends meet in the middle. Then place the compression plate into belt clamp, tighten 4 bolts (C).

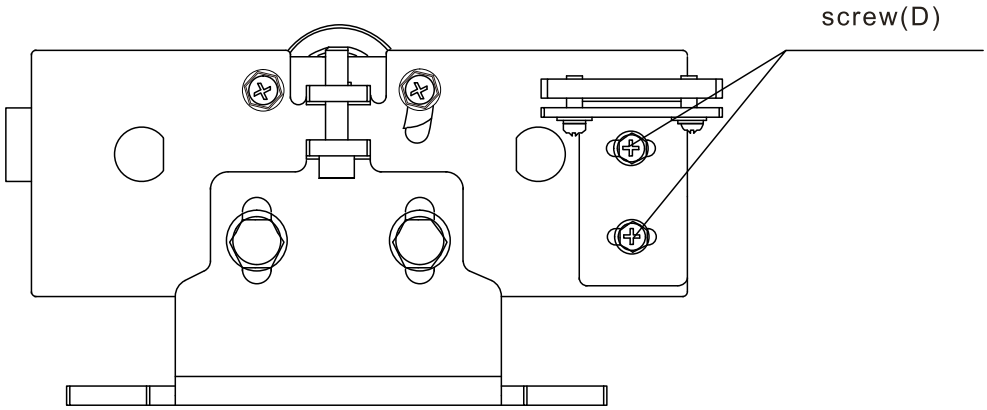


Connect belt and hangers（single open）

(1)Hang the belt on left and right belt pulley;

(2)Attach the bracket onto the hanger by tightening two screws (D);

(3)Adjust belt tension.



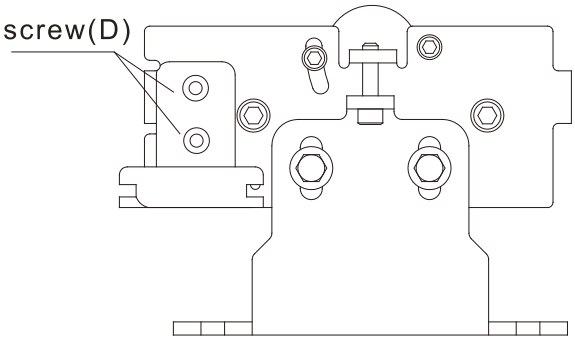
Belt installation

Connect belt and hangers（Double open）

(1)Hang the belt on one pulley only. Attachment of the belt to the second pulley will be done next;

(2)Attach the bracket onto the hanger by tightening two screws (D);

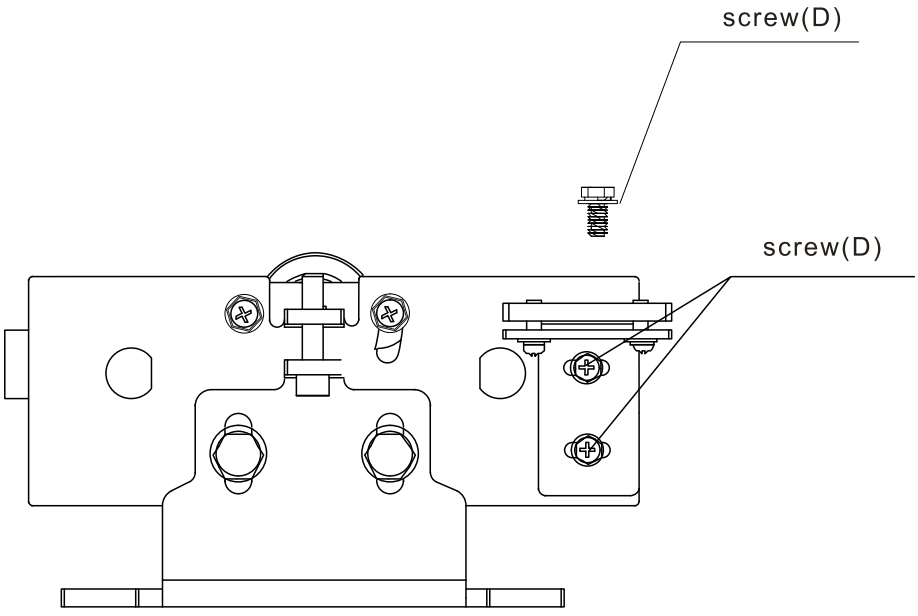
(3)Adjust belt tension.



(4)With one door leaf connected to the belt, move both doors to the fully closed position.

1) Remove the belt compression plate from the idle door and insert belt to the closest position available;

2) Replace the compression plate and tighten the four screws.



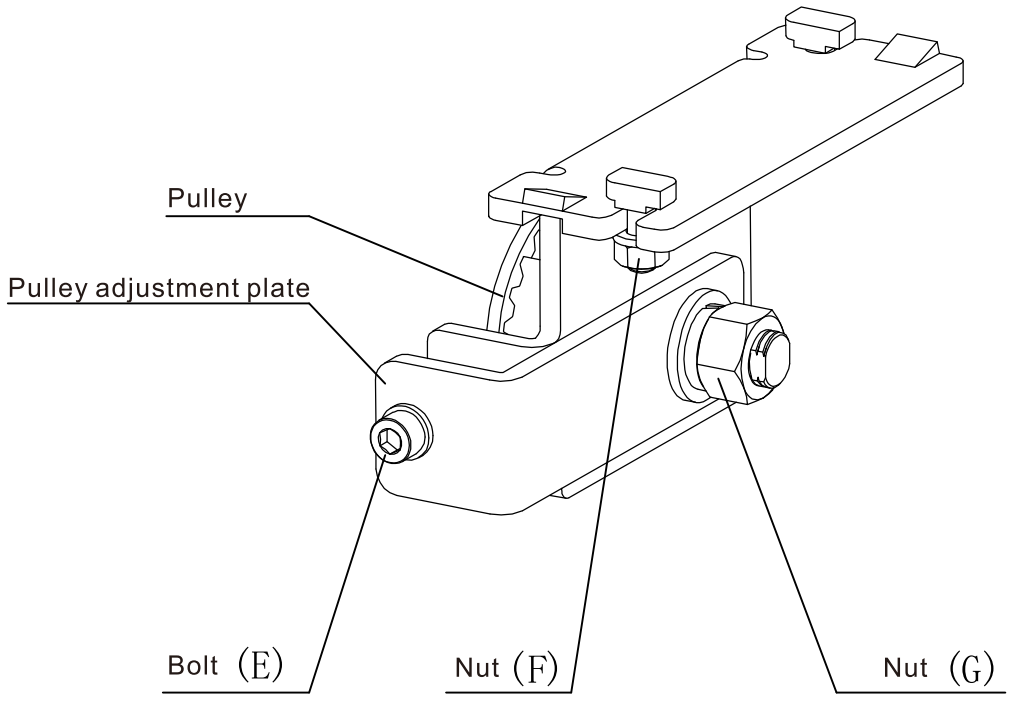
Adjustment of belt tension

◎ Adjust the belt tension pulley to achieve belt tension adjustment

1. With the belt connected and wrapped around pulley,put the pulley to the far right to take up slack in the belt,keep the belt tension,tighten two nuts(F)on the special bolt heads;

2. Loosen the Special Nut(G),Rotate the tension adjustment bolt(E)clockwise to make the adjustment plate move towards the right which will increase belt tension.Stop when desired tension has been reached;

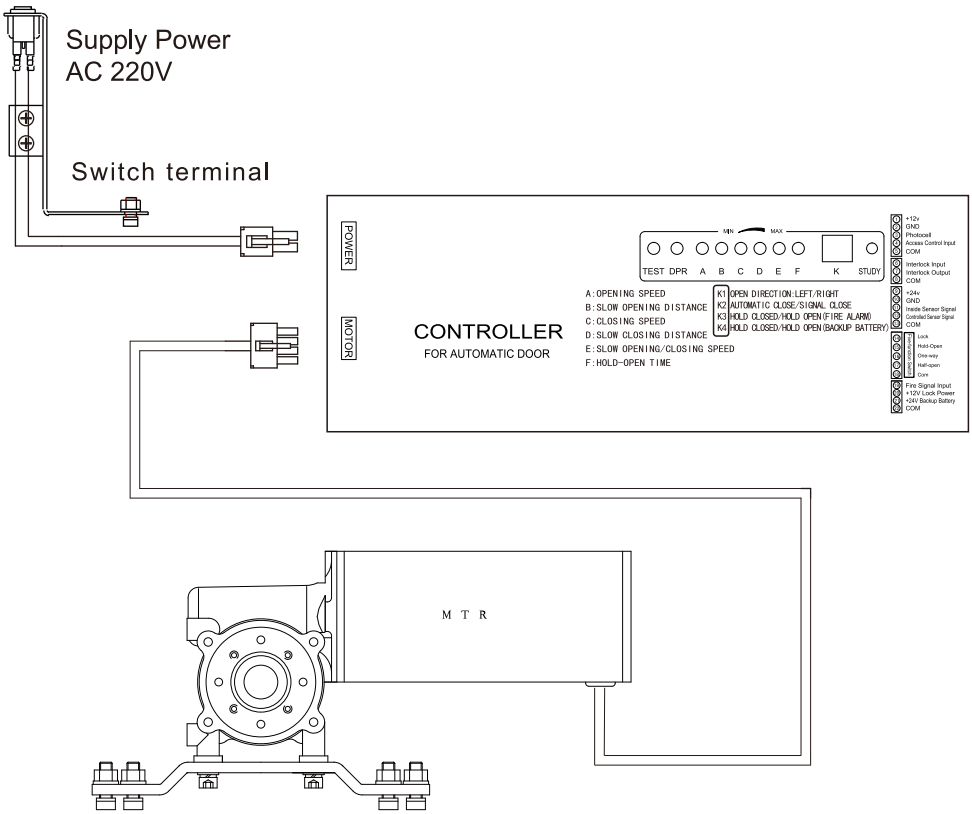
3. After use for some time the belt may stretch slightly and then the belt tension should be readjusted by repeating step(1-2);

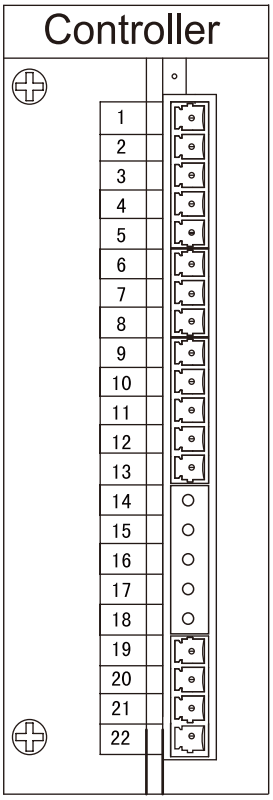


Description of controller and switch terminal

Connection of controller, motor and switch terminal.

Note: All the connections should be performed with the power disconnected from the unit.

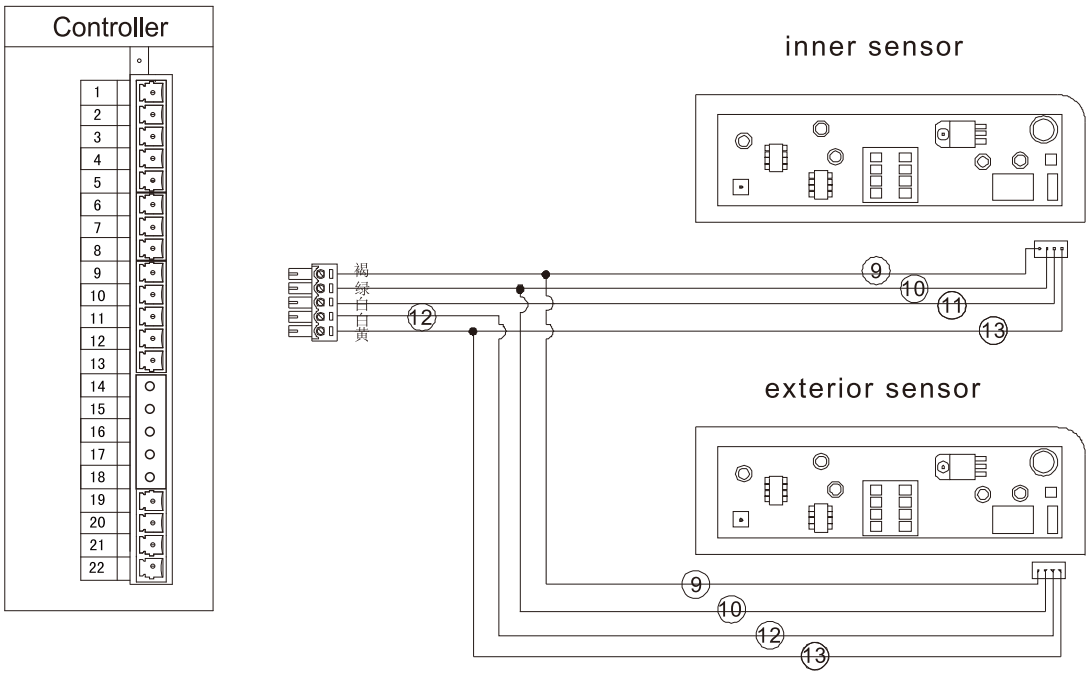




1. +12V
2. GND
3. safety beam input
4. access control input
5. COM
6. inter-lock input
7. inter-lock output
8. COM
9. +24V
10. GND
11. inner sensor input
12. exterior sensor input
13. COM
14. Lock
15. Hold-open
16. One-way
17. Half-open
18. COM
19. Fire signal input
20. +12V lock power output
21. +24V backup power input
22. COM

Connection of sensors

Note: When the door is locked by remote control,the sensor signal is disabled.

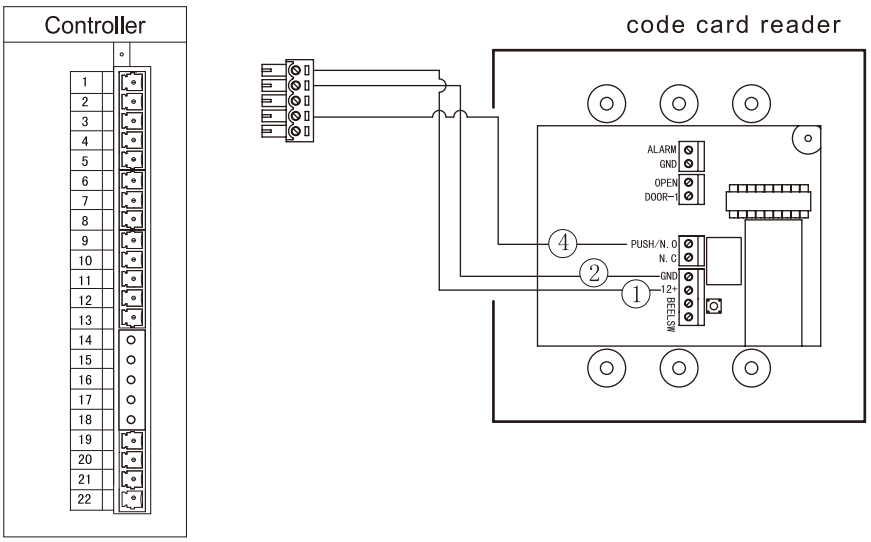


Connection of code card reader（optional）

1.All the wiring operations should be conducted with the power disconnected.

2.Positive or negative polarity should be identified when the card reader is connected.

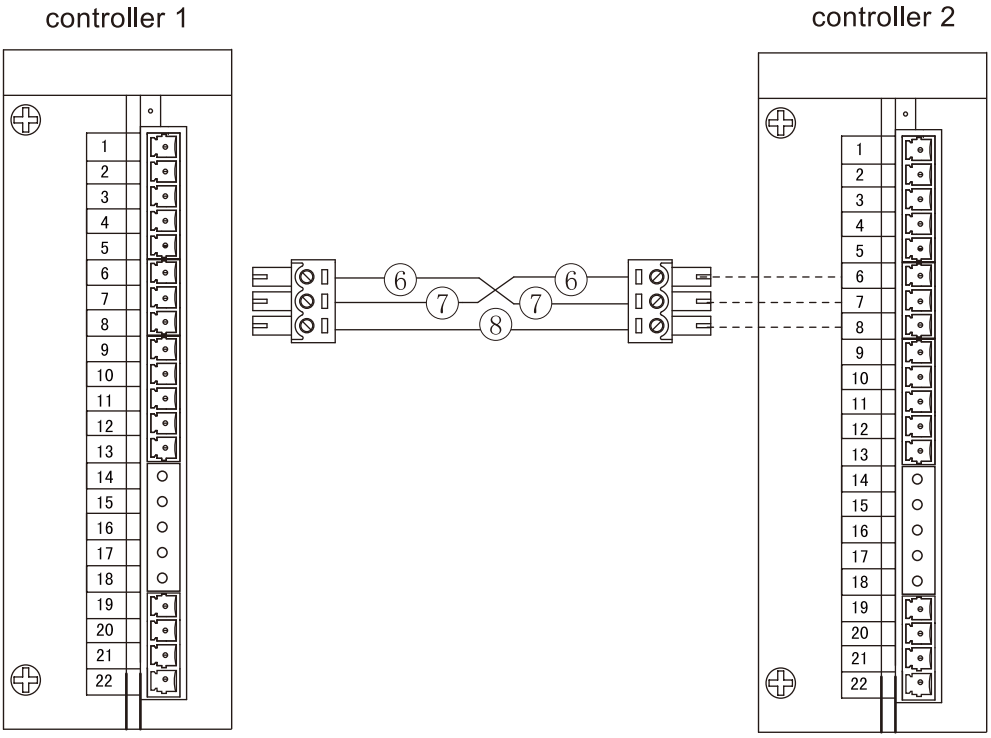
3.At this time the card reader with passive output should be connected. If a card reader with active output is available, it should be changed to passive output.



Caution: If the access control power is greater than 2.4W, it is necessary to supply 12V DC externally. Never feed 12 V power from the automatic door control system because overload will lead to failed controller.

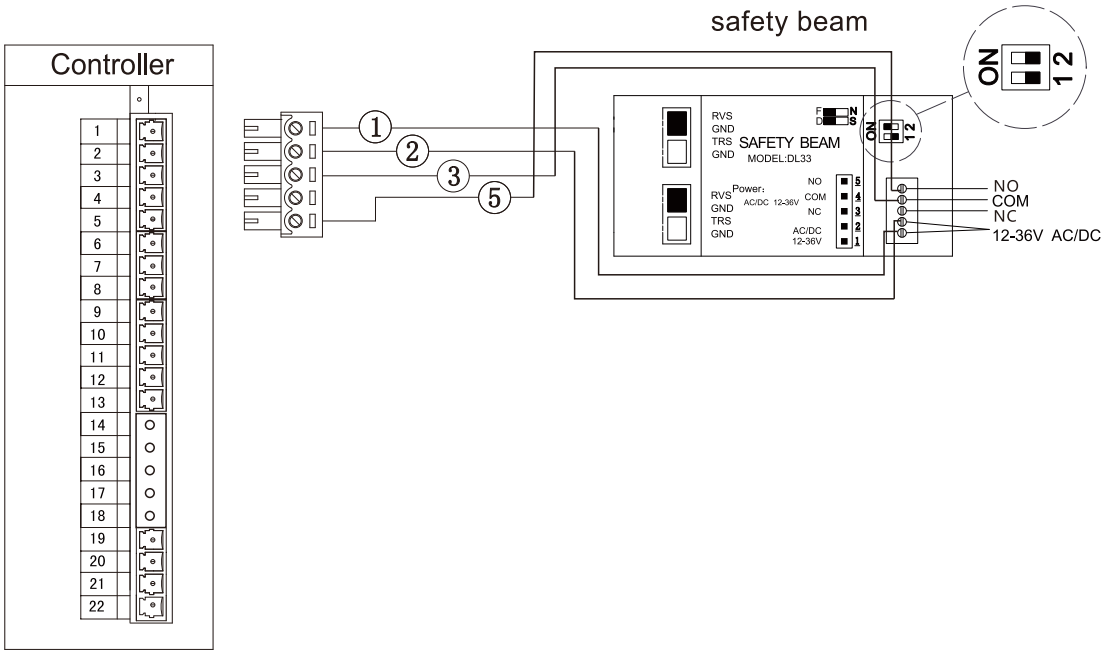
Connection of two-door interlocking

Wire connection drawing



Connection of safety beam(optional)

Caution: All the connecting operations should be conducted with power disconnected.

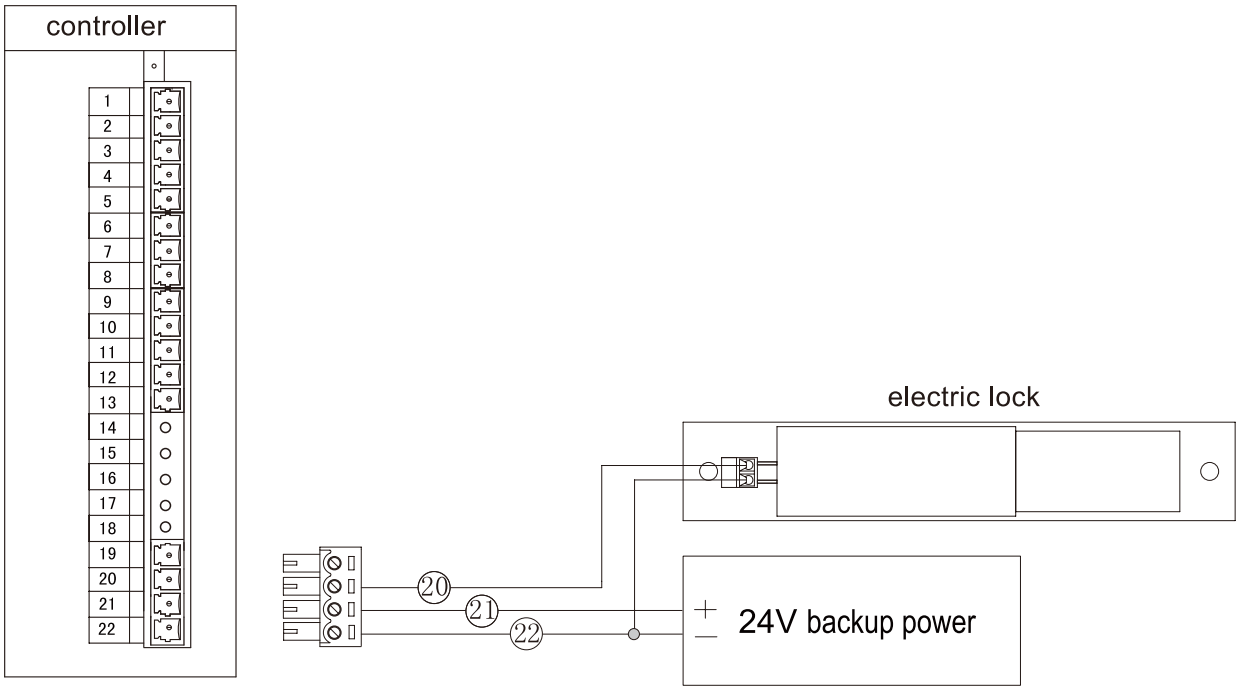


Connection of backup power & electric lock(optional)

Caution: All the connecting operations should be conducted with the power disconnected.

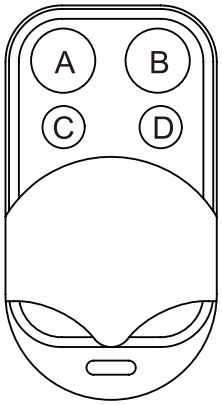
Working current of electric lock is less than 200mA, starting current is less than 800mA.

When connecting backup power please note the polarity and connect as shown in the following drawing:



Remote control instruction

A lock
B hold-open
C half-open
D automatic



Remote control and controller

1.Clearance: Long press button “STUDY” until there is no buzzer sounds, loosen the button.

2.Matching: Press button “STUDY”, it’s buzzing.

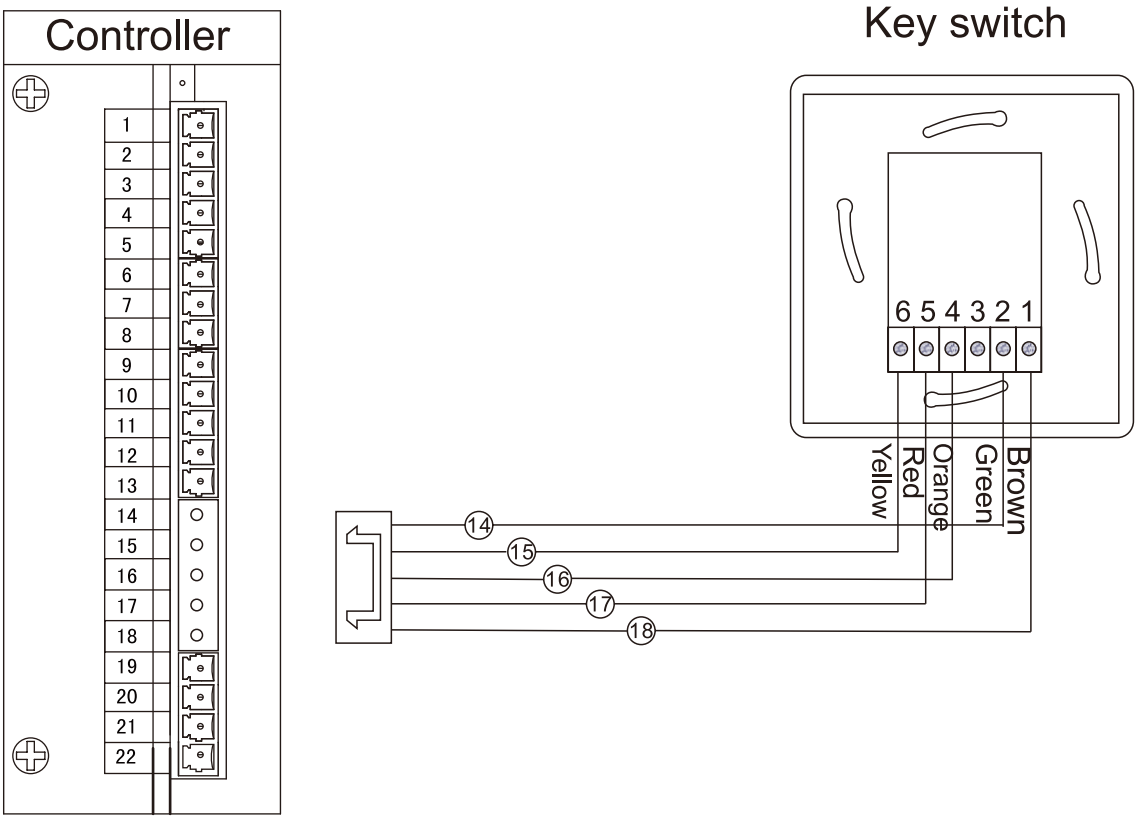
Then press any button on the remote control, buzzer stops sounding, it means matching pairing code is successful.

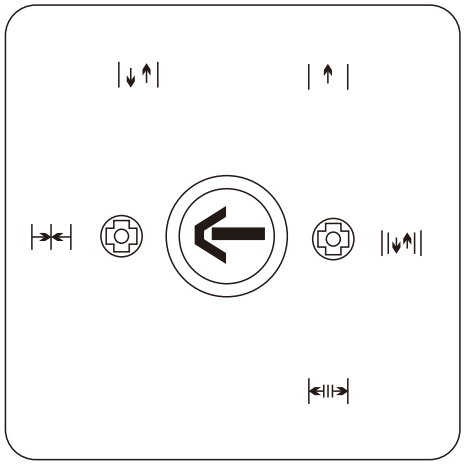
When use the remote control, the buzzer sounds for 2 seconds.

3.Caution: When use remote control, buzzer “beep” twice, it means the pairing code matching is unsuccessful. Please repeat above step 2.

One controller can connect one signal receiver of remote control, at most ten signal transmitters of remote control can be used.

Connection of functional switch





Lock

Automatic

One-way

Half-open

Hold-open

When one-way is connected, the controlled sensor will be shielded.

Operation description

1. After switching on power, the system begins its initial program from the close status. The door leaf will open at a low speed and close again after meeting with the door stopper and confirming the stroke.The built-in micro-processor will memorize the stroke through this open-close cycle.
2. The door operation is as below steps:

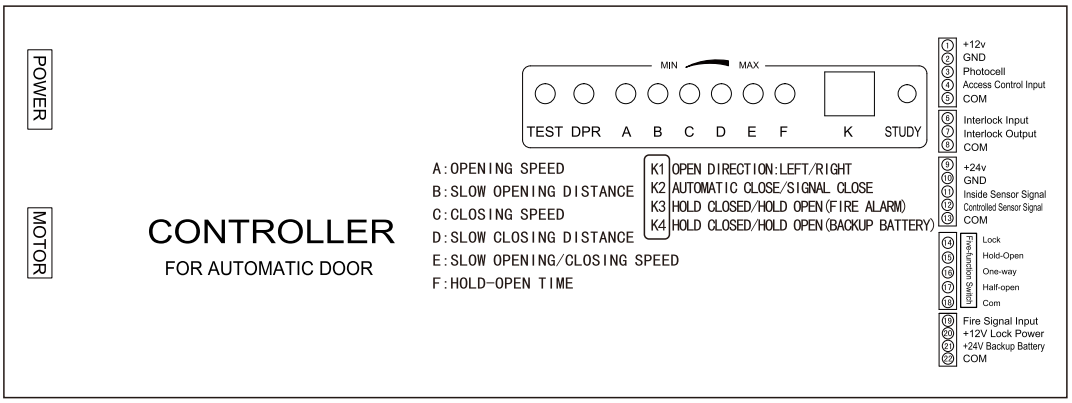
Sensor action → Fast open → Brake → Slow open → Stop after full open

Sensor stop → Hold open time → Fast close → Brake → Slow close → stop

Note: The functional control panel allows the selection of different modes. These modes can be chosen as required.

Adjustment of opening and closing parameters

◎ Name and function of each part in the central controller



TEST：One press initialises a full open and close stroke and can be used for conveniently adjusting every parameter during installation.
DRP：Power indicator. Always on when mains or UPS is available.
K1：Opening direction: Before switching on, push the moveable leaf fully open; switch on, if the door learning is to closing direction, do not change K1; Alternatively, switch K1 to other position for direction change .
K2：Closing automatically or not：K2 is down, the door will close automatically after hold-open time；K2 is “ON”：Only another closing signal can make the door to close after full open.
K3：Closing or opening when fire：K3 is down, the door will open when it receives a fire signal; At “ON” means the door will stay closed when it receives a fire signal.
K4：Status when backup power is available from battery pack：When K4 is down the door will open and close normally；When K4 is “ON”,the door will stay open.
A：Turning counterclockwise will reduce open speed while clockwise will increase speed.
B：Turning counterclockwise will reduce open speed while clockwise will increase speed.
C：Turning counterclockwise will reduce close speed while clockwise will increase speed
D：Turning counterclockwise will reduce close buffer distance while clockwise will increase distance.
E：Turning counterclockwise will reduce buffer speed while clockwise will increase speed.
F：Turning counterclockwise will reduce hold-open time while clockwise will increase the time.

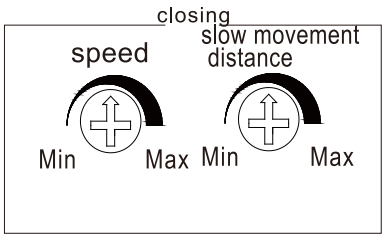
Adjustment of opening and closing parameters

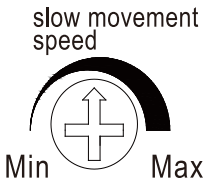
◎ Before power on:

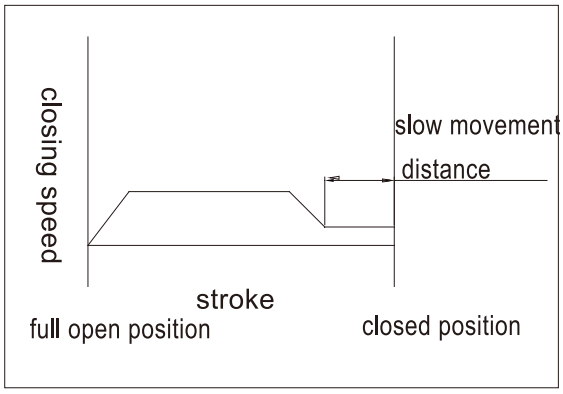
1. Push the door leaf by hand,check the resistance. If the door operation is not smooth, or is noisy, please check the mechanism.
2. Push the door fully open.
3. Switch K2, K3, K4 to positions according desired function.

◎ After power on:

1. Check the door operating direction: if the door leaf is sliding to closing direction,keep K1 at the position where it is; Or, switch off,then turn K1 to opposite position,about 10 seconds later, switch on.
2. Adjust closing operation parameters.

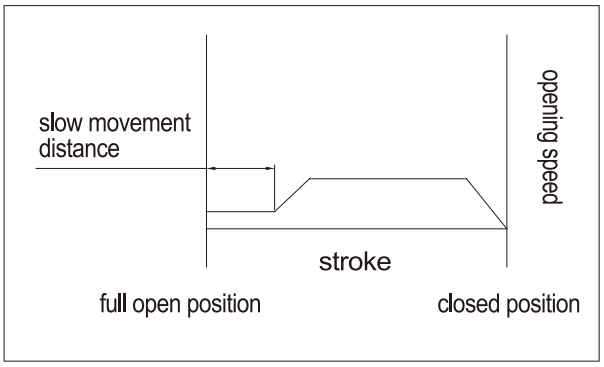






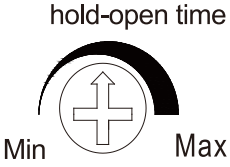
Note: To avoid impact on pedestrian,the closing speed cannot be too fast; to avoid the doors banging together or banging on framework,the slow movement distance can not be too short; to ensure the door can be closed tightly, the slow movement speed can not be too slow.

3. Adjust opening operation parameters.

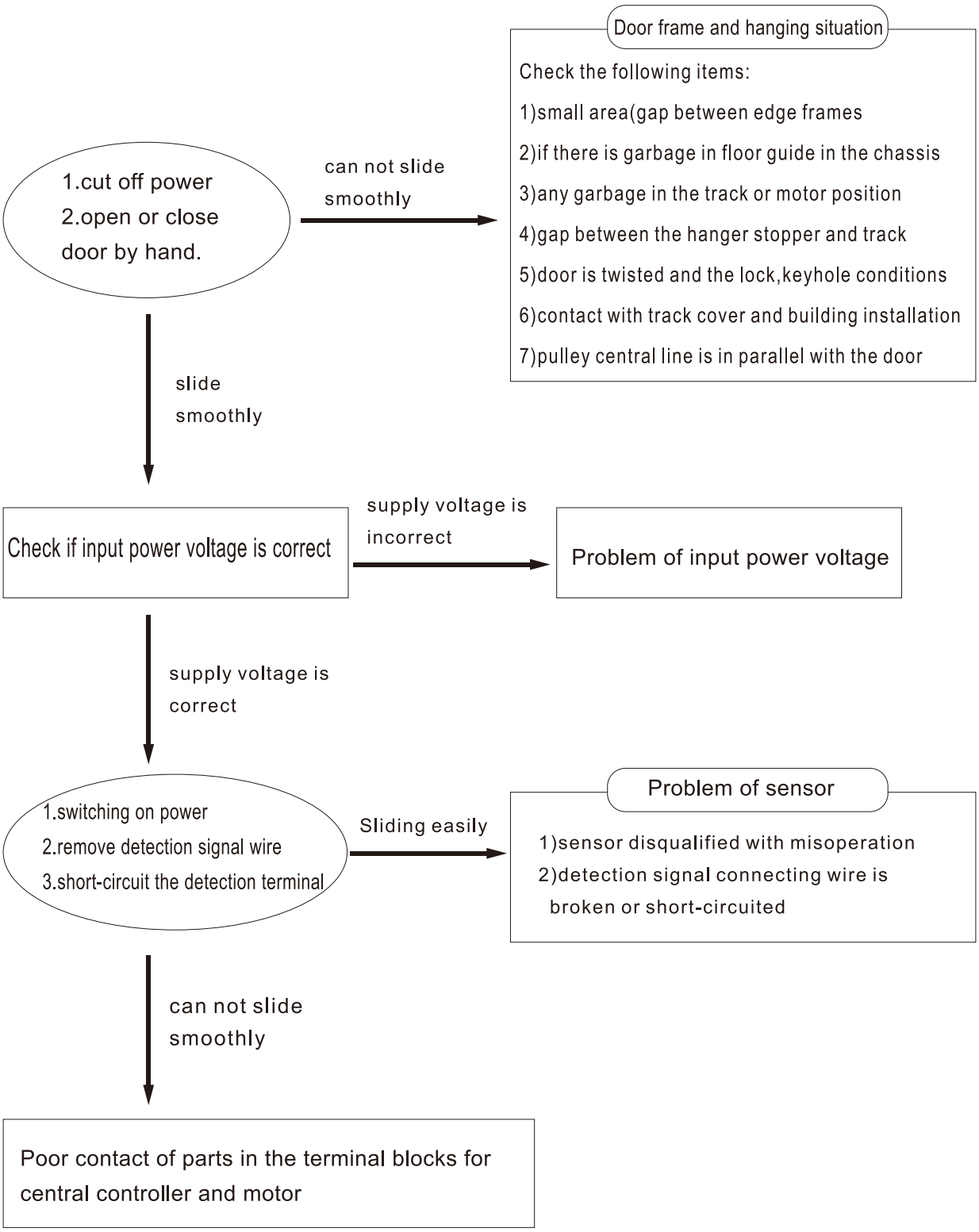


Note: The opening speed should be faster to allow full opening prior to pedestrian passing through; to avoid the doors banging together or banging on framework, the slow movement distance can not be too short; to ensure the door can be opened fully, the slow movement speed can not be too slow.

4. Adjust hold open time.



Troubleshooting



Troubleshooting（continued）

Symptoms	Causes	Check	Solutions
Open and close is not smooth.	● Open/Close speed is set slow ● Slow movement distance set is too wide,visual slow ● Someone is in touch with door leaf when closing, resulting in an abnormal mode. ● Too much resistance	Check open and close speed Slow movement distance is short Cut off power and open by hand If any garbage in the guide rail. If damage or loose of floor guide make the door leaf touch the rail and lock. If there is any obstacle.	Reset the Open / Close speed Reset the slow movement distance Make sensor work by entrance and exit of people to make door close temporarily. Remove garbage. fix the lock. Install the floor guide properly. Clear obstacle away.
Door leaf over-tight	● slow movement speed is too fast ● slow movement distance too short		decrease the slow movement speed increase the slow movement distance
Door doesn't work.	● power not switched on ● door locked ● garbage in the track ● poor electrical connection ● double-door interlocking ● Auto-door is under protection because of great resistance. ● The slow movement speed value is set too small.	Check the power switch of breaker and motor. Check if the door is locked. Turn off power to check if the door can move easely. Something is wrong with the connector.	Switch on. Open the door lock. Remove garbage. Check the connector for good contact. Wait till the other door is closed. Switch off and check the resistance Screw the button E clockwise slowly, because fast action will cause collision.
Door doesn't open fully.	● under half-open mode ● buffer speed is too small.	Check fully/ half-open switch.	Change to fully-open mode. increase buffer speed by screw button E clockwise.

Troubleshooting (continued)

Symptoms	Causes	Check	Solutions
Door doesn't close.	● Sensor keep on working.	There is object cause misoperation within the detection range	Clear away the moving object
		There is no object cause misoperation within the detection range	Replace sensor
	● Safety beam keep on working.	Check if the safe beam detector has any contaminant.	Clear away the garbage on the safety beam detector
		Optical axis is deviated.	Adjust optical axis.
	● Detection signal wire short-circuited.	Check if the door will close after removing the control signal wire connect to the terminal switch.	Change signal wire.
Door keeps opening and closing with no stop.	● Misoperation of sensor		
	There is some movable objects in the detection area.	check	Remove the movable from the detection area
	There is strong wave near the door	check	Remove the strong wave sender
	Coinciding with other detection area	check	Change the anti-interference switch
	There is fluorescent in the detection area.	check	Move the fluorescent away from the detection area
	Poor sensor	Sensor bounce	Replace sensor
Door comes into great collision	● Significant speed reduction, but with a great collision.		Turn button (E) slowly anti-clokwise
	● Belt is loose		Adjust belt tension.
	● No speed reduction when door opening.		Turn button (B) slowly clockwise
	● No speed reduction when door closing.		Turn button(D) slowly clockwise

The Product Has Passed ISO 9001:2015 Quality Management System Certification.