

Digital VVVF Synchronized Door Operator

Installation & Adjusting Instruction Book

Digital VVVF synchronized door operator and landing door installation and adjusting instruction

1. Mechanical features and characteristics

1.1 The door operator transmit by synchronized belt , so that there is lower noise and higher control accuracy in the elevator running process .

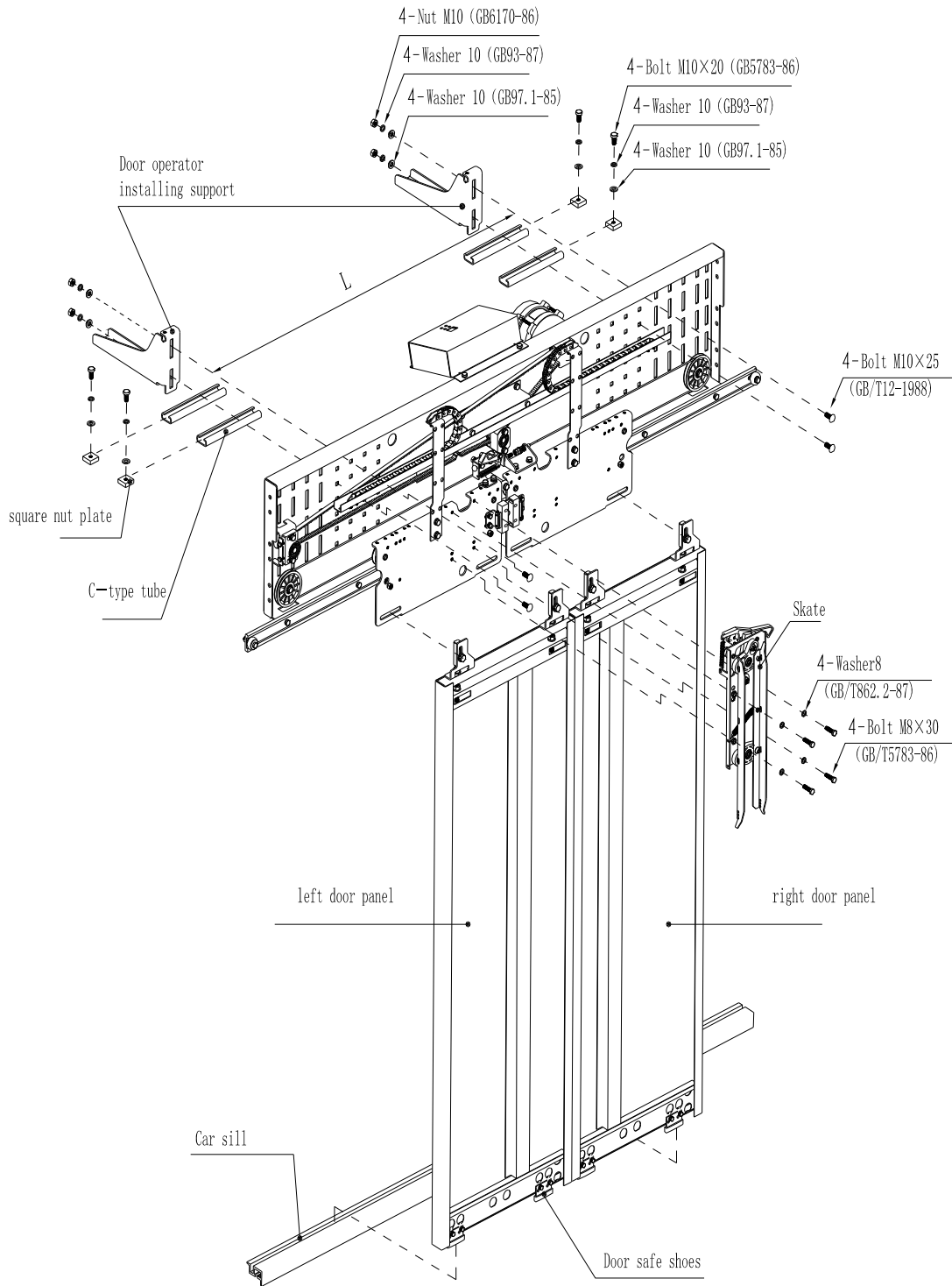
1.2 It is adopted with rated frequency conversion motor with low frequency and large moment torque, so Whole door operation performs with lower noise and has a longer life time.

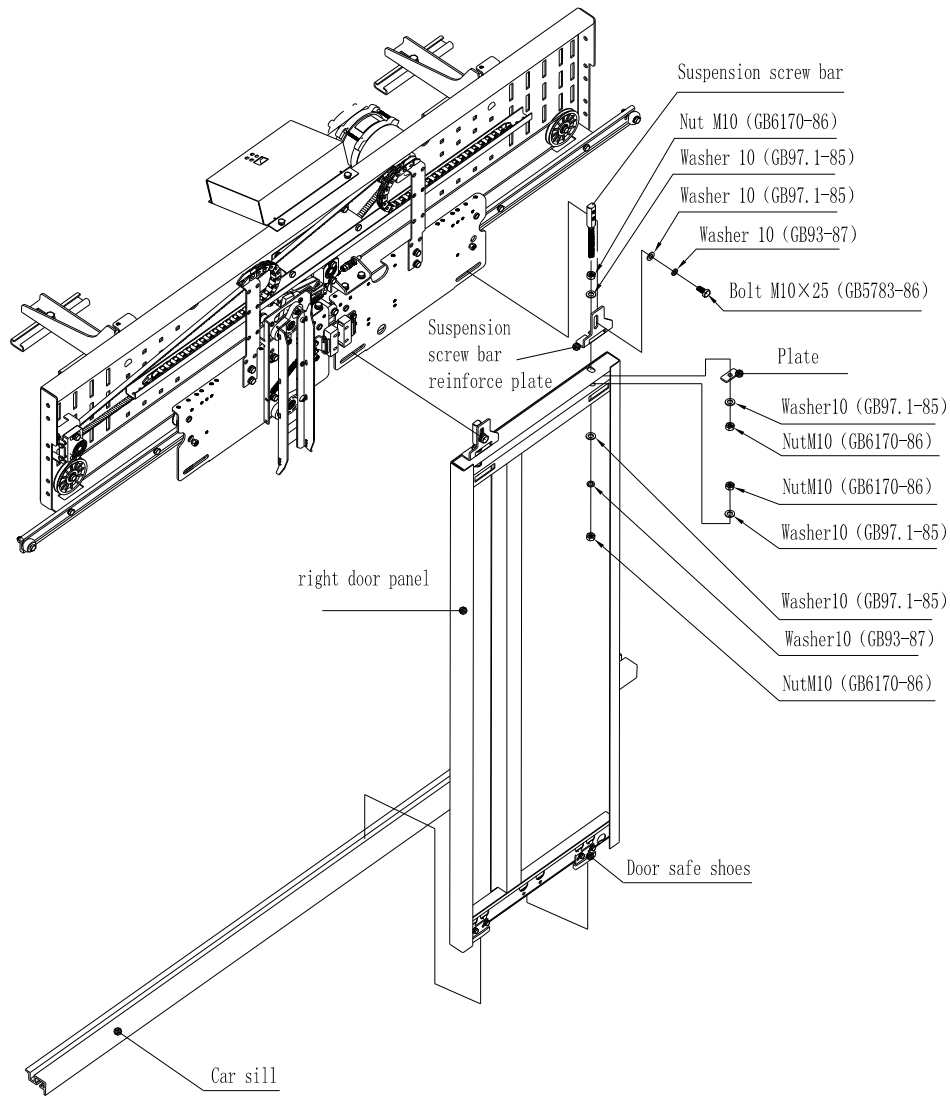
1.3 Door skate is fixed on the suspending plate of door operator. The position of door skate can be adjusted with four bolts , so it adjusts simply and quickly. So that there is no wear and no need to maintain.

1.4 The door operator's structure is simplifying, small volume, light weight and easy to install.

1.5 It's easy to maintain the door operator and the landing door. All rolling components of the door operator (synchronized belt transmission system, the skate system) have airproof bearings, so there is no wear and no need to refueling or replace the components. You just do some routine inspection adjustment and cleaning.

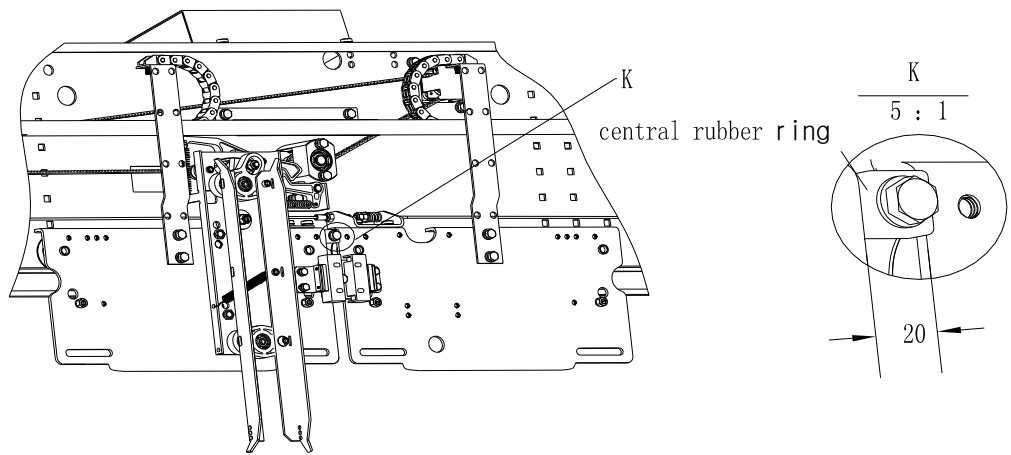
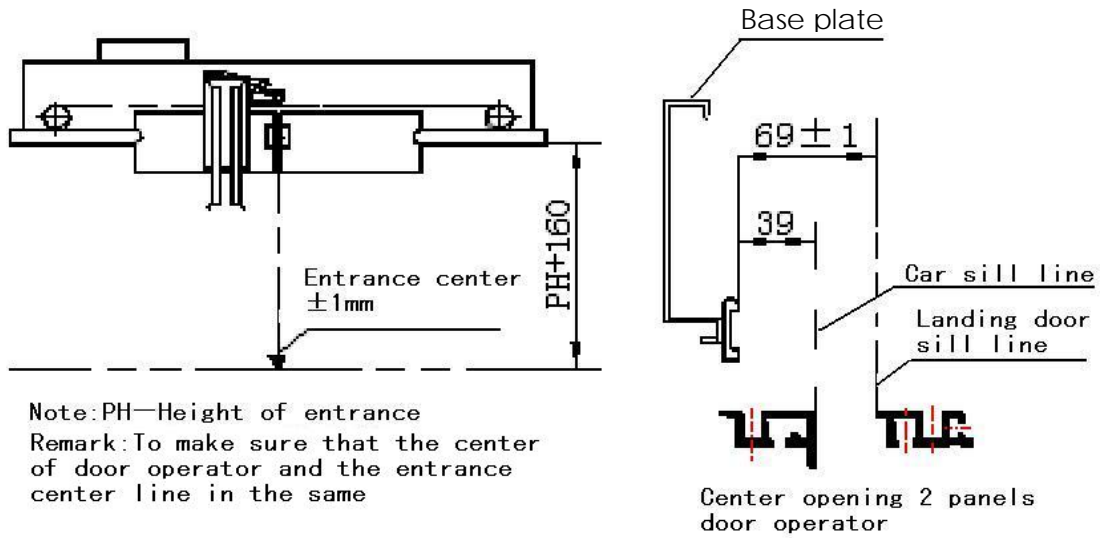
I、Door operator structure schematics (FECO.01)

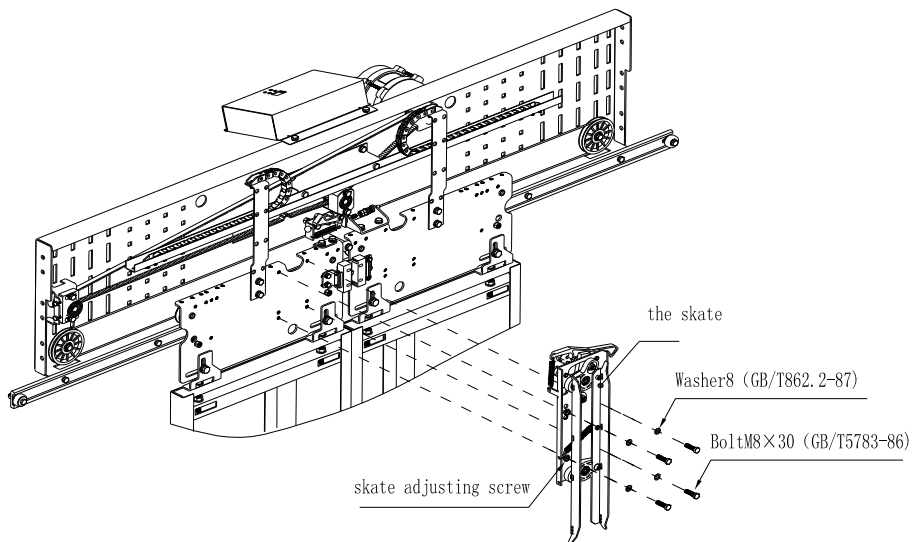
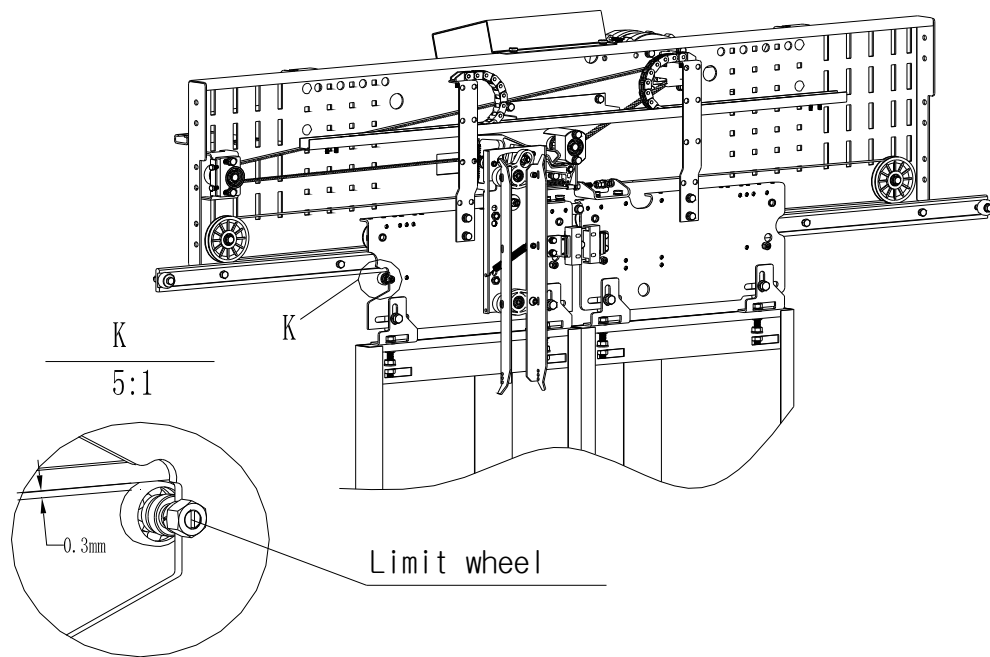




Mechanical installation and adjusting instruction

I、Door operator and car door installation

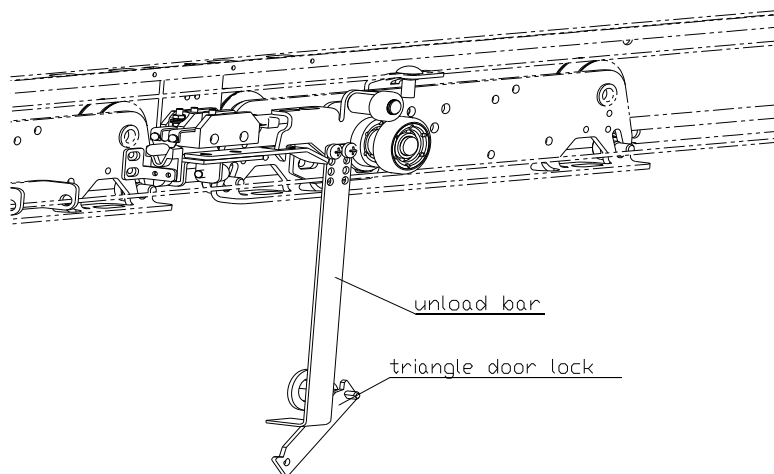
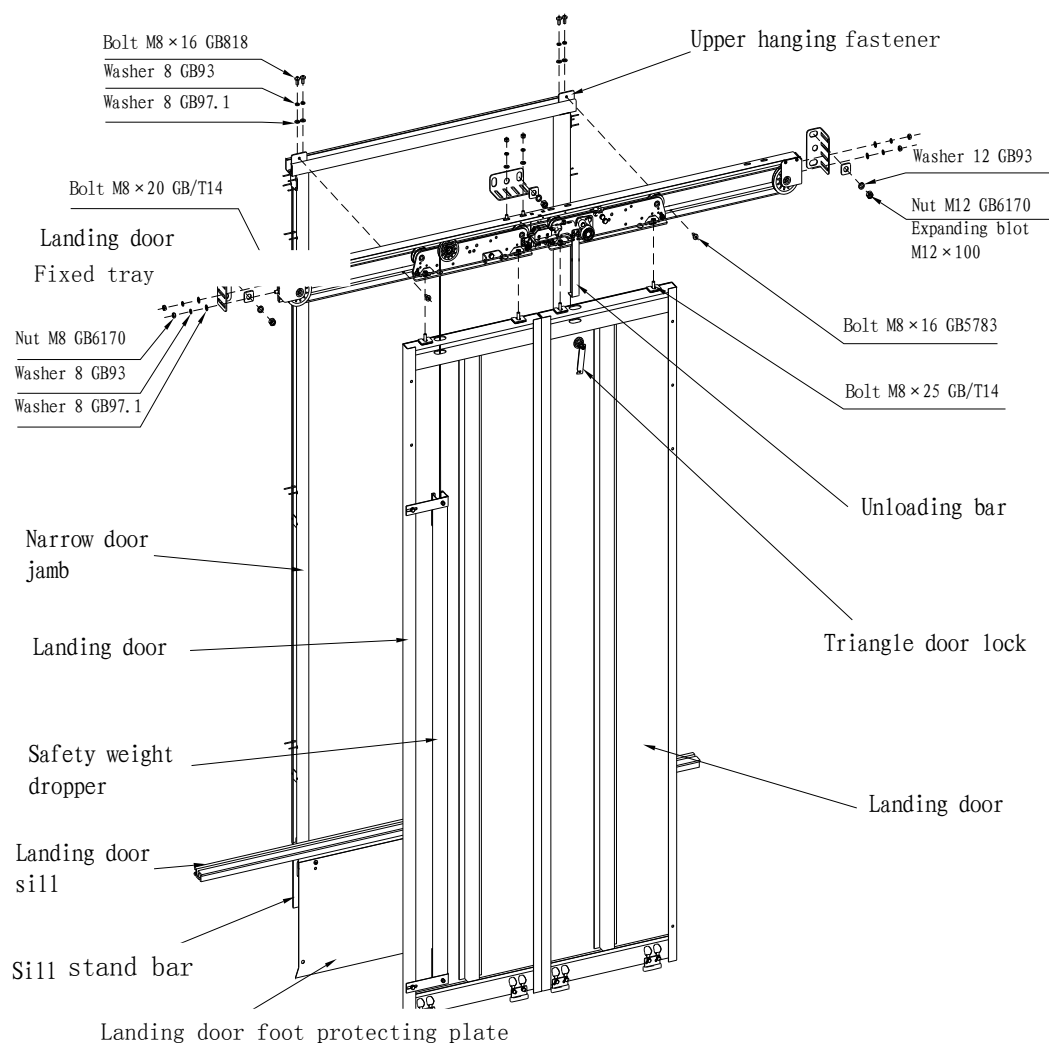




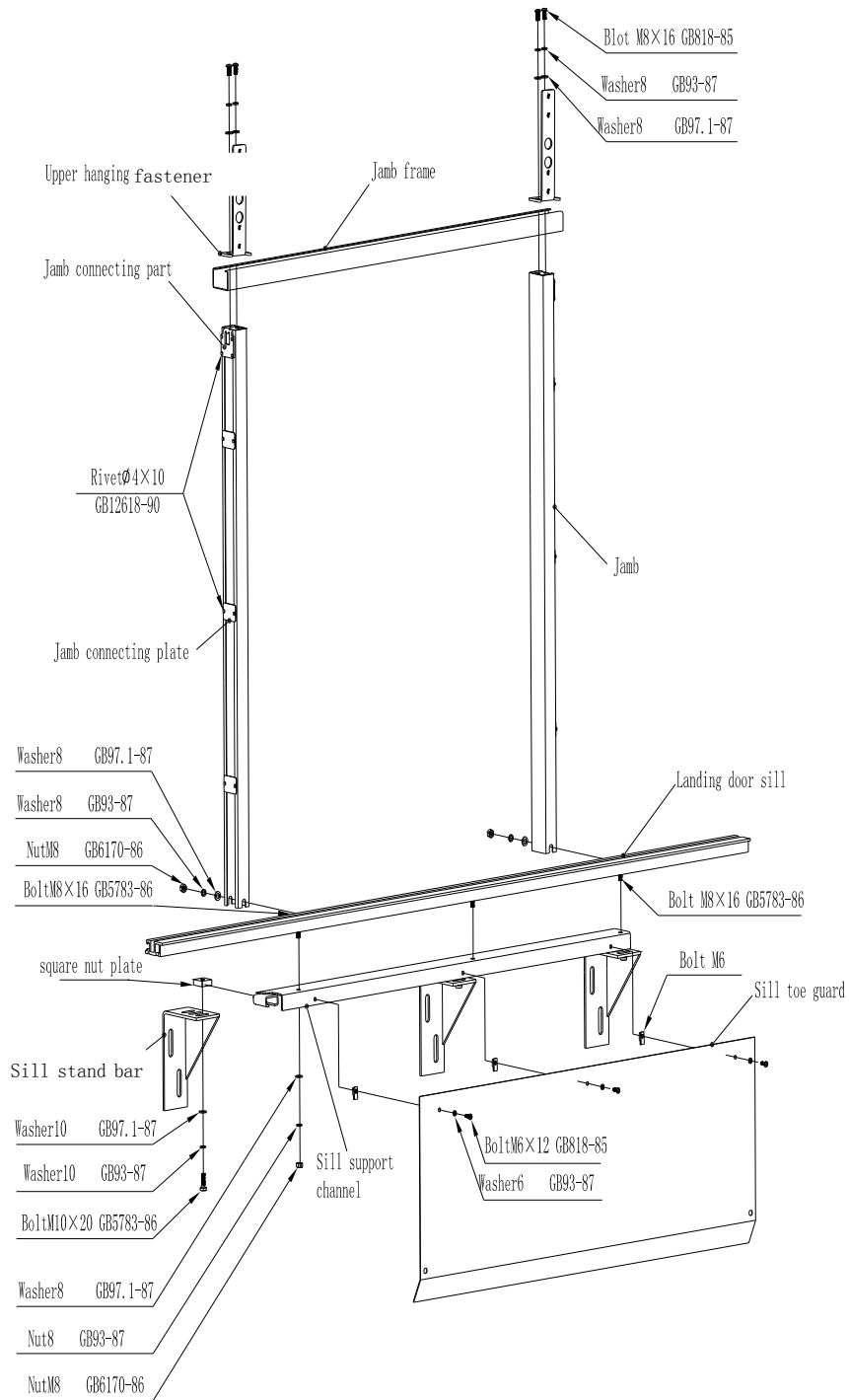
- 1.1 To make sure that the center of door operator and the entrance center line in the same.
- 1.2 To make sure that the distance from bottom surface of guide rail to car sill is $PH+160\text{mm}$.
(PH: height of the entrance)
- 1.3 To make sure that the distance from the front surface of guide rail to car sill is $39 \pm 1\text{mm}$.

II、Landing door structure schematics(FECL.02)

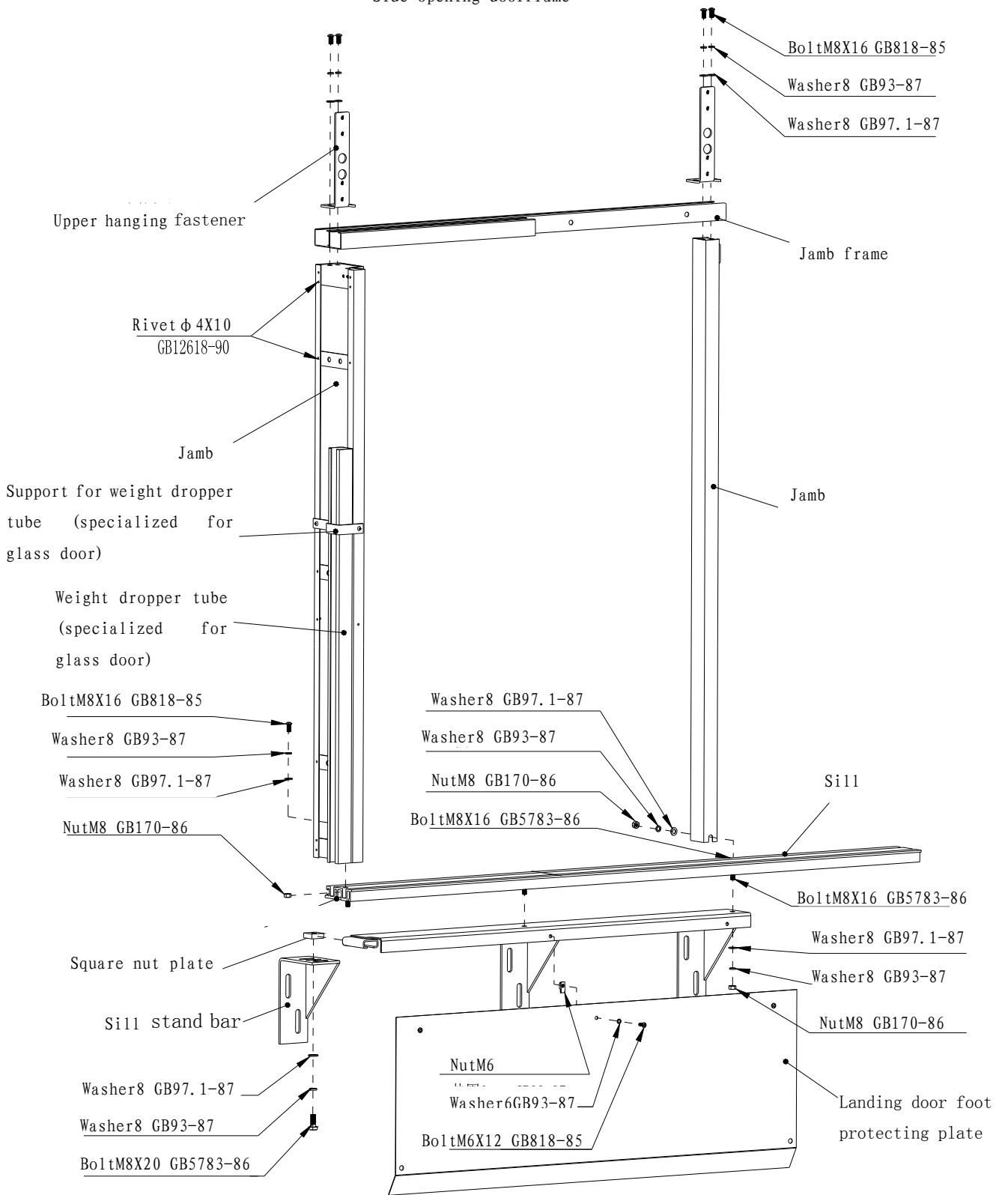
Landing door structure schematics (FECL. 02)

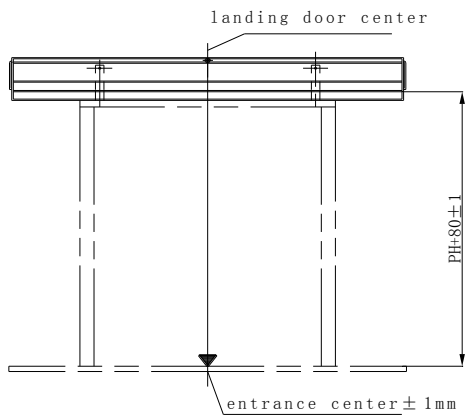


Central opening narrow door jamb

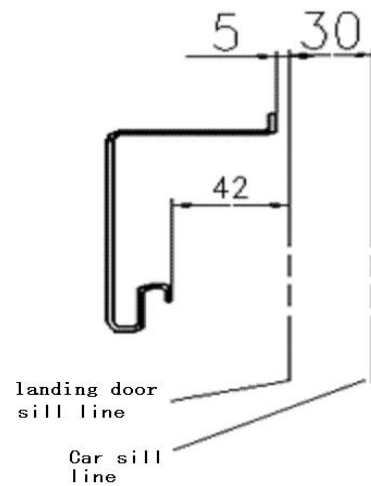


Side opening doorframe





Note: landing door center superpose entrance center



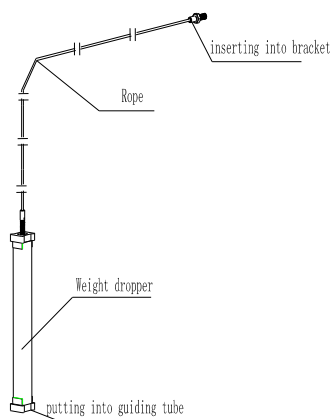
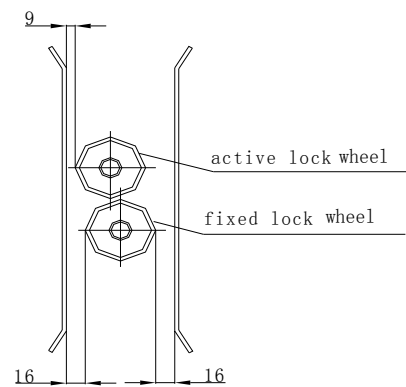
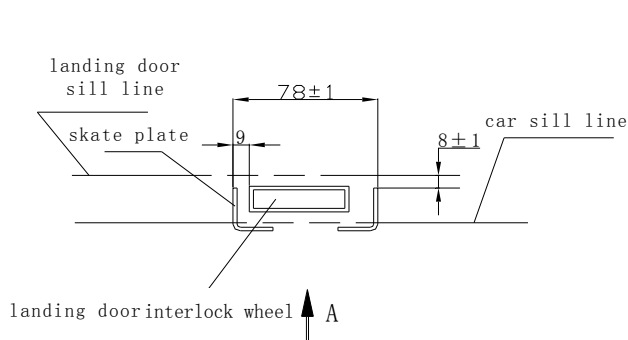
2.1 To make sure that the distance of landing door guide and landing door sill is

$PH=59 \pm 1$ (PH: height of the entrance)

2.2 To make sure that the center of landing door and entrance center line in the same.

2.3 To make sure that the distance of landing door guide and landing door sill is 42mm.

2.4 To make sure that the distance of the landing door leading edge and landing door sill line is 5mm.



Notes:

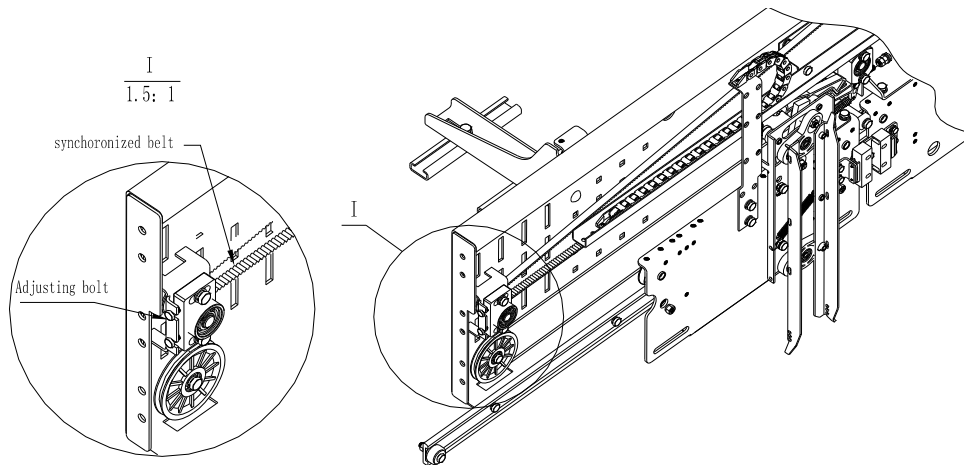
1. Before the operation of door operator interlocking with the landing door, to check if the hanging centers is consistent ,also check the relative position of door skate and the interlock wheel of landing door.

2.To make sure that the distance of door skate and landing door sill is 7-9 mm.

- 3.To make sure that the distance from the landing door lock wheel front surface to car sill is 7-9mm.
- 4.To make sure when the interlocking electric contact of landing door works the contact depth of hook is not less than 7mm.
- 5.To make sure that the landing door and car door is synchronized.

III、 Maintenance and Inspection of the door operator system

- 3.1 To check the synchronizing bell. If the synchronizing bell is slipping, it can be tightened by regulating bolts in the bottom of driven wheel. If the side of synchronous bell is damaged, or tooth lost . it should be replaced immediately. If there is noise produced from the synchronous belt and the roller meshing, use vaseline on the belt surface to lubricate it.
- 3.2 To check if the safety contact of door operator lock works reliably. The contact head with much abrasion should be replaced.



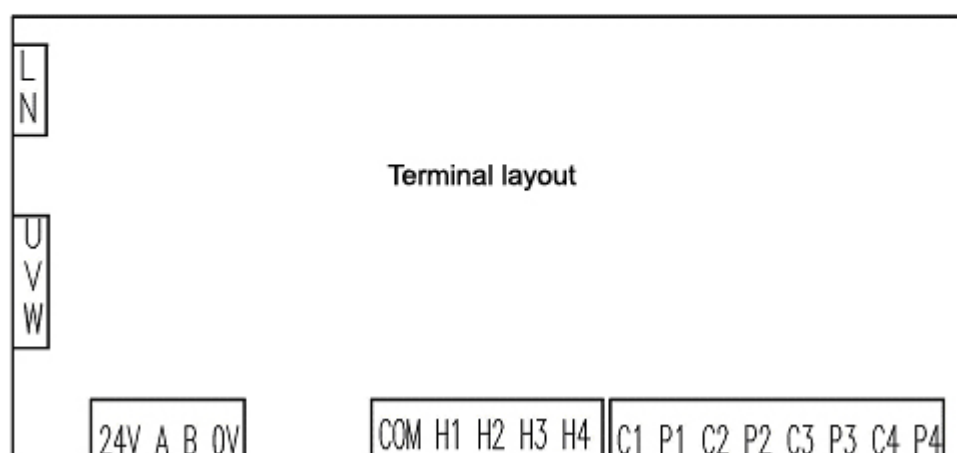
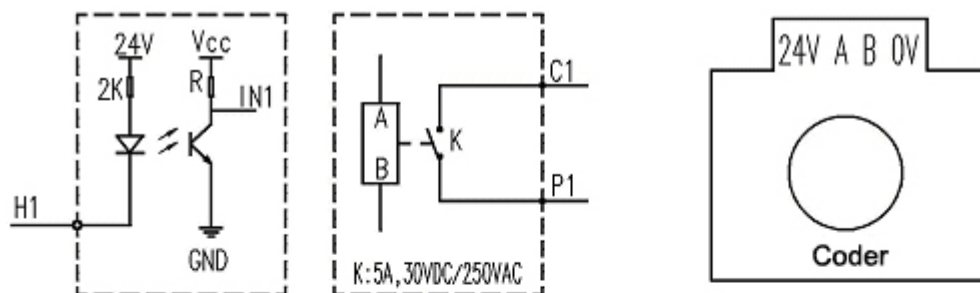
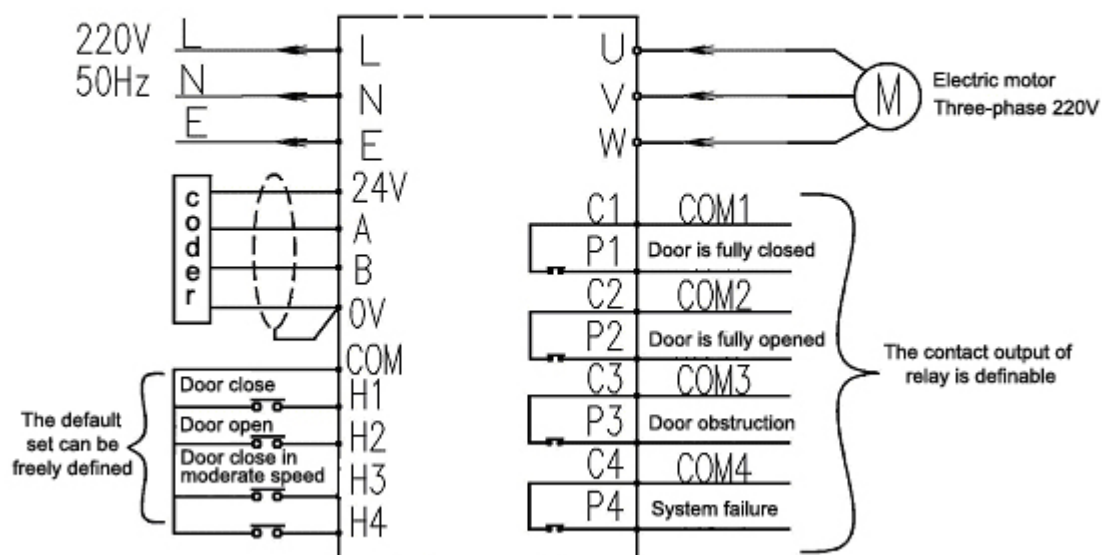
- 3.3 The guide rail should be cleaned every time when do maintenance , the door operator should travel lightly without jump. The connection bolts and screws should be often checked.
- 3.4 The landing door interlock device should be inspected monthly and make sure that there is no virtual contact between the conductive sheet and the contact head. To check if the spring sheet of contact head can reset automatically and if there is any looseness at riveting, welding and agglutination. All parts should be able to rotate quickly.
- 3.5. To inspect the landing door device monthly. The over-abraded roller should be replaced in time. The bolts and screws should be checked to make sure there is no looseness. To clean the landing door guide rail and make it moves smoothly without noise. It is forbidden to paint any oil on the working surface of guide rail.

The electric wiring and adjusting of door operator

I 、 The electric wire connection

1. Diagram of electric connection (the electric attached diagram 1)

Attached electric diagram



2. Power supply

Single-phase AC power $AC220V \pm 10\%$, $50Hz \pm 5\%$. It is suggested to power the door operator by C45N with current 6A. The power cable: brown—L, blue—N, yellow green—E

3. Connection of the coder

The cable for coder is equipped when product delivery. Just to make it connected with the controller tightly.

4. Cable for electric motor

The three-phase motor cable is equipped when product delivery. Just to make it connected with the controller tightly.

5. Input/output signal cable connection

5.1 input

There are four COM terminals for input. Each of them can be defined as any function in Group H of parameter table independently. The normal open and normal close can be defined freely. But they can not be defined repeatedly. Otherwise the system will report fault. The parameters H1 to H4 correspond terminal H1—H4 respectively. The followings are default definitions:

5.1.1 Door close input— the continuous signal on COM AND H1;

5.1.2 Door open input— the continuous signal on COM AND H2;

5.1.3 Door slow close input— the continuous signal on COM AND H3

Note: The power supply of input signal is from the controller and any other power supply should not be applied.

5.2 output

There are four pairs of independent relay contact for output (with capacity is 3A, 30VDC/250VAC). Each pair of output terminal can be defined as any function in Group P of parameter table independently. Also the normal open and normal close can be defined at will. The parameters P1 to P4 correspond terminal pair C1—P4 to C4—P4 respectively. The followings are default definitions:

5.2.1 The signal of door full close— when the door is fully closed C1 communicates with P1;

5.2.2 The signal of door full open— when the door is fully opened C2 communicates with P2;

5.2.3 Door failure signal— If there is failure during door operation C3 communicates with P3;

5.2.4 System failure signal— If there is failure in system C4 communicates with P4.

II、Description of the panel

1. Double-bit and seven-segment code indicating

1.1 The pulse indicating door position under normal operation

The position pulse is indicated in double-bit decimal system: The position of door full close (the door skate has fully disentangled) is indicated as 00. The position of door full open is indicated as 99.

Other positions are indicated as per the scale.

1.2 When the parameter is altered the classification number is indicated in double-bit hexadecimal number system and the parameter value is indicated in double-bit decimal system. The current bit is indicated by twinkling.

1.3 The parameter set alarm is indicated by two-figure twinkling. The first figure twinkling indicates the false parameter classification (U、H、P) and the second one twinkling indicates "—".

1.4 Failure indication. The first figure twinkling indicates "—" and the second twinkling indicates the failure code (1-9).

1.5 The panel indication preference: parameter set > parameter set failure > door operator failure > normal indicating.

2. Distribution of keys

① ③

② ④

upper left key ① ----- key \wedge , upturn parameter number / parameter value add by 1 / door open by panel operation;

lower left key ② ----- key \vee , downturn parameter number / parameter value reduce by 1 / door close by panel operation;

upper right key ③ -----key **F**, enter the parameter set / cursor shift / quit the parameter set /door operation pause;

lower right key ④-----key **Enter**, enter into parameter alteration / confirm the altered value

3. When A1=01 / A1=02 is set, can put key \wedge to open door or put key \vee to close door

When A1=02, to put key \wedge / key \vee can make the operating door reverse to open or close.

During A1=02 / A1=03 / self-tuning door operation can put key **F** to stop the open /close operation.

4. Under the condition without door open/close operation, to put key **F**, enter parameter set condition from normal indicating pulse.

5. First the parameter number A1 is indicated on the panel, to put key \wedge or key \vee to upturn or downturn (could put the key continuously for rapid turn) until to find the parameter number ready for alteration.

6. To put key **Enter** and shift to parameter alteration condition. The indication is current parameter value. To put key \wedge or \vee to alter the parameter value, (to put the key continuously for rapid alteration). You can put key **F** (this key turns to shift key under parameter alteration condition) to make the cursor shift between the two digits and then alter the parameter value. In the end to put key **Enter** for confirmation. The system will turn to the next parameter number automatically.

7. After all the parameters are set, to put key **F** for exit under indicating parameter number condition, the system enter normal operation condition.

8. For example, to alter the parameter C4 from 50 to 40, one of the applicable operation is as follows:

operation	indication
F	A1
\wedge	A6
.....

∧	C4
Enter	50
∨	49
.....
∨	40
Enter	C5
F	normal indicating pulse value

III、Operation condition

1.Offline-operation

The offline-operation is the system operates without the main controller of elevator. (A1≠00, non-terminal control) , Under the offline condition the position pulse indication is double-bit twinkling.

1.1Panel dot-act for door operation (A1=01)

When A1=01, to put the key ∧ continuously or key ∨ to keep the door opening or closing. The door operation will stop with releasing the key, Before the self-tuning the door only can operate through the panel dot-act function. But this function can not be applied for self-regulation with power up (detailed in the next).

1.2Manual operation for door open and close (A1=02)

When A1=02 and the door operator has done self-tuning, you can put key∧ or key ∨, the door will open or close continuously until to top or bottom. The operation can be stopped by key F.

1.3Automatic timing operation (A1=03/04, the demonstration function of door operator)

When A1 = 03/04 the door operator will open the door or close the door at predefined time. The time interval is set by A6, the operation is stopped by key F. The protection device can be connected directly such as infrared screen or safety shoe.

2.Online condition

It is the condition that the operation should be controlled by elevator controller. (to set A1=00, terminal control)。 **Under online condition the position pulse is indicated in double-bit normal form without twinkling.**

3.Attention

After the commissioning or maintenance and before normal use the panel indicating should be paid attention to and make sure it is under online condition (without twinkling). Otherwise the automatic operation of elevator can not perform normally.

IV、Electric commissioning

1.Preparation

To connect the wires and cables according to the diagram. To make the plugs are inserted well. To lift the elevator to leveling position. First to cut off the power supply of door operator controller and turn the door operator by hand forth and back. When there is no death the power supply can be connected and the commissioning can be started.

2.The door operator system has been commissioned before delivery and it can operate normally with the outer cables connected. If the user want to re-commission the following steps can be followed:

3.To set L1=01, default value.

4.To confirm the direction of door operation

To make the door operator power supply cut-off and the door board half-open and half-close. To make power on and set A1=01, then put key \wedge , the operation direction is door open direction; to put key \vee , the operation direction is door close direction. If the direction is reverse “- 8” or “- 7” failure can be indicated, now you can change the value of A4.

5.To make sure the pulse direction

Observation should be done during the door operation. If the door is opening the pulse-indicating digit value on panel should increases and decreases if the door is closing. Otherwise will indicate “- 8” or “- 7” failure. Set value of A3 should be changed.

6.To regulate the slow-speed door open/ close V/F curve (attached electric diagram 2)

To set A1=01 and put key \wedge to make the door whole-stroke open twice. If there is “-8” failure showing the slow-speed moment is not enough. You could increase U1、 U2、 E2、 E4 appropriately to make sure that the door can open smoothly in the whole stroke. To put key \vee and make the door whole-stroke close twice. If there is “-7” failure showing the slow-speed frequency is too low. You can increase E6 appropriately to make sure that the door can close smoothly in the whole stroke.

For the side opening of huge door and four-panel center opening door, you can increase the output moment and slow-speed frequency appropriately. Generally U1 and U2 can increase 3~5, E2、 E4、 E6 increase 2~4 to resist larger mechanical resistant force.

7.To regulate the door-open holding force

To lift the elevator to leveling position, and make the door skate closes the landing door, to set A1=01, to make the door the any unclosed position by key \wedge or \vee . If the door can be kept static you can turn to next step. Otherwise to regulate E7 and U1 until the door stops and doesn't move in unclosed condition. If the door moves to the opening direction showing the door-open holding force is over-large. You can decrease U1 or E7(usually U1); If the door moves to the closing direction showing the holding force is not enough, you can increase U1 or E7 (usually U1). U1 must be small than U2, U3 and U4. Otherwise the system will report failure.

8.Self-tuning

8.1 To set L2=01 and quit the parameter set. The door operator self-tuning begins.

8.2 First the system close the door as per the frequency set through E2 and indicating pulse decreases.

When the door is fully closed the initial value should be set as 0.

Attention: 1.If the operation direction of door is reverse, to regulate the phase turn of electric motor. Namely to alter the parameter A4.

2.If the door doesn't move, to check the plug of electric motor is inserted tightly.

3.If the door stops without full closing, to check the connection of coder.

4.If the indicating pulse increases during door closing, to regulate the phase turn of coder, namely to alter the parameter A3.

5.If the position of door skate is wrong after door close, to check the installation of door skate and the regulation of rubber bolt. To check if the hinged plate is leaning on the middle buffer rubber.

6.If the gate can not be fully closed, to check if there is any mechanical failure.

8.3 Then the system will open the door as per the frequency set through E2.The indicating pulse increases. The pulse digit value will be memorized as the door width in EEPROM permanently after the door is fully opened. At the same time the operation curves for gate open and close will be computed automatically. Self-tuning is ended. L2 is auto-set as 0 without manual alteration.

Attention: If the door can not be fully opened

1.To check the mechanical installation and make sure the door is not blocked and the output moment is larger than the resistant moment. 4.6 could be reference.

2.To check the cable connection and installation of coder. If the indicating pulse decreases, to alter A3.

8.4 If there is any abnormal conditions during self-tuning it can be stopped by key F. And the learning can be restarted after the problem is solved.

9.To test operate and observe the operation condition.

To set A1 = 02 for manual panel door-closing. To put key \wedge or \vee , the door will open or close continuously until to the end. The operation is stopped by key F.

According to the operation of door operator, to regulate the slowdown points (parameters of group F), frequency parameters (parameters of group E) and time parameters (parameters of group C) to meet your requirement.

If there is obvious impact when the door is fully closed **If the speed is obviously slow down when the door is fully closed**

To increase the door-closing deceleration pulse F1 To decrease the door-closing deceleration pulse F1

To decrease the door-closing deceleration time C6;
C6;

To decrease the door-closing frequency E5; To increase the door-closing frequency E5;

If there is obvious impact when the door is fully opened **If the speed is obviously slow down when the door is fully opened**

To increase the door-opening deceleration pulse F2 To decrease the door-opening deceleration pulse F2

To decrease the door-opening deceleration time C4;
C4;

To decrease the door-opening frequency E3 To increase the door-opening frequency E3

Generally only to regulate F1 / F2 can meet the requirement.

If the width of the gate is very large, it is applicable to increase the door operation speed and increase the value of F2 and F1 correspondingly.

10. Self-regulation with power up

When the door controller powers up it indicates 49 and waits for the door operation command. When A1 ≠ 01 the first door operation command the door controller receives is self-regulation with power up (it' s the reference position for find the door position). It will operate in E2 frequency (moderate speed) until the final position and reset the initial value (if the command is door-opening the value is 99 and if the command is door-closing it is 00).

If the self-tuning is performed after power up it is considered that the regulation has completed.

To set A1=02 during commissioning and put the key \wedge or \vee making the door fully open or fully close. The self-regulation with power up is completed.

11.The regulation for urgent-stop time (It need not regulate generally)

The impact due to reverse operation during door operation can be changed by regulating C7. At first to slow down the current speed to zero speed in C7 slope. Then to operate in the target speed and time.

12.The speed regulation of retraction / extension of door skate (It need not regulate generally)

To regulate E2 for altering the retraction / extension speed of door skate and it is normally set between 14 and 16.

13.The regulation of door fully-closing (It need not regulate generally)

To regulate F4 and C7 can make the door skate to the final position without impact when the door is fully closed.

14.The regulation of door fully-opening (It need not regulate generally)

To regulate F5 can make the door open to the final position exactly without large impact.

15.The regulation of resistance force and over-moment during door-closing (attached electric diagram 2)

To regulate U4 can control the resistance force within the limit of national standard ($\leq 150N$) .It is not applicable to reduce the force too much so as not to decrease the moment for normal door-closing.

To regulate U3 can make the door-opening moment be in your target scope. It is normally set to be 5—10 more than U4.

16.The sketch for door operation (attached electric diagram 3)

V、 Whole operation

To remove the outer input signal cable (to make sure there is no door-opening signal and door opening is preferential if there is door-opening signal)

To set A1 = 00, the door should be able to open normally when COM is communicated with door-opening signal input terminal (such as H2) with conductive wire. The door should be able to close slowly when COM is communicated with slow-closing signal input terminal (such as H3) with conductive wire. So the independent operation of door operator has commissioned successfully.

To make the outer input cable be connect. The door should be able to operate normally. Otherwise it is necessary to check if the set for normal-open and normal-close is correct when the door is operated to the final position. (The default value is that the door is fully closed). To check if the connection of elevator control cabinet and the door operator is correct)

VI、 The parameter assess of door operator

Attention: The parameters in group A, H, P and L are excepted.

To set L1 = 01. It is applicable to copy the system default parameters to current applying parameters. (system parameter is used);

To set L1 = 02. It is applicable to copy parameters defined by users to current applying parameters (user-defining parameter is used);

To set L1 = 03. It is applicable to copy current applying parameters to user-defining parameters (the user-defining parameters are memorized)

VII、 Parameter set alarm

Before the user quit the system parameter alteration the system will check all the parameters input by the user. If there is any error the cursor will shift to the classification number the error exists and indicate the parameter classification by twinkling. To put key F the parameter can be reset.

Twinkling indicates “H—” : The input signal is repeated defined or the door-opening/ door closing signal is not defined.

Twinkling indicates “P—” : The output signal is repeated defined or the door full-opening signal is not defined.

Twinkling indicates “U—” : The voltage-frequency curve is wrong. It should meet the condition $U1 < U2 < U4$ 、 $U3$.

VIII、Door operator failure

1.The failure code

- 1 to—3 inner failure of system; —4 short-voltage; —5 over-voltage; —6 over-current;
- 7 There is failure during door-closing, coder failure, coder direction is reverse, coder cable is not well connected, the synchronizing bell is over-loose, the door-closing voltage-frequency ratio is set too small;
- 8 There is failure during door-opening, coder failure, coder direction is reverse, coder cable is not well connected, the synchronizing bell is over-loose, the door-opening voltage-frequency ratio is set too small;
- 9 There is failure during door-opening, coder failure, coder direction is reverse, coder cable is not well connected, the door-operator is no output, the motor loose phase;

2.If the failure is in 1—6 system will send system failure signal. Failure 1 — 3 are system inner failure signals. It can be reset by power cutoff. If the power cutoff can not reset it please call our company's professional personnel for help. If the failure 4 to 6 occurs you can check the operating voltage and electric motor of door operator.

3.If the failure 7-8 occurs door failure signal will be sent. You can check if there is failure in the door sill or door operation. If there is no failure in door operation you can check the cable connection of coder, check the electric motor and the cable connection, if the synchronizing bell is too loose and there is slip, at the end check the V / F voltage-frequency ratio in group U: if the U1、U2、U3、U4 are set too small (the door-operation moment is too small), if so you can commission and set according to 4.6 and 4.15.

4.If the failure 9 occurs the power must be cut off then reset it. You can check if there is failure in the door sill or door operation. If there is no failure in door operation you can check the cable connection of coder, check the electric motor and the cable connection, if so you can commission and set according to 4.6 and 4.15.

Attention: After the door operator is installed at site, it should be avoided that the conductive materials such as iron sludge. Otherwise it could cause short-circuit and unit damage.

Note: If the default value is * , it's value should be determined according to the actual condition. Generally it has been set and is not indicated. If the set needs to be altered just set A1=03 and A6=33, it can be indicated. Only the experienced person can do alteration and don't forget to alter A1 and A6 to the initial value in the end.

IX、Ordinary malfunction & disposal

1. fail to learn by itself after door mechanism is electrified

1.1 machine failure cause

Before being electrified to learn by itself, open and close door mechanism by hand. There is no mechanical block, otherwise renew to learn by itself after mechanism is adjusted.

1.2 motor turning mistake

Phenomenon: When learning by itself, open the door and then close the door. Whatever position the door is located when begin to learn by itself, first close the door and then open the door two seconds after closing the door. Disposal methods: modify A4, that is to say, replace 0 with 1 and replace 1 with 0.

1.3 impulse feedback mistake

Motor turning is right. When beginning to learn by itself, first close the door, but stop at the 2~5 cm position. And show impulse becoming bigger or invariable and become 00 when stopping. Then open the door reversely, stop at the 2~5 cm position. Showing 48 or 49 stands for failing to learn by itself. Impulse increases when opening the door while impulse decreases when closing the door. Disposal methods: modify A3, that is to say, replace 0 with 1 and replace 1 with 0.

1.3.1 Examine whether encoder link is good or not. If it is not good, tightly fix link terminals and tightly plug in.

1.3.2 Examine whether there is scrap iron on the synchro strap-wheel and the magnetic ring or not. And check whether the magnetic ring is torn down or not. If there is scrap iron, then clear it and go on to use. If the magnetic ring is incomplete, replace the synchro strap-wheel.

1.4 door mechanism type choice mistake

phenomenon: The course of learning by itself is natural. First close the door and the impulse decreases. Impulse shows 00 after closing the door. Then impulse increases when opening the door again. Impulse shows 99 after opening the door. But at this time set A1 as 02, then fail to open and close the door naturally. Check A7(consult the reference), correctly set A7 and renew to learn by itself .

2. After opening the door, impulse shows 97 and 98.

2.1 When the door is closed completely, door reamer is stretched incompletely. Set F4 as 01 and F5 as 01.

2.2 Preserving force of opening the door is not enough. Set U1 as 25, U2 as 28 and E7 between 35 and 45.

3. Elevator does not run after closing the door.

3.1 There is failure on the door link lock between hall door and car door. Check whether door link lock is contacted well or not.

3.2 The door reamer is not stretched completely. There is no output of closing door. Check rubber bolt position of top door reamer. Check whether door reamer arm touches setting screws or not.

3.3 P1 is set wrong. According to the requirements of elevator main control program, check whether P1 meets them or not. Set P1 as 01 when door mechanism controller is finished, that is, C1 and P1 are connected when the door is closed. Set P1 as 05, then C1 and P1 will be disconnected.

4 .After opening, don't close the door.

4.1 Top controller always keeps the opening signal. Measure H2 and COM using multimeter at direct voltage position, they normally are 12V without signal.

4.1.1 0 V means that opening signal is always handed down from top controller.

4.1.1.1 Checking the matching cable and the controlling tank.

4.1.1.2 Check if there are not output signals all the time when the door reach the opening position.

4.1.1.2.1 If it shows 99, but there is no output. Relay may be broken or P2 has been set wrong.

4.1.1.2.2 If impulse is less than 99, then check whether the door is at the poison or not, referring 2

4.1.1.3 If it shows -8, check if there are mechanical faults in the opening course.

4.1.2 If it is far larger than 12V, it means that there are some disturbing signals or other voltages are connected. Please check the matching cable, and separate power lines from signal lines.

4.2 Top controller has no closing signals. Connect car peak and H1 and COM with leads (you'd better break down signal line H2 to ensure there are no opening signals. Because if there are opening signals and closing signals at the same time, open door first.). If the door can be closed, there are no closing signals from the top controller, check the cable or the controlling tank.

5. Debugging is good, but on-line work can't be opened and closed.

P1 and P2 are set wrong. According to the requirements of elevator main control program, check whether P1 meets them or not. Set P1 as 01 when door mechanism controller is finished, that is, C1 and P1 are connected when the door is closed. Set P2 as 02, C2 and P2 are connected when the door is opened. Set P1 as 05, C1 and P1 are broken when the door is closed. Set P2 as 06, C2 and P2 are broken when the door is opened.

6. Display abnormality.

Earth line is wrong, please connect controller and motor with the earth line, and then connect it to the earth correctly.

7 .velocity can not be adjusted to the best state when the door is closed.

7.1 Rubber bolt is not adjusted to the position, make sure that the door touches the lock draw 15~16mm before the closing position.

7.2 Door broad is installed incorrectly, make sure that the gap in the broad is against the middle rubber buffer block before door is closed tightly.

8. There are unusual noise when opening the door, and motor doesn't work.

8.1 Check if the plug of motor is inserted tightly.

8.2 Check if E1 works normally, E1 is always 15Hz without deceleration organization

8.3 measure three-phase direct current resistance, it is $41.75 \sim 46.15 \Omega$ normally, if some phase is missing, the motor is broken.

9. The door is opened normally. Car door and layer door are not synchronous in close course.

9.1 check if the lock draw spring is disable. If door reamer nip the trolley in close course, car door and layer door are synchronous.

9.2 check if the lock draw wear and tear. The phenomenon is like 9.1.

10. Individual layer doors have some problems.

Layer door accessories are set incorrectly. Adjust them to ensure:

10.1 Center of accessories of layer door coincides with that of door mechanism.

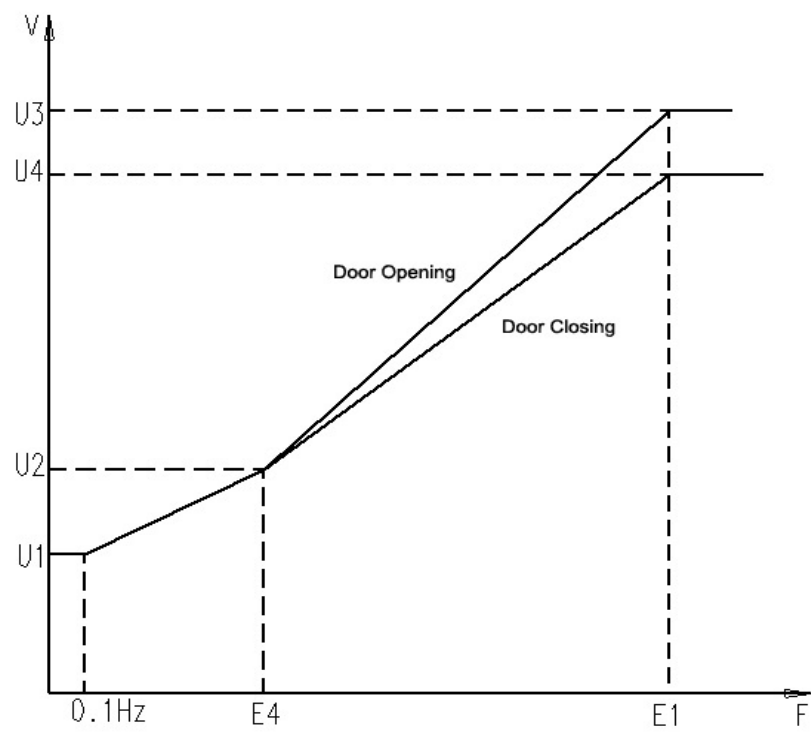
10.2 The joggle between door reamer and trolley accords with requirements. At that time layer door and car door are synchronous in opening and closing course.

10.3 Check the hall door lock to ensure if that the gap between up and down lock draw meets the requirements of scale line when the hall door is closed.

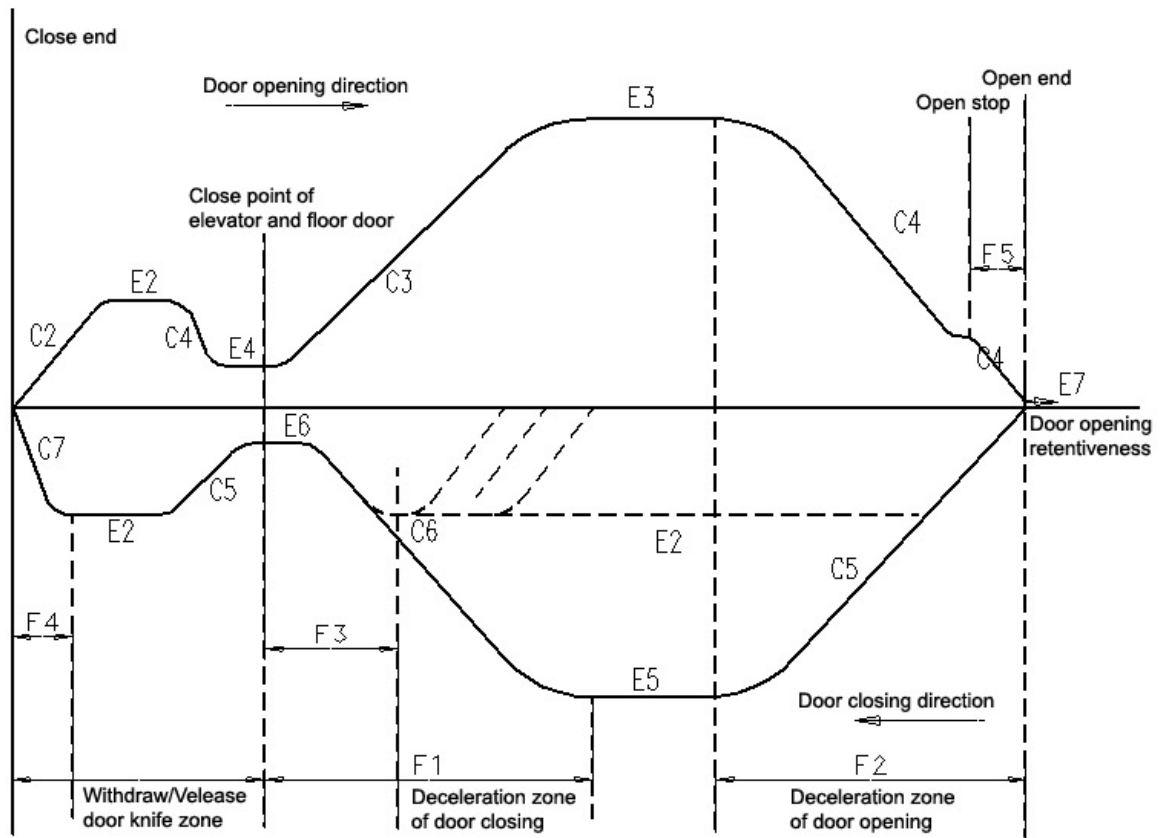
10.4 Check the earth ridge, and check if there are litter in the rail.

10.5 Inspect mechanical installation, if the resistance is too high, increase U group parameters' value properly, strengthen output moment.

The electric attached diagram 2



The electric attached diagram 3



Parameter Sheet of digital VVVF Timing Belt Door Operator

Parameter No		Functions Description	Scope	Figure beforeETW
A Group	A1	00- terminal control; 01-front panel spot touching operation, 02- front panel manual operation, 03/04-auto –door opening/closing	00-04	00
	A2	00-synchronous door skate , 01-asynchronous door skate	00-01	00
	A3	00-coder Phase A prior to Phase B, 01-coder Phase B prior to Phase A	00-01	00*
	A4	00-motor phase U, V and W is for door opening, 01- motor phase U, W and V is for door opening	00-01	01*
	A5	Maximum time of door opening retentiveness, unit is 1 minute, if less than 5, system sets 5 minutes	00-99	30
	A6	Interval of auto-opening or closing, unit is 1 second, if less than 2, system can set 2 seconds.	00-99	10
	A7	00-direct drive 01- opening wide from 2500 to 3000mm 02-spare 03-opening wide from 1500 to 2400mm 04-small opening explosion-proof door operator 06-A、 B door operator and coder on motor	00-06	00*
E Group	E1	Reference frequency of opening & closing door (hz) (normally 50hz)	12-99	15*
	E2	Middle speed frequency of door opening/closing (percentage of E1)	12-99	15
	E3	Quick speed frequency of door opening (percentage of E1)	55-99	65
	E4	Slow speed frequency of door opening (percentage of E1)	08-99	10
	E5	Quick speed frequency of door closing (percentage of E1)	50-99	60
	E6	Slow speed frequency of door closing (percentage of E1)	04-99	05
	E7	Door -opening holding frequency	20-99	25
C Group	C1	Time (slope) reference (the duration from zero speed to E1 : normally 2 seconds)	00-99	02*
	C2	Slope of opening door and releasing door skate (percentage of C1)	00-99	40
	C3	Acceleration time of door opening (percentage of C1)	00-99	40
	C4	Deceleration time of door opening (percentage of C1)	00-99	50
	C5	Acceleration time of door closing (percentage of C1)	00-99	40
	C6	Deceleration time of door closing (percentage of C1)	00-99	50
	C7	Emergency stop time (percentage of C1, normally C7 is the smallest one in C group)	00-99	35

Parameter No		Function Description	Scope	Figure beforeETW
U Group	U1	Correspondence voltage of 0.1Hz (percentage of 220V)	00-99	23
	U2	Correspondence voltage of E4 (percentage of 220V)	00-99	25
	U3	Correspondence voltage of E1 while opening door (percentage of 220V)	00-99	60
	U4	Correspondence voltage of E1 while closing door (percentage of 220V)(normally U1<U2<U4<U3)	00-99	55
H Group	H1	Multifunction input (00 not used; 01-05 signal of frequent door opening, 06-10 signal of frequent door closing) 01/06 –Door closing input, 02/07 – Door opening input, 03/08 – slow door closing input 04-09 – electric eye signal, 05/10 –non door- opening zone Different terminals' function can't be repeatedly defined, 01/05 , 02/06 function must be defined	00-08	01
	H2			02
	H3			03
	H4			00
P Group	P1	Multifunction output (00 not used, 01-04 signal of frequent opening, 05-08 signal of frequent closing) 01/05 – door closes to the designated position, 02/06- door opens to the designated position;	00-10	01
	P2			02
	P3			03
	P4			04
F Group	F1	Deceleration point of quickly door closing, deceleration distance : F1 pieces of system unit	00-99	19
	F2	Deceleration point of quickly door opening, deceleration distance : F2 pieces of system unit	00-99	20
	F3	Deceleration point of closing door at middle speed, F3 pieces of system unit	00-20	03
	F4	Deceleration point of door closing to the designated position , F4 pieces of system unit	00-10	02
	F5	Deceleration point of door opening to the designated position, F5 pieces of system unit	00-10	02
L Group	L1	01-Get default value, 02-Get user's set value, 03-Save user's set value	00-03	00
	L2	01- Door operation self learning	00-01	00
	L3	01-Look over history failures, 02-Delete history failures	00-02	00
	L4	00- Display the pulse of door position, 01/02 – Display open/close duration excluding or including withdrawing & expanding door skate	00-02	00

Note : The Parameter with * is not displayed. If you want to change it , you must set A1=03,A6=33.
Then you can see these Parameter and change them . After you finish it ,you should set A6=10.