Mbsafe®

# Operation Manual(Four)

## Sliding Door Operator

# Contents

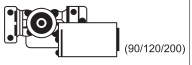
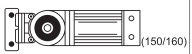
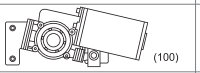
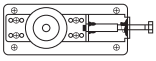
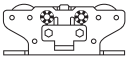
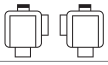
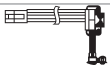
# Microcomputer Automatic Door Unit Specification And Performance Parameters



| | | | |
|---|---|---|---|
| Power beam device specifications | Auxiliary light sensor without | 12010 | 12010 |
| | Auxiliary light sensor | 12011 | 12021 |
| **Door sliding mode** | | Single open | Double Open |
| **Door leaf weight** | | 120~200kg(According to the type of undetermined) | 120~200kg(According to the type of undetermined) |
| **Door width** | | 700-1300mm/s(adjustable) | 600-1250mm/s(adjustable) |
| **Open rate** | | 150-750mm/s(adjustable) | 150-680mm/s(adjustable) |
| **Closing speed** | | 100-680mm/s(adjustable) | 100-650mm/s(adjustable) |
| **Power outage manually opening and closing force** | | ⩽40N | ⩽45N |
| **Control** | | Micro processing controller | Micro processing controller |
| **Installation** | | SMT | SMT |
| **Motor** | | 24V55W Brushless DC Motor | 24V55W Brushless DC Motor |
| **Semi-open feature** | | And it takes another half-open connector | And it takes another half-open connector |
| **Door open** | | 0-10 seconds (adjustable) | 0-10 seconds (adjustable) |
| **Collision function** | | Under the conditions of a rebound in the collision | Under the conditions of a rebound in the collision |
| **Voltage** | | AC85-265 50Hz-60Hz | AC85-265 50Hz-60Hz |
| **Input Current (AC220V pm)** | | 0.095A/1.35A | 0.095A/1.35A |
| **Operating Temperature** | | -30$^{O}$C~+50$^{O}$C | -30$^{O}$C~+50$^{O}$C |

# Surface-Mounted Power Unit Parts List

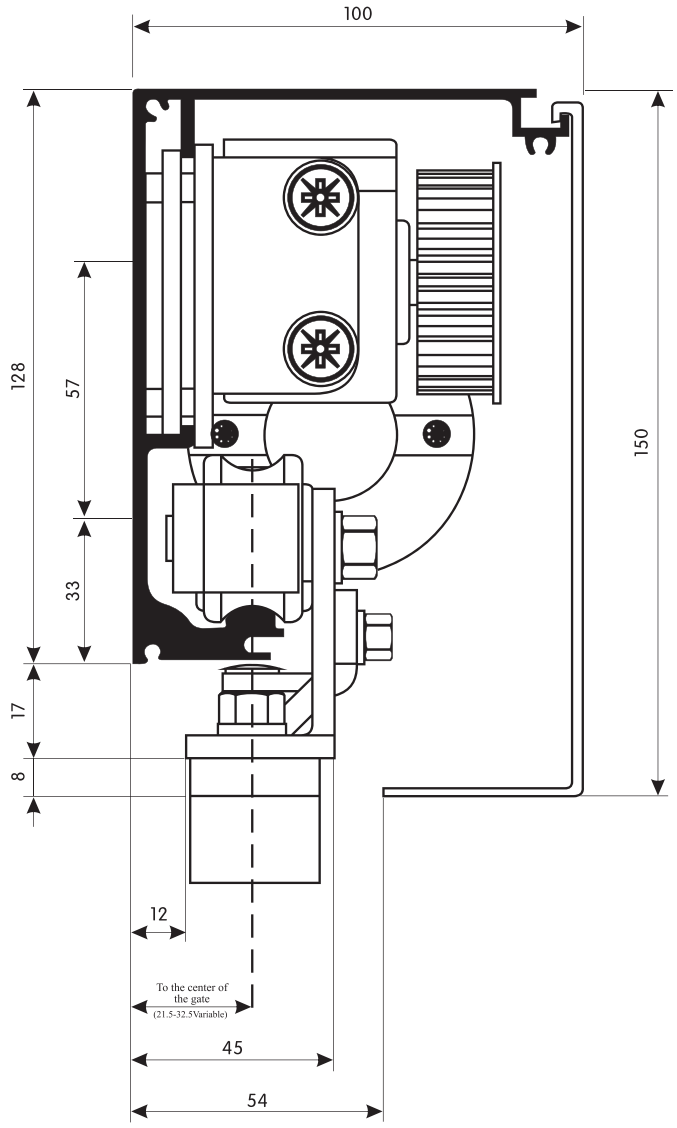


| Door Open Type | | | Door Open Type | Single Opening | Double-leaf |
|---|---|---|---|---|---|
| **Part Name** | | Part Type | Sketch Map | Quantity | |
| **Motor unit** | | 1280906A |  (90/120/200) | 1 | 1 |
| | | |  (150/160) | 1 | 1 |
| | | |  (100) | 1 | 1 |
| **Tension wheel equipment** | | 1280801 |  | 1 | 1 |
| **Hanger device** | | 1280701 |  | 2 | 4 |
| **Belt fixtures** | | 1280601 |  | 1 | 1 |
| **Belt fixtures (pairs of open-use)** | | 1280501 |  | | 1 |
| **Belt** | Single opening(3.2m) | 1280401 |  | 1 | 1 |
| | Double-leaf(6.9m) | | | | |
| **The devices work only bit** | | 1280301 |  | 1 | 1 |
| **Controls** | Without the security sensors | 12802011 |  | 1 | 1 |
| | With safety sensors | 12802021 | | | |
| **Terminal Device** | | 1280101 |  | 1 | 1 |
| **Paste the direction of plate** | | 1730101 | | | |
| **Line Card** | | 1730201 |  | 1 set | 2 sets |
| **Hanger bolts** | | 1730301 Hex bolt (M8X30) |  | 1 set | 2 sets |
| **Belt device installation bolt** | | 1730301 Hex bolt(M6X12) |  | 1 set | 2 sets |
| **Guarantees, instructions** | | | | 1 | 1 |

# Surface-Mounted End-Diagram



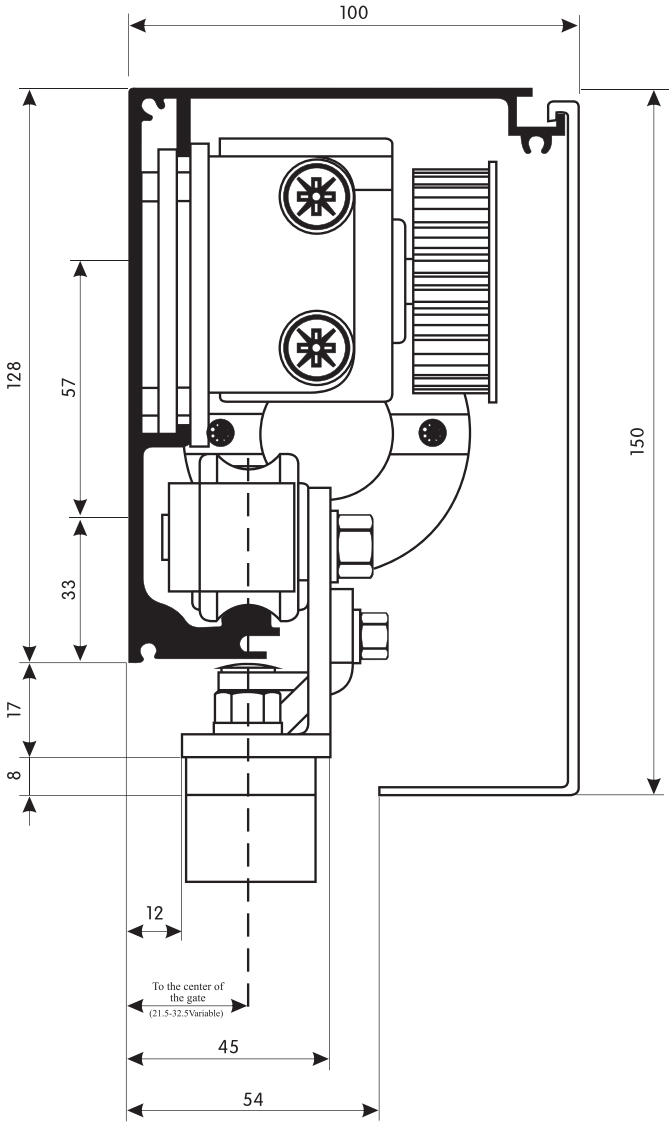
■ Sectional drawing -90/150/160/200



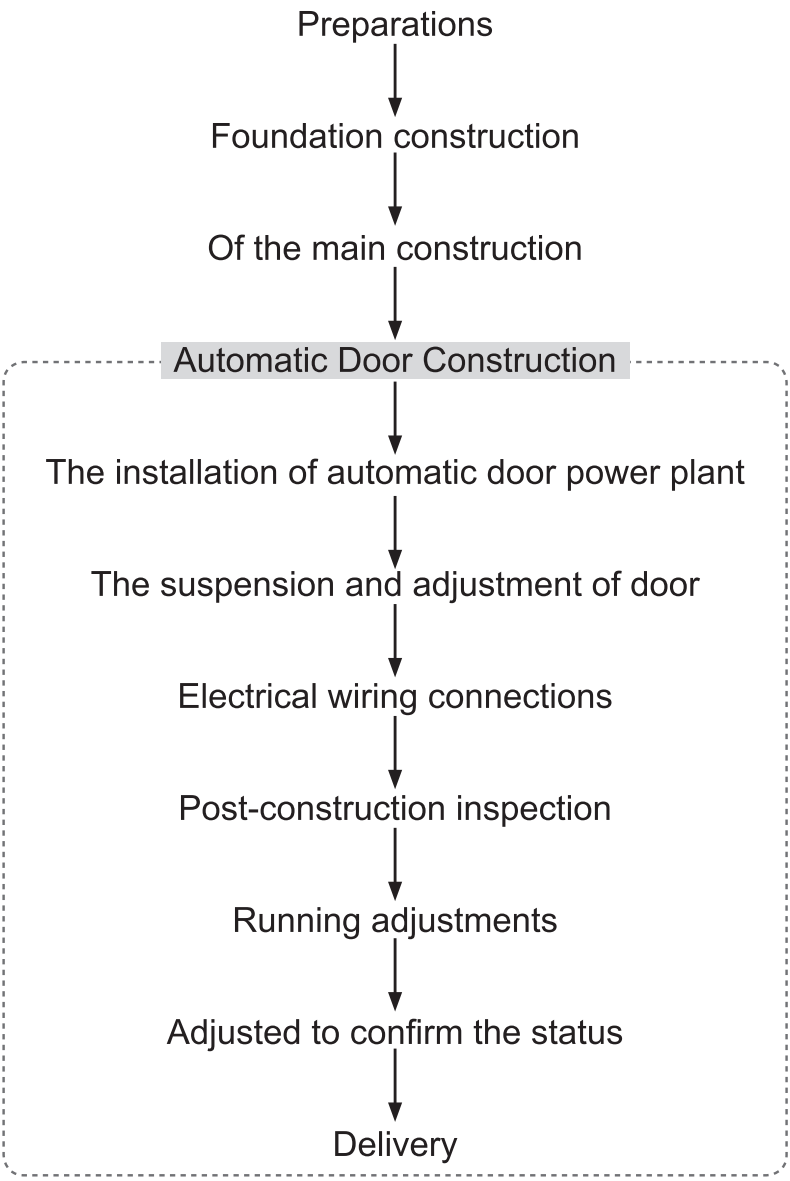
# Surface-Mounted End-Diagram



■ Sectional drawing -100



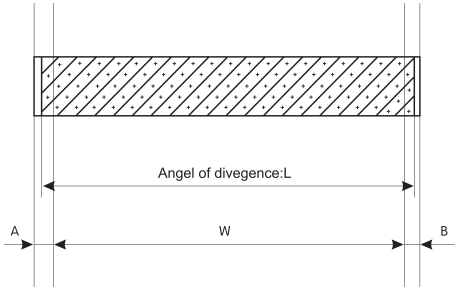
# Automatic Door Installation Process



# Power Beam Installation



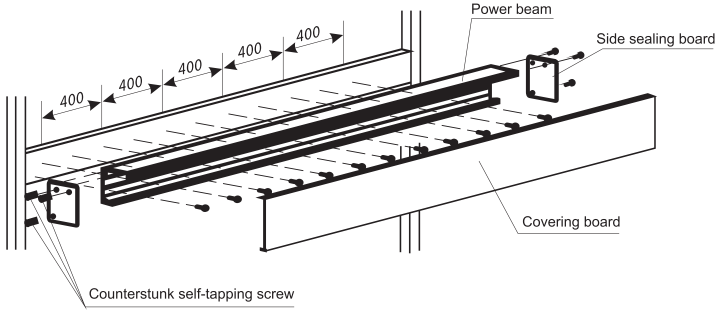
## ■ Cut off power beam size of




1. Cutting power beam power beam: L = W+A+B-5mm
2. In the power beam, horizontal window or wall drilling.
3. In the power beam and cover the hole.
4. With the power beam bolts fixed to the horizontal window (or wall).

**Note:** Installation, be sure to make the level of state power beam was installed or cutting power beam guide do not bumps, other wise it will affect the performance or life.

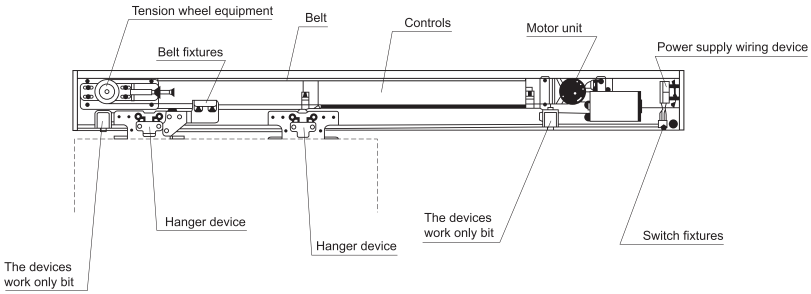
## ■ Power beam construction method



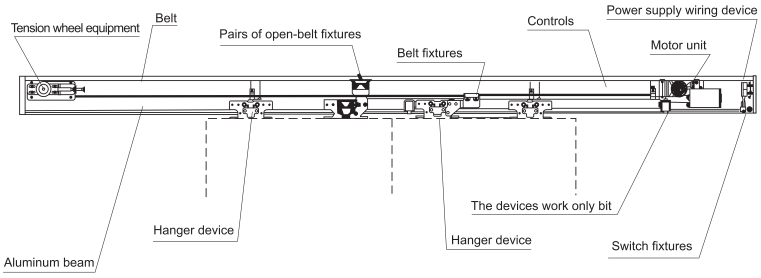
# Power Beam Unit Installation Position of Components



## ■ Single Open



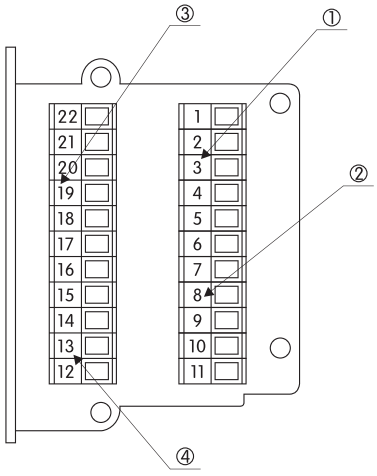

## ■ Double Open



# Multi-Functional Terminal Port



## ■ Basic shape




1. The program selector switch wiring department
2. Functional wiring at 1
3. Auxiliary light wiring department (with auxiliary light sensor)
4. Functional wiring division 3

6 Holes

| | | |
|---|---|---|
| 1 | → +5V | ■ Remote control power output (Note that the remote control can only access and can not access other devices) |
| 2 | ← | ■ Normally open mode |
| 3 | ← | ■ Semi-open model |
| 4 | ← | ■ One-way mode |
| 5 | ← | ■ Stop locking mode |

5 Holes

| | | |
|---|---|---|
| 6 | → GND | ■ Ground remote control |
| 7 | ← | ■ Safety electric eye input (no-voltage contact) |
| 8 | ← | ■ The second sensor input (single mode) |
| 9 | → | ■ Two-door interlock output |
| 10 | ← | ■ Two-door interlock input |
| 11 | → | ■ First sensor input |

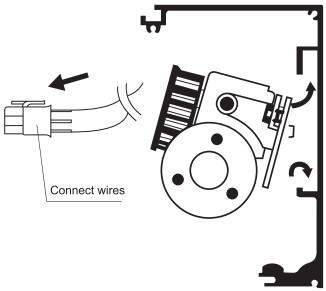
8 Holes

| | | |
|---|---|---|
| 22 | → | ■ +24V |
| 21 | → | ■ GND |
| 20 | → | ■ Alarm output |
| 19 | → | ■ GND |
| 18 | → | ■ Back-up power function selection interface |
| 17 | → | ■ GND |
| 16 | → +12V | ■ Access Controller Power Supply |
| 15 | → GND | ■ Access Controller Power Ground |

3 Holes

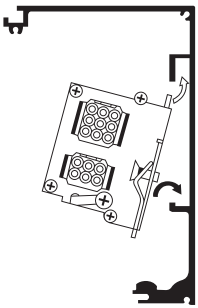
| | | |
|---|---|---|
| 14 | → GND | ■ Backup Power Ground |
| 13 | → +12V | ■ Anode-lock power output |
| 12 | ← +24V | ■ Back-up power supply input (that only use a dedicated power supply) |

## The Motor of the Installation



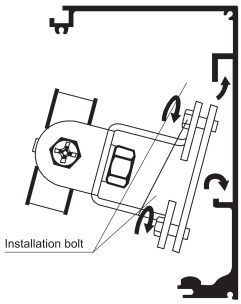

1. The motor device in front of lead into the motor.
2. The motor unit power beam into the upper groove, and then let it slip into the lower part of a trench.
3. The motor unit to move to the right end of the aluminum beam.
4. Tightening with a screwdriver to install bolts.
5. The motor cable wire through the motor unit above, be careful not to make wire sag.

## Controller Device Installation



1. The beam power control device into the upper part of groove, and then slide it the lower part of a trench.
2. Mobile control devices, so that motor unit connection cable can be inserted into the control system device.
3. With a screwdriver tighten the screws on both sides of control devices.

## Tension Wheel the Installation




1. The tensioning wheel unit power beam into the upper groove, and then let it slip into the lower part of a trench.
2. Wheel with a screwdriver to gently tensioning the temporary fixed, so that it can.

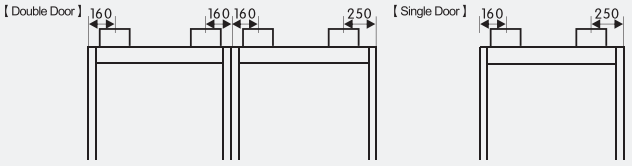
# The Door Hanging Body of Work



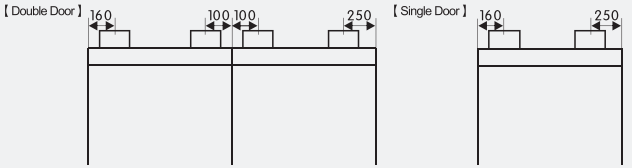
1. With the included hanging door hanger device to install the bolt group to the specified location.

## ■ Pylon of the installation locations of

● The door frame installation position




● Frameless door hanger installation location



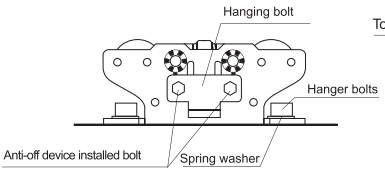

**Note:** Installation should be to make hanger device pulley center and the door were all parallel state (figure), if not parallel, will shorten thepulley life.

2. Screw loose hanger bolt anti de-installation of fixed installation but also off fixtures to reduce anti-hanger.

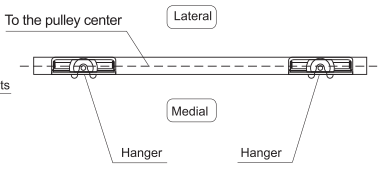
3. The hanger device pulley linked to the power beam rails.

**Note:** Hanging do not bruise the other components within the power beam and the guide, otherwise it will result in component failure or pulley life,Noise, unusual sounds.

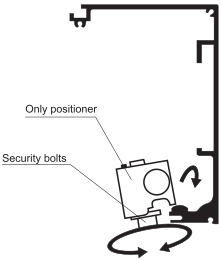
## ■ Hanger




## ■ Anti-hanger off device



## Only the Installation-Bit Devices




1. Screw pine only bit installation of bolts.
2. The only bit embedded devices unit does power beam rails.

**Note:** do not hurt electromechanical beam rails.

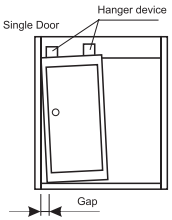
3. First moving the door body to determine the opening and closing the door body position, and then determine the location of only the positioner.

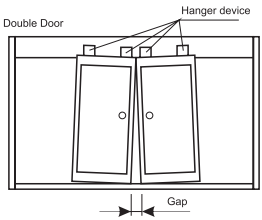
**Note:** To set only the positioner device location, should enable the hanger device hit the pad just after the cease-bit device.

4. With hex wrenches really screw fixed installation bolt.

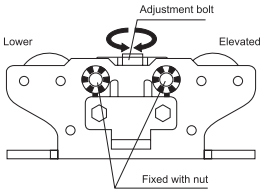
**Note:** installed carelessly, can cause door damage.

## Door of the Construction And Installation Height Adjustment




■ The order of construction and installation height adjustment




● If the door can not be the level of installation, the door hanger can be adjusted.

1.The fixed hanger with screw pine nuts.

2.The installation of adjustment bolt to adjust.

- ● Clockwise revolving door up.
- ● Counterclockwise revolving door down.

3.Tighten the nut with a fixed hanger.

4.Confirming the lower space and power beam, put the hanger up anti-off device installed, the gap is 0.5mm.

5.Confirm the resistance when walking.

**Note:** Sure the door did not move zhizhong henomenon, and there is no friction sound, if requested to confirm the following:

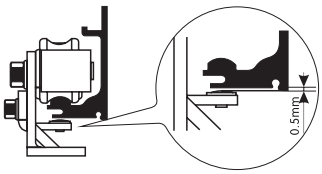
1.Pylon is vertically fixed on the door.

2.Sway the lower door and the door frame with friction devices.

3.Pylon installations and power beam with friction.

4.The door body and whether there is friction between the door frame.

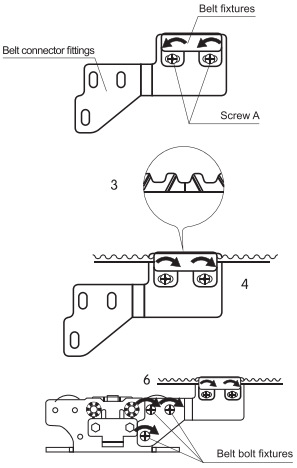
■ Anti-hanger off the installation location of the fixed



# Single Open-Belt Installation



## ■ Belt fixed the installation steps in




1. Remove the screw a to belt fixtures, fittings and removed from the belt connector.
2. Reference belt cutting table, cutting belt.
3. The two ends of belt belt fixtures from the center of the belt into the belt is indeed a fixed office.

**Note:** Installed without rendering belt distortion.

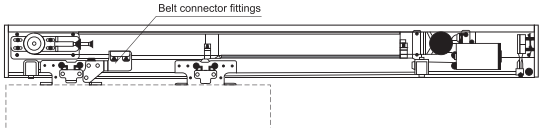
4. The belt fixtures installed on the belt connector fittings.

**Note:** Please note that the direction of belt fixed parts.

5. The belt first, hang on to the tensioner pulley wheel device, and then hung to the side of the pulley on the motor unit.
6. The belt bolt fixtures.

**Note:** Please be sure to tighten the bolts.

## ■ Belt fixed the installation location of




## ■ Belt off the table (single open type)

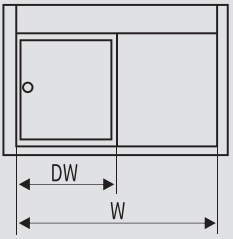
Belt Length = (DW+375) X2 (Unit: mm)

●Belt corresponds to the table

| | DW | Belt |
|---|---|---|
| Standard | 700-1219 | Belt Length 3200mm |
| Special Order | 1220-1650 | Belt Length 4250mm |

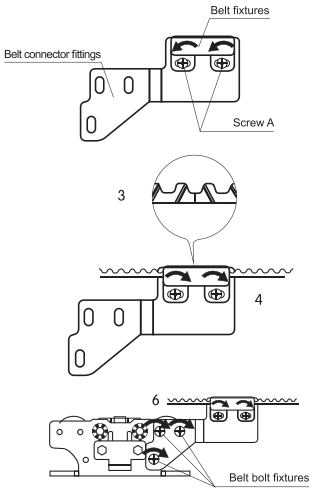
●Belt off the table

| DW(mm) | Belt Length (mm) |
|---|---|
| 762 | 2274 ~ 2674 |
| 800 | 2350 ~ 2750 |
| 850 | 2450 ~ 2950 |
| 900 | 2550 ~ 3200 |
| 950 | 2650 ~ 3200 |
| 951~1219 | 2750 ~ 3200 |



# Pairs of Open-Belt Installation

## ■ Belt fixed the installation steps in




1. Remove the screw a to belt fixtures, fittings and removed from the belt connector.
2. Reference belt cutting table, cutting belt.
3. The two ends of belt belt fixtures from the center of the belt into the belt is indeed a fixed office.

**Note:** Installed without rendering belt distortion.

4. The belt fixtures installed on the belt connector fittings.

**Note:** Please note that the direction of belt fixed parts.

5. The belt first, hang on to the tensioner pulley wheel device, and then hung to the side of the pulley on the motor unit.
6. The belt bolt fixtures.

**Note:** Please be sure to tighten the bolts.

## ■ Belt off the table (Pairs of open)

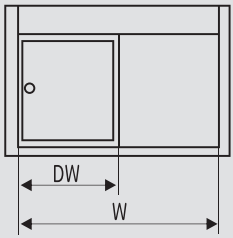
Belt Length = (DWx3+375) X2 (Unit: mm)

●Belt corresponds to the table

| | DW | Belt |
|---|---|---|
| Standard | 600-1067 | Belt Length 6900mm |

●Belt off the table

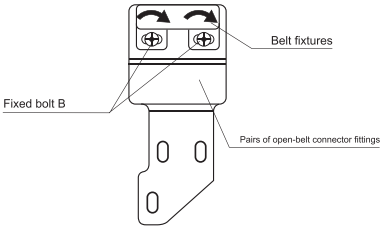
| DW(mm) | Belt Length (mm) |
|---|---|
| 600 | 4100~4150 |
| 750 | 5000~5050 |
| 800 | 5300~5350 |
| 850 | 5600~5650 |
| 900 | 5900~5950 |
| 950 | 5200~6250 |
| 100 | 6500~6550 |
| 1067 | 6900 |



# Pairs of Open-Belt Installation (Continued)



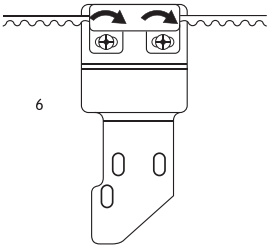
## ■ Belt fixed the installation steps in

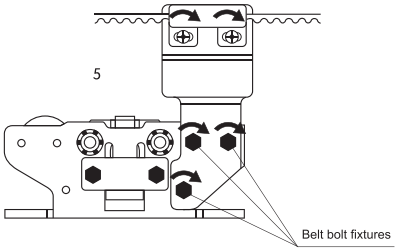



1. Adjust the belt tension.
2. So that two door is turned off.
3. Removed the double-opening fixtures with a belt bolts B,It stationary parts removed from the belt.
4. The belt fixtures installed belt, ran Post-fixed in pairs to open with a leather belt with parts.
5. The belt bolt fixtures.

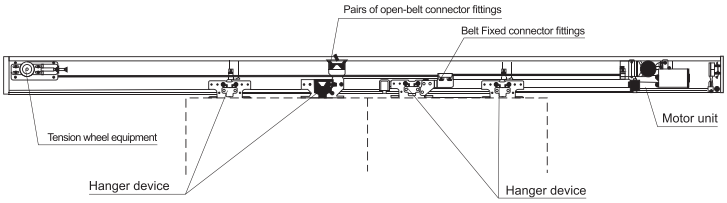
**Note:** Please be sure to tighten the bolts.

6. Gate locations adjusted to tighten the bolts b.

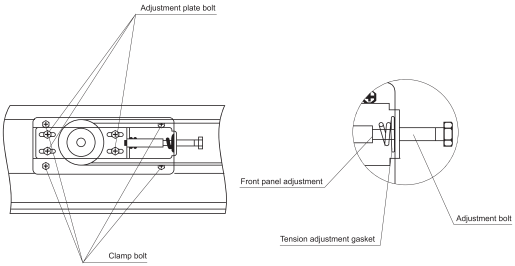



## ■ Belt fixtures installed position (pairs of open type)




## Belt Tension Adjustment

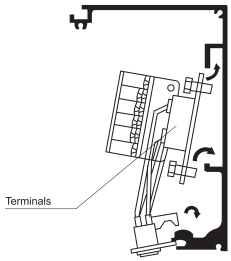



1. The tensioning wheel unit to the left pull, so that to maintain belt tension, then tighten the four bolts platen.
2. 4 Adjustable plate fixation screw loose bolts.
3. Along the tension adjustment bolt clockwise rotation, high-speed belt tension.

**Note:** To adjust the front plate gasket and regulation overlap is appropriate.

4. Four adjustable screw plate fixation bolt.

## Terminal Block the Installation



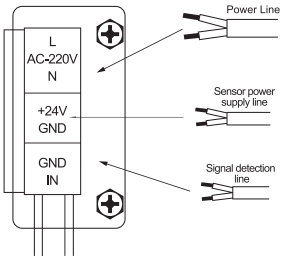

1. Tighten loose bolts installed to terminals inside the device into the power beam.

**Note:** Please do not damage guides, otherwise shorten the life span caused by the wheels and noise.

2. The wiring devices to move to the right end of beam power.
3. Immediately following the line of the device screw all of the bolts.

**Note:** Please do not damage guides, otherwise shorten the life span caused by the wheels and noise.

## Power Line and the Sensor Connection Method




1. The power cord and terminal block unit is indeed connected.

**Note:** Supply voltage AC85-265V, such as pick the wrong power supply voltage may cause fire, electric shock.

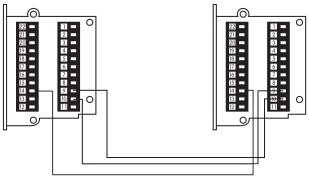
**Note:** Wire stripping head length 10mm, do not come across the power terminals outside the office, otherwise an electric shock.

**Note:** Absolutely can not put the power line access to the sensor input, otherwise it will cause trouble.

2. The sensor power supply and dc24v input connected to the detection sensors detect the client and the client connected.

**Note:** Please do not greater than the rated current 1a power supply unit connected to the above, otherwise they will cause trouble.

## Two-Door Interlocking Connections

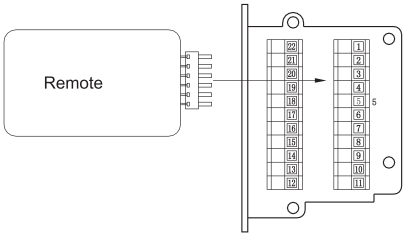


1 To 2 controllers and icon link.

2, It is best to use shielded cable.

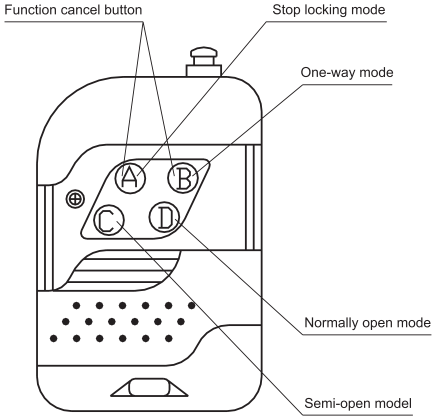
**Note:** Please use 0.5mm$^2$ wire, length 10m below.

# The Instructions For Use Remote Control




1. According to the direction of plug into the controller-side panel icon.
2. Pay attention to the direction of plug.

**Note:** Bad connection can cause adverse movements




## Remote Control Manual

- **Functional health instructions**

"A" to stop lock key - role of the door in the closed state (if the installation of automatic mechanical lock, the door Machines will be dual-locking, providing double insurance).

"B" one-way pass key - role of the door can only accept interior door sensor signal to reach out not only the purpose of entering one-way passage.

"C" semi-open button - the role of work in the door half-open state, that is, the door opened in a half open shape.

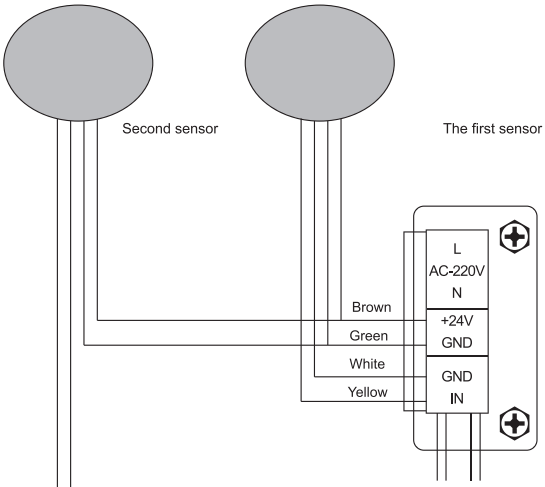
"D" always open key - role of the door was always kept open state.

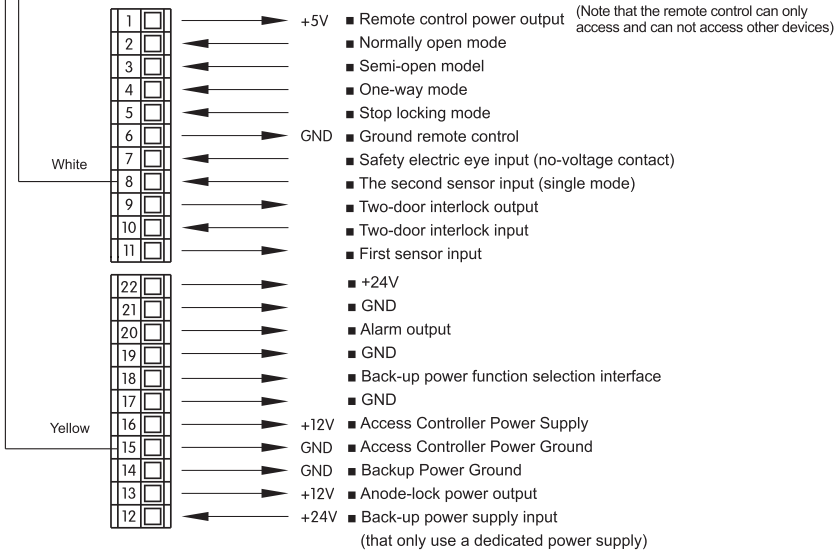
- **Pay attention to matters**

1. Remote control can be used normally within 0-20 meters.
2. Can not be subject to strong vibration and rain, sun-dried in order to avoid damage caused by remote control.
3. In the remote distances have been shortened or failure, please replace the remote control 12V battery.

# The Sensor Wiring Method





**Safety Light Technical Indicators:**

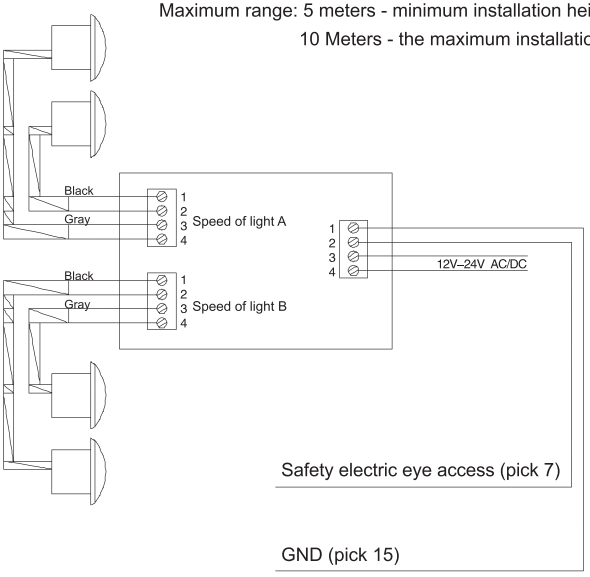
Installation height: 0.2 M minimum distance from the ground

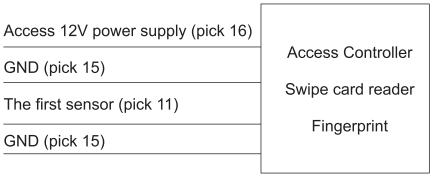
The distance between the speed of light: minimum 0.3 M

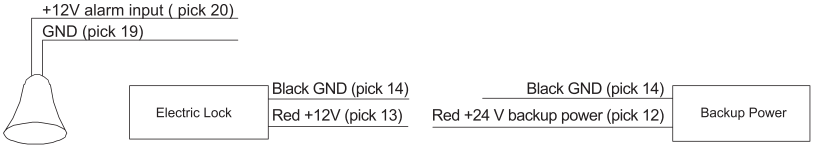
Minimum range: 1 M

Maximum range: 5 meters - minimum installation height of 0.2 Meters

10 Meters - the maximum installation height of 0.4 Meters

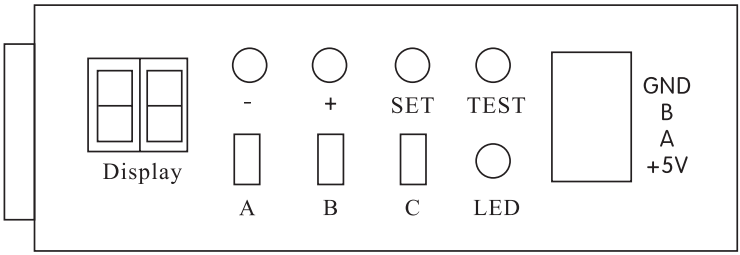


# Action Adjustment

■ Belt fixed the installation steps in




A: Left and right switch - door open direction selection switch

B: Two induction switch - a induction and the two induction switch

C: Cclose the door lock switch - switch to the top of each door lock

**Note:** The above fluctuations switch function must be re-power to be effective

LED: signal indicating lamp indicator lamp proceed sensor signal detection

TEST: test button to proceed after pressing signal indicating lamp is bright, the equivalent of 1 door sensor,the signal input, the door open.

Display: digital display

-: Decrement button.

+: Incremental button.

SET: Function selection button, the corresponding digital display A1-A8.

5V: Then access the power 5V, A: then access 485 A,

B: then access 485 B, GND: GND connection access

## Action parameters adjustment

1. Function of the gear select: A1 digital tube display file after power on, press the SET key to select the function of file, select the range from A1 to A8 cycle,

" A " represents the current display function. The following A1 to A8 means:

A1: open speed ( 1~25 ) A2: open the door buffer distance (1~32 )

A3: open the door buffer force (1~32 ) A4: closing speed (1~25 )

A5: closed buffer distance (1~32 ) A6: closed buffer force (1~32)

A7: open time ( 1~20 )

A8: the starting force ( 1~25 )

# Action Adjustment



2.Parameter adjustment

According to the " + " or " - " button to adjust the current function parameters, and the digital tube displays the current function parameters, 2 seconds no press " +" or "- " key digital tube and display the current function (A1 to A8 ).

3. Parameter adjustment method

(1).Open speed and closing speed can be adjusted according to the requirement, but the speed increased after the need to appropriately increase the buffer distance, to prevent the door.

(2).Buffer force according to the door when running resistance force adjustment, the greater the resistance parameters need to be adjusted in the more general door, more the greater the resistance, but also had a great relationship with the mechanical installation, sometimes light intensity could be even greater proportion of door door.

The buffer force generally do not need too much adjustment in electrical testing, system can detect, but if because there will be other reasons lead to the following situations : when the buffer force not spend hours buffering force, the system will think that prevent clip, will always open and close not to, then need to manually adjust the large buffer strength; when the buffer is too large, the door switch to the buffer because the speed too fast will impact, then you can manually adjust the small, if there is no manual adjustment, the system will automatically adjust buffer force, automatic door operation a few times can also speed buffer to internal set. The buffer speed set by the internal procedures, the door several times of the normal operation of the buffer speed will eventually adjust to the set speed.

(3) The user can adjust the buffer distance, but if the inertia of the door, leading to the buffer distance was too small, the system will increase, until don't knock the door.

(4) The opening time can be adjusted according to needs 1~10 seconds, the parameters for each 1 increase in the opening time of 0.5 seconds, change.

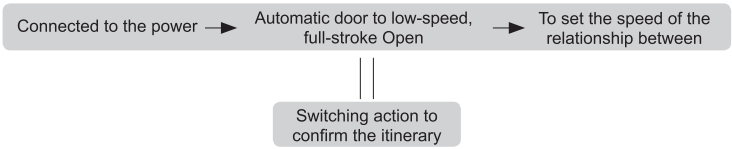
## ■ The electrical detection

1. New installation of automatic door first electricity before you opened the door a little, and then power on, if the door is opened to the direction that the correct direction, otherwise it will dial switch A is allocated to the other side, and then power off, then power on.

2.Pulls the door to close state, to a power, this is very important, otherwise the door closing force cannot be detected, when the need to manually adjust more. After power on the first door detection, when the open end closed detection, when the door is closed after the end of the end detection. Through the test can determine the gate length, and required by the switch door probably efforts. Safety electric eye detection process, sensor signal failure. If normal word, switch door efforts generally do not need to do big adjustment, the system several times after adjustment to the set state run in the door, the customer can adjust the buffer distance. But can not be adjusted too small, too small will appear the phenomenon of the door. In the process of testing must not be affected by external interference, otherwise the after test may be opened and closed the door can not be put in place or phenomenon, the need for manual adjustment.

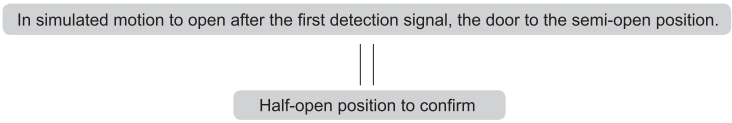
# Action Description

## ■ Simulation Action




**Note:** Connected to carry out the above immediately after the power moves, has nothing to do with the full-half open.

## ■ The use of semi-open model




**Note:** In the first test signal to open to open and were open state = confirmed half-open position, as the imposition of outside force to imitate people hit the door, it is easy to confirm the wrong location, please note.

## ■ Normal Operation

Door detection signal ON → According to setting open the door → Door brake
Door buffer → Open Hold Time → According to set value to close
Brake closed → Close buffer → Force the door closed to stop raising

## ■ Collision Detection Function

- In the closing movement in the case of obstacle was conducted after the rebound.
- Encounter obstacles to rebound after the door is closed before the trip to the obstruction site into a buffer speed.
- In case of barrier material removed, the door to confirm the next start after returning to normal.

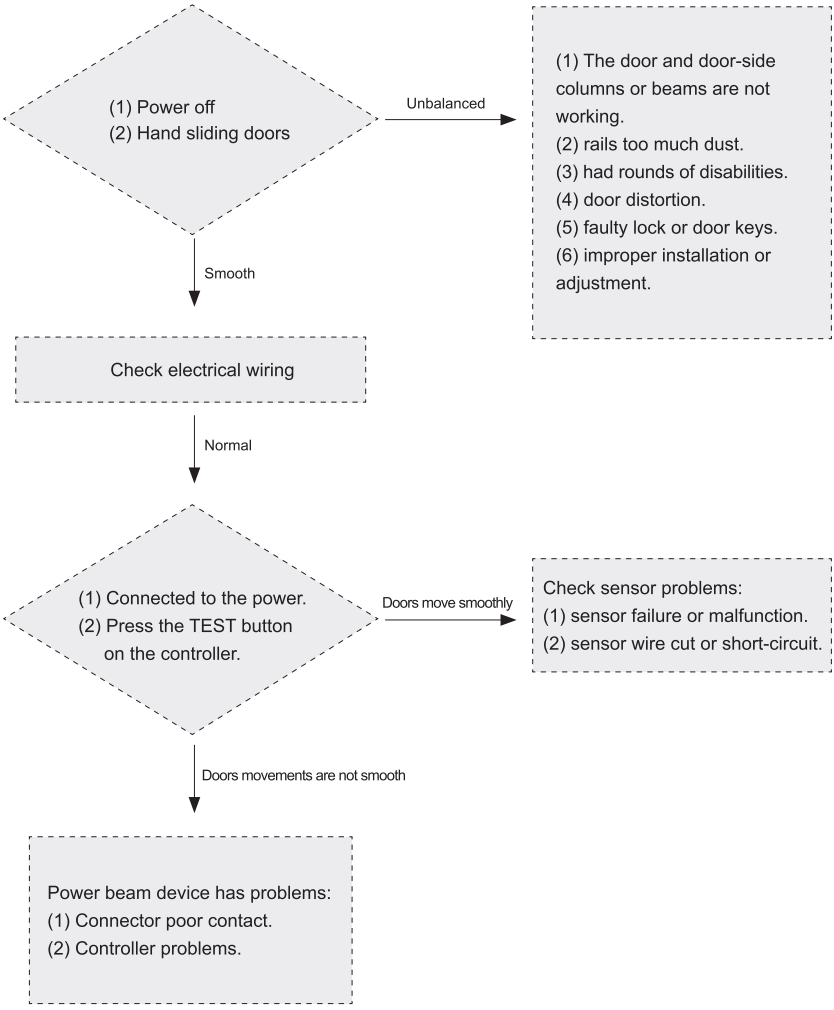
## ■ Protection Function

- Control devices which have self-protection, to the inside temperature rises to a certain value, the opening hours is automatically set to maximum.
- If the temperature continues to rise, then automatically stop working, such as temperature declines, then automatically return to normal.

# Check the Steps



■ Automatic door does not move, please press the plan step to be checked



# Abnormalities and Diagnosis (Commitment Ago)



| A anomalies | Reason | Confirmed that the matter | Approach |
|---|---|---|---|
| Do not switch too slow or non-smooth | ● Turned on or off too slowly.<br>● Too much distance between the buffer.<br>● Some people run into the door when the door switch body or foreign body caused by abnormal pattern.<br>● Walking too much resistance. | Confirmed that the door switch settings.<br>Cut off the power supply, hand-switch door.<br>Confirmed and whether the litter rail.<br>To confirm whether there are any obstacles. | Adjust the switching speed of the value of the door.<br>Adjust the buffer settings.<br>So that the temporary closure of a door.<br>Garbage removal.<br>Removal of obstructions. |
| Doors which do not move | ● Power supply is not connected.<br>● Sensor fault.<br>● Power supply is not connected.<br>● Door locked.<br>● Door rail there garbage. | See circuit breaker.<br>See the power switch is turned on.<br>See if the door was locked.<br>Turn off the power to confirm whether the smooth door movement.<br>View connection. | Connected to circuit breakers.<br>Open the power switch.<br>Replace the sensor.<br>Open the door.<br>Remove litter or obstructions.<br>Reconnected or replaced. |
| The door does not close | ● Sensors continue to work.<br>● Safety sensors continue to work.<br>● Sensor signal line short-circuit. | There are moving objects in the sensing region cause an error action.<br>There is no moving object in the sensing region cause an error action.<br>Check the safety photoelectric light receiver on the head or rubbish.<br>Optical axis easy road.<br>Remove the terminals on the signal line, the door is closed. | Moving object in the sensing region.<br>Replace the sensor.<br>Garbage removal.<br>Optical axis alignment.<br>Replace the signal line. |
| Door will automatically switch | ● Sensor malfunction.<br>1. testing whether there are moving objects in the region.<br>2. the door near a strong radio waves.<br>3. and other sensors detect areas overlap.<br>4. testing the area with fluorescent lights.<br>● Sensor bad. | Check<br>Check<br>Check<br>Check<br>Sensor rebound phenomenon. | The moving object away from the test area.<br>To send a strong wave of the machine away.<br>Conversion tamper switch.<br>The lamp away from the test area.<br>Replace the sensor. |
| Failure to open the door | Set in the semi-open model | Check full / half-width of the door open switch | Switch to full-mode |
| Doors Jitter | Starting torque are set incorrectly. | | Set Starting Torque |

●Specifications Subject To Change Without Notice