FOREWORD

Thank you for purchasing YS-K01 door controller manufactured by Suzhou Eshine Elevator Components Co., Ltd.

This User Manual of YS-K01 (hereinafter referred to as controller) describes how to use controller and its installation wiring, operation and debugging, troubleshooting and daily maintenance etc. Before using the product, please read through this User Manual carefully. In addition, please do not use this product until you have fully understood safety precautions.

Note:

- Preserve this Manual for future.
- Due to product upgrade or specification change, and for the purpose of improving convenience and accuracy of this manual, this manual's contents may be modified.
- If you need the User Manual due to damage, loss or other reasons, please contact the regional distributor of our company or directly contact our company Technical Service Center.
- For the first time using, the user should carefully read this manual.
- If you still have some problems during use, please contact our company Technical Service Center.
- Service telephone: +86-512-66608598 or +86-13771989353
- The product warranty is on the last page of this Manual, please preserve it for future.

CONTENTS

Chapter 1 Safety and Precautions

1.1 Safety Definition


Danger

Danger: A Danger contains information which is critical for avoiding safety hazard.


Warning

Warning: A Warning contains information which is essential for avoiding a risk of damage to product or other equipments.

Note

Note: A Note contains information which helps to ensure correct operation of the product.

1.2 Precautions

Before delivering, this product has been strictly checked and reliably packaged. Due to handling, loading and unloading in transit, it may cause damage. Therefore, after open the package please check product integrality carefully:

Check items	Check methods
Whether there is damage to parts or damaged	Check the overall appearance, check if there is damage in transit
If there is loose screws or other fasten parts	If necessary, use the screwdriver to check
Manual, certification, warranty card and other accessories	Check the accessory

If has lacked, please contact manufacturer.

Chapter 2 Installation and Wiring

Danger

- Do not install if the controller is imcomplete or impaired.
- Make sure that the controller is far from the explosive and combustible things.
- Bare metallic part of the power terminal wiring should be with insulating tape to wrap up.
- Only qualified electrical engineer can perform wiring job.
- Only when the power supply is completely cut-off 10 minutes later can you do the wiring job.
- The communication wire must use shielded twisted-pair cable with 20－30mm twisted interval, and the shielding layer must be grounded.
- The encoder must use a shielded wire, and the shielding layer must be connected to ground reliably.
- Do not connect the power input terminals to the output terminals (U/V/W) of the controller.
- The earth terminal PE of the controller must be reliable earthing. It must use two separate earth wire due to the leakage current from the controller to ground.
- Do not touch the wire terminals of the controller when it is live. The main circuit terminals is neither allowed connecting to the enclosure nor short-circuiting.
- Only when the controller terminal cover has been fitted can you switch on AC power source. Do not remove the cover after power is switched on.

Warning

- Do not play metal into the controller when installing.
- Do not start and shutdown the controller by connecting and disconnecting the contactor.
- Detection of signals during the operation shall only be conducted by qualified technician.
- Do not do dielectric strength test on the controller.

Ensure the installation site meeting the following requirements:

- Do not install at the direct sunlight, moisture, water droplet location;
- Do not install at the combustible, explosive, corrosive gas and liquid location;
- Do not install at the oily dust, fiber and metal powder location;
- Be vertical installation on fire-retardant material with a strong support;
- Make sure adequate cooling space for the controller so as to keep the ambient temperature among - 10－+ 40℃;
- Install at where the vibration is lesser than 5.9m/s^2 (0.6g).

Note:

1. We need derate value if the controller operation temperature exceeds 40℃. The derate value of the output current of controller shall be 2% for each degree centigrade. Max. allowed temperature is 50℃.

2. Keep ambient temperature among -10－+40℃. It can improve the controller operation performance if install at the location with good ventilation or cooling devices.

2.1 Terminal Layout

The connection terminal layout of controller is shown as Figure 2-1.

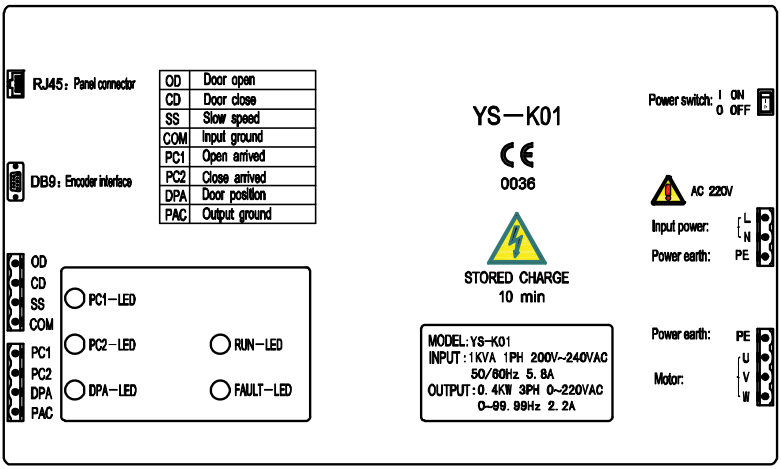


Figure 2-1 Position of terminal

2.1.1 Power Supply Switch

In order to make debugging and maintenance work easily, we have designed a power switch in the controller which will help engineers to operate elevator easily.

Note:

1. When the power supply of controller is cut down, the input 220V terminal still has high voltage. Do not touch or plug the 220V terminal until the external power supply cut down, or there will be danger of shocking.

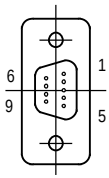
2.1.2 Input Main Circuit Power Terminal Description

Terminal name	Function description
L、N	Single-phase AC 220V power supply input terminals
PE	Protective earth point

2.1.3 Output Main Circuit Power Terminal Description

Terminal name	Function description
PE	Protective earth point
U、V、W	Motor connection terminal

2.1.4 Control Signal Terminal Description

<table>
<tr><th>Symbol</th><th>Terminal name</th><th>Function description</th></tr>
<tr><td>DB9</td><td>Pulse encoder signal terminal</td><td>+24V, the maximum output current is 200mA; and the maximum pulse frequency is 35kHz
 

<table><tr><th>DB9 pin No.</th><th>Signal identity</th></tr><tr><td>1</td><td>COM</td></tr><tr><td>2</td><td>A</td></tr><tr><td>3</td><td>/Z</td></tr><tr><td>5</td><td>+24</td></tr><tr><td>6</td><td>B</td></tr><tr><td>7</td><td>Z</td></tr><tr><td>4、8、9</td><td>Reserved</td></tr></table></td></tr>
<tr><td>OD</td><td>Open-door command input terminal</td><td rowspan="3">The ON command is valid when terminal is connected with COM
The OFF command is invalid when terminal is disconnected with COM</td></tr>
<tr><td>CD</td><td>Closed-door command input terminal</td></tr>
<tr><td>SS</td><td>Slow speed command input terminal</td></tr>
<tr><td>COM</td><td>Input signal ground</td><td>Isolated from output ground PAC</td></tr>
<tr><td>PC1</td><td>Door open arrival signal output terminal</td><td rowspan="2">Contact rating: 125VAC/0.5A or 24VDC/1A
Relay output. It can be set as low or high level via parameter
DOA,CME normally open; DCA,CME normally open;</td></tr>
<tr><td>PC2</td><td>Door close arrival signal output terminal</td></tr>
</table>

DPA	Door position signal output terminal	DPA,CME normally open
PAC	Output signal ground	Isolated from input ground COM

2.1.5 Panel Interface Description

The controller can be connected to the optional special panel (YS-P01, YS-P02 or YS-P03) through RJ45 interface by general network wires. It can be used for the user parameter settings, copy and operation monitoring state etc. RJ45 interface is described as Figure 2-2.

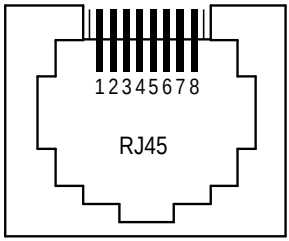


Figure 2-2 Panel interface

2.1.6 State Indicator Description

Symbol	Description
PC1-LED (green)	Set the open-door arrival as normally open contact and the indicator is off. When open door arrives, the indicator will be on Set the open-door arrival as normally closed contact and the indicator is on. When open door arrives, the indicator will be off
PC2-LED (green)	Set the closed-door arrival as normally open contact and the indicator is off. When closed door arrives, the indicator will be on Set the closed-door arrival as normally closed contact and the indicator is on. When closed door arrives, the indicator will be off
DPA-LED (green)	Set the door position signal as normally open contact and the indicator is off. When position arrives, the indicator will be on Set the door position signal as normally closed contact and the indicator is on. When position arrives, the indicator will be off
RUN-LED (green)	When the controller is not in running state at power on (standby), indicator will be on When the controller is in running state at power on, indicator will be flashing
FAULT-LED (red)	When the controller has fault, indicator will be on When the controller has no fault, indicator will be off

2.2 Terminal Wiring

The typical connection of controller is shown as Figure 2-3.

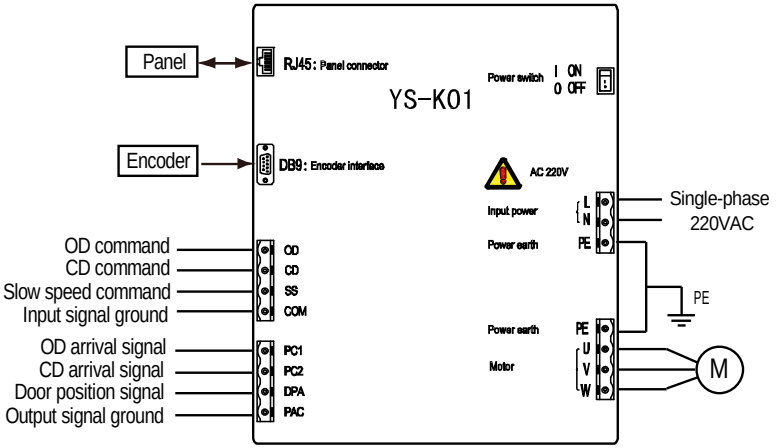


Figure 2-3 Controller connection

Note:

1. The input MCCB rating should use 6A single-phase air breaker.
2. The input power wiring and the output motor wiring should use copper multi-stranded cable whose diameter should not be less than 1mm^2.
3. It suggested that reliably connect the PE terminal to the ground via using copper multi-stranded cable whose diameter should not be less than 2.5mm^2.
4. Control signal input &output wires are suggested to use copper multi-stranded cable (diameter ⩾ 0.5). On serious interference condition you can use twisted-pair or shielded cable to improve the control system capacity.

Chapter 3 Operation Instructions

3.1 YS-P01 Panel Description

The default parameters of the controller can be changed via the optional LED panel (YS-P01). The YS-P01 is shown as Figure 3-1.

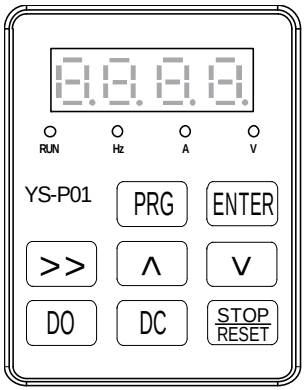


Figure 3-1 YS-P01 panel

The keys of YS-P01 panel and their functions are shown as Table 3-1:

Table 3-1 Description of keys of YS-P01

Key	Name	Function
PRG	Programmable/escape	Entry or exit programming key
ENTER	ENT enter/confirm key	Confirm saving the data
>>	SHF shift key	Selecting display parameter and shift bit
∧	Increment key	Increase value or parameter
∨	Decrement key	Decrease value or parameter
DO	OD key	OD running command
DC	CD key	CD running command
STOP RESET	Stop/reset key	To stop running; and to manually reset the fault

The LED panel of controller has 4-digit LED digital tubes and the meanings are shown as Table 3-2.

Table 3-2 Digital tube display description

LED display	Meaning	LED display	Meaning	LED display	Meaning	LED display	Meaning
	0		A		J		U
	1		b		L		u
	2		C		n		y
	3		c		o		—
	4		d		P		Point
	5		E		q		All display
	6		F		r		No display
	7		H		S		Flashing changeable
	8		h		T		
	9		i		t		

The YS-P01 panel has 1 state indicator and 3 unit indicators whose meanings are shown as Table 3-3.

Table 3-3 Description of indicator of LED panel

Identification	Name	Light color	Description
RUN	Running state indicator	Green	On: It represents the controller is at running state Off: It represents controller isn't at running state
Hz	Frequency unit indicator	Green	The present unit indicator is frequency
A	Current unit indicator	Green	The present unit indicator is current
V	Voltage unit indicator	Green	The present unit indicator is voltage
Hz & V	Percentage unit indicator	Green	Hz and V is on simultaneously, and the present unit indicator is percentage

The indicator has two states off and on. In the manual the identification is as follows:

○ The indicator is off; ● The indicator is on.

3.1.1 Display State of YS-P01 Panel

The controller parameters can be displayed via using the optional YS-P01 panel. The display state of panel of controller has stopping state, running state, editing state and alarming state.

Display parameter at stopping state

When controller stops running, the panel will display parameter at stopping state and this parameter unit indicator will be on, as shown in Figure 3-2. By pressing [>>] key to display other stopping parameters: door position pulse, OD/CD arrival signal (OD pulse arrival, OD torque arrival, CD pulse arrival, CD torque arrival), setting frequency, input terminal state and DC bus voltage.

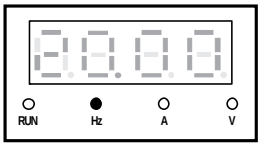


Figure 3-2 YS-P01 panel display at stopping state

Display parameter at running state

Press [DC] or [DO] key, the controller will be at running state, the panel will display the parameters at running state, the state indicator will display that the controller is at running state and the unit indicator will display this parameter's unit, which are shown as Figure 3-3. Press [>>] key to display other running parameters: door position pulse, OD/CD arrival signal (OD pulse arrival, OD torque arrival, CD pulse arrival, CD torque arrival), setting frequency, output frequency, output voltage, output current, output torque, DC bus voltage and input terminal state.

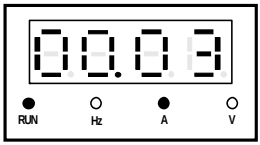


Figure 3-3 YS-P01 panel display at running state

Display parameter at editing state

At stop, run or fault alarm state, press PRG key to enter function parameter editing state (if there is user password, refer to the description of P0.00). The editing process description is shown in Figure 3-4 and the description of the keys is shown in Table 3-4.

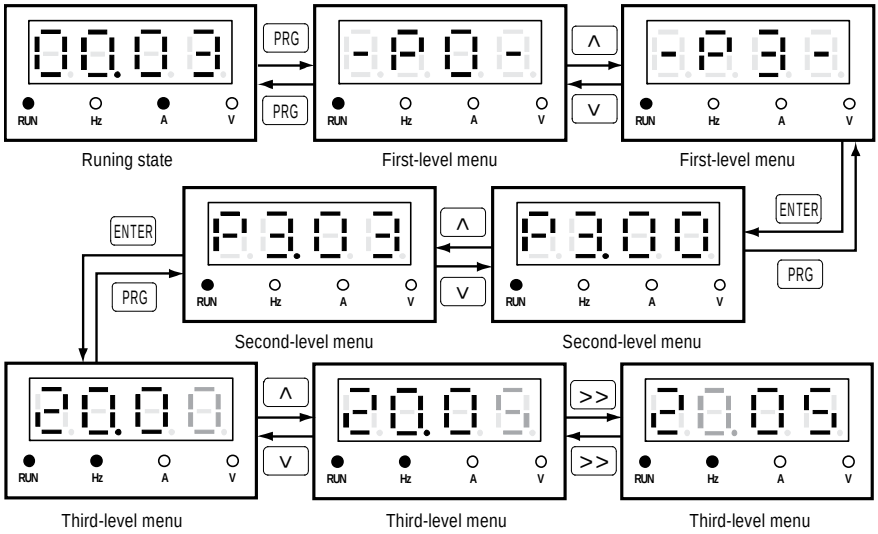


Figure 3-4 Editing state of YS-P01 panel

Table 3-4 Switching description of keys of YS-P01 panel

Key	First-level menu	Second-level menu	Third- level menu
PRG	Fault, return to faulty display; Fault cleared, return to run or stop state display.	Return to first-level menu	Do not save the present value and return to second-level menu
ENTER	Enter to second-level menu	Enter to third-level menu	Save the present value and return to second-level menu
Λ	Select function group	Modify the internal No. of function group. Increase by 1 according to the present modified bit	Modify function value. Increase by 1 according to the present modified bit
V	Select function group	Modify the internal No. of function group. Decrease by 1 according to the present modified bit	Modify function value. Decrease by 1 according to the present modified bit
>>	Invalid	Invalid	Switch units, thousands, hundreds, tens

In the setting third-level menu situation, if the parameter is not flashing to display, it indicates that this parameter can't be modified. The possible reasons are as follows:

- The function parameter can't be modified, such as the actual detected parameters or recorded parameters etc.

- Only when in stopping state can it modify the function parameter.
- Only input the correct password can it edit the function parameter due to the valid password.

Fault alarming state

If the controller is faulty, the panel will enter fault alarm state and be flashing to display fault code.

Press [STOP RESET] key to reset the panel.

3.1.2 YS-P01 Panel Self-testing

The panel of controller has self-testing function which facilitates periodic inspection for itself and the keys.

In controller stopping state, the panel self-testing will be started when press [ENTER] key and [STOP RESET] key simultaneously for 2－3 seconds.

The process of panel self-testing:

1. Press [ENTER] key and [STOP RESET] key, the panel's four LEDs will cyclically display "8." from left to right in turn for three times which is as shown is Figure 3-5.

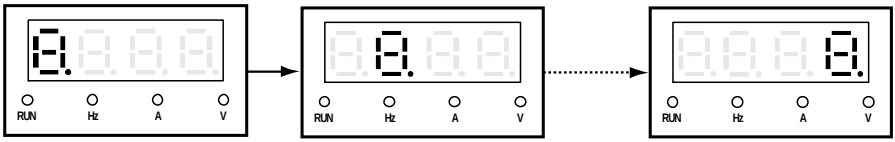


Figure 3-5 Self-testing of LED of YS-P01 panel

Later, the indicator will be cyclically bit by bit lighting from right to left for three times, shown as Figure 3-6.

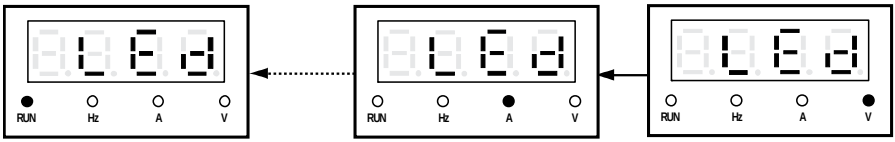


Figure 3-6 Self-testing of indicator of YS-P01 panel

2. Press any key of the panel and observe the LED and the state indicators to detect the corresponding key whether is valid. And the correct correspondence is as shown Figure 3-7.

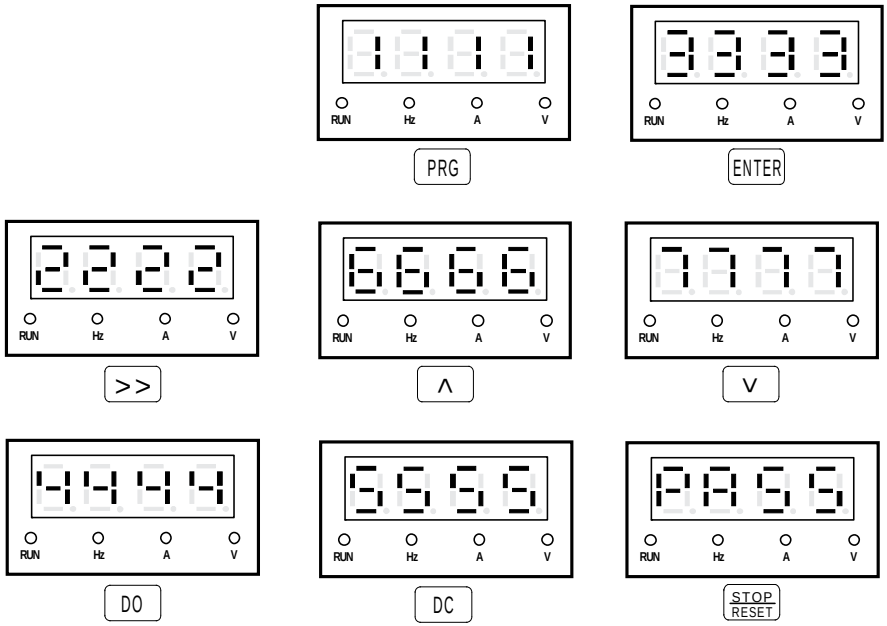


Figure 3-7 The correspondence between YS-P01 panel keys and displays

During this process, if there is no press in 4—5 seconds, it will directly jump to the step 4. If the self-check is success, it will jump to the step 3.

3. If the self-testing is success, the panel will display "PASS" and all keys are valid. The "PASS" will auto-disappear 3—5 seconds later and back to display state before self-testing.

4. If the self-testing is failure, the panel will display "FAIL". The possible reasons of self-testing failure are: no press within 5s or invalid key. The "FAIL" will auto-disappear 3—5 seconds later and back to display state before self-testing.

3.1.3 Reset Parameter and Clear Fault Information of YS-P01

Reset default parameter (synchronous motor parameters)

After set P0.01=3, except the fault parameter value, the parameter value of P0.00—P8.14 will be reset to the default parameter. At reset default parameter, the panel displays as Figure 3-8.

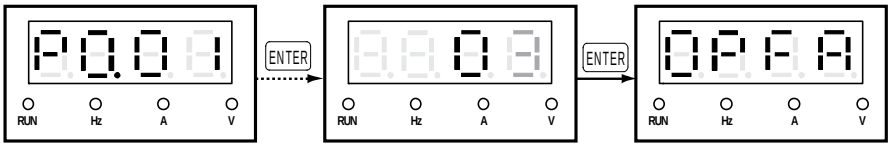


Figure 3-8 Reset the default parameter

Reset 70W asynchronous motor parameters

After set P0.01=11, except the fault parameter value, the parameter value of P0.00－P8.14 will be reset to the default parameter. At reset default parameter, the panel displays as Figure 3-9.

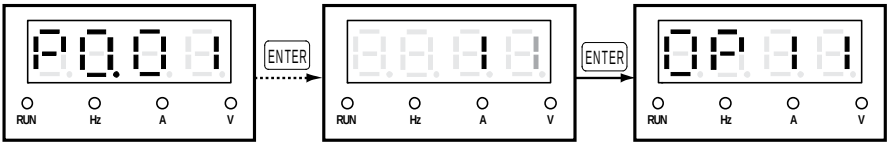


Figure 3-9 Reset 70W asynchronous motor parameters

Reset 80W asynchronous motor parameters

After set P0.01=12, except the fault parameter value, the parameter value of P0.00－P8.14 will be reset to the default parameter. At reset default parameter, the panel displays as Figure 3-10.

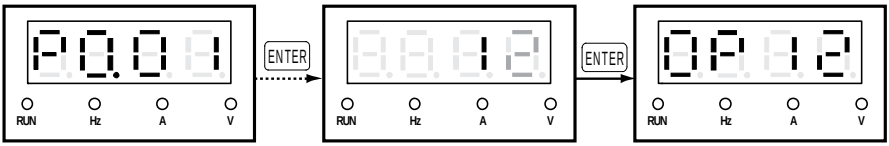


Figure 3-10 Reset 80W asynchronous motor parameters

Reset 150W asynchronous motor parameters

After set P0.01=13, except the fault parameter value, the parameter value of P0.00－P8.14 will be reset to the default parameter. At reset default parameter, the panel displays as Figure 3-11.

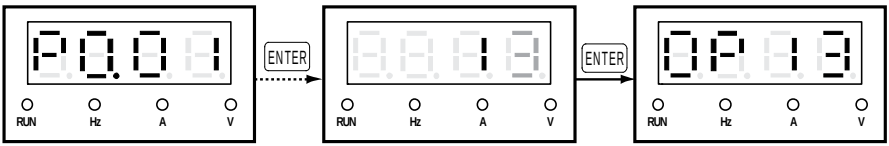


Figure 3-11 Reset 150W asynchronous motor parameters

Clear fault information

After set P0.01=4, the fault information of P9.00－P9.06 will be cleared which will be reset to the default parameter. At clear fault information, the panel displays as Figure 3-12.

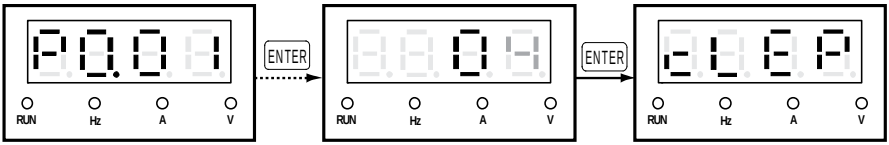


Figure 3-12 Clear fault information

3.2 YS-P02 Panel Description

The default parameters of the controller can be changed via the optional LED panel (YS-P02). The YS-P02 is shown as Figure 3-13.

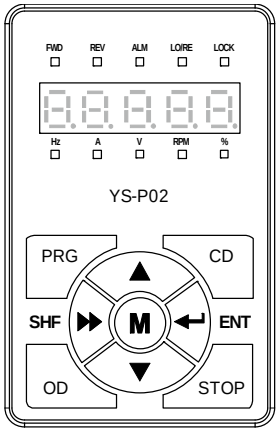


Figure 3-13 YS-P02 panel

There are keys on the YS-P02 panel and their functions, as shown in Table 3-5.

Table 3-5 Description of keys of YS-P02

Key	Name	Function
PRG	Programmable/escape	Entry or exit programming key
OD	OD key	OD running command
CD	CD key	CD running command
STOP	Stop/reset key	To stop running; and to manually reset the fault
M	Multi-function key	Reserved
↵	ENT enter/confirm key	Confirm saving the data
▶▶	SHF shift key	Selecting display parameter and shift bit
▲	Increment key	Increase value or parameter
▼	Decrement key	Decrease value or parameter

The YS-P02 panel has 5-digit LED digital tubes and the meaning is shown in Table 3-2. But the left LED digital tube of YS-P02 will not display all the time (except when the initial power on and the panel self-testing).

The YS-P02 panel has 5 state and 5 unit indicators and their meanings are shown as Table 3-6.

Table 3-6 Indicator description of YS-P02

Identification	Name	Description
FWD	OD run state indicator	ON: The present controller is in OD state OFF: The present controller is not in OD state
REV	CD run state indicator	ON: The present controller is in CD state OFF: The present controller is not in CD state
ALM	Warning state indicator	ON: The present controller is faulty OFF: The present controller is not faulty
LO/RE	Remote/local state indicator	ON: The present controller is not in panel control mode OFF: The present controller is in panel control mode
LOCK	Password lock state indicator	ON: The user password of present controller is enabled OFF: The present controller has no password or is at unlock state
Hz	Frequency unit indicator	ON: The present unit is Hz OFF: The present unit is not Hz
A	Current unit indicator	ON: The present unit is A OFF: The present unit is not A
V	Voltage unit indicator	ON: The present unit is V OFF: The present unit is not V
RPM	Rpm unit indicator	ON: The present unit is rpm OFF: The present unit is not rpm
%	Percentage unit indicator	ON: The present unit is % OFF: The present unit is not %

The indicator has two states off and on. In the manual the identification is as follows:

☐ The indicator is off; ■ The indicator is on.

3.2.1 Display State of YS-P02 Panel

The controller parameters can be displayed via using the optional YS-P02 panel. The display state of panel of controller has stopping state, running state, editing state and alarming state.

Display parameter at stopping state

When controller stops running, the panel will display parameter at stopping state, as shown in Figure 3-14. By pressing ▶▶ key to display other stopping parameters: door position pulse, OD/CD arrival signal (OD pulse arrival, OD torque arrival, CD pulse arrival, CD torque arrival), setting frequency, input terminal state and DC bus voltage.

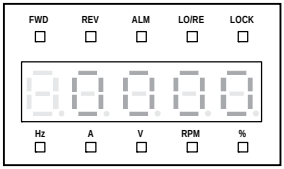


Figure 3-14 YS-P02 display at stopping state

Display parameter at running state

When the controller is at running state, the panel will display the running state parameters which are shown as Figure 3-15. Press ▶▶ key to display other running parameters: door position pulse, OD/CD arrival signal (OD pulse arrival, OD torque arrival, CD pulse arrival, CD torque arrival), setting frequency, output frequency, output voltage, output current, output torque, DC bus voltage and input terminal state.

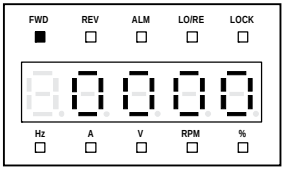


Figure 3-15 YS-P02 display at running state

Remark:

Display the input terminal states in hex and each bit (binary) of this function parameter stands for different physical sources, as following table.

Tens				Units			
Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
-	-	-	-	-	SS	CD	OD

0: The corresponding terminal and the common terminal are disconnected;

1: The corresponding terminal and the common terminal are connected.

Display parameter at editing state

At stop, run or fault alarm state, press PRG to enter function parameter editing state.

The panel uses third-level menu configuration for parameter setting or other operations. In turn: function parameter group setting (first-level menu)→function parameter setting (second-level menu)→parameter setting (third-level menu). Which is shown in Figure 3-16 and the description of the keys is shown in Table 3-7.

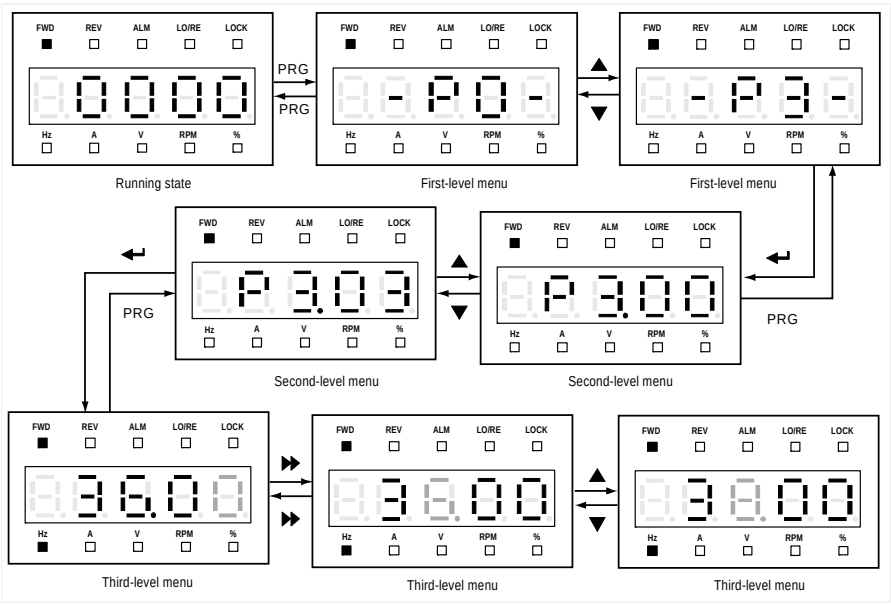


Figure 3-16 YS-P02 parameter editing state

Table 3-7 Switching description of keys of YS-P02

Key	First-level menu	Second-level menu	Third-level menu
PRG	Fault, return to faulty display; Fault cleared, return to run or stop state display.	Return to first-level menu	Do not save the present value and return to second-level menu
↵	Enter to second-level menu	Enter to third-level menu	Save the present value and return to second-level menu
▲	Select function group	Modify the internal No. of function group. Increase by 1 according to the present modified bit	Modify function value. Increase by 1 according to the present modified bit
▼	Select function group	Modify the internal No. of function group. Decrease by 1 according to the present modified bit	Modify function value. Decrease by 1 according to the present modified bit
▶▶	Invalid	Invalid	Switch units, thousands, hundreds, tens

In the setting third-level menu situation, if the parameter is not flashing to display, it indicates that this parameter can't be modified. The possible reasons are as follows:

- The function parameter can't be modified, such as the actual detected parameters or recorded parameters etc.
- Only when in stopping state can it modify the function parameter.
- Only input the correct password can it edit the function parameter due to the valid password.

Display faulty state

If the controller is faulty, the panel will be flashing to display the fault code. After troubleshooting, press STOP key to reset and the panel restores to stop state. Refer to Chapter 6.

3.2.2 YS-P02 Panel Self-testing

The panel of controller has self-testing function which facilitates periodic inspection for itself and the keys.

In controller stopping state, the panel self-testing will be started when press ▶▶ key and ↵ key simultaneously for 2－3 seconds.

The process of panel self-testing:

1. Press ▶▶ key and ↵ key simultaneously for 2－3 seconds, the panel's five LEDs will cyclically display "8." from left to right in turn for three times which is as shown is Figure 3-17.

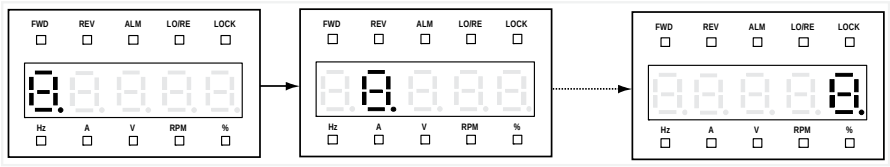


Figure 3-17 Self-testing of LED of YS-P02

Later, the indicator will be cyclically bit by bit clockwise lighting from the first upper left for three times, shown as Figure 3-18.

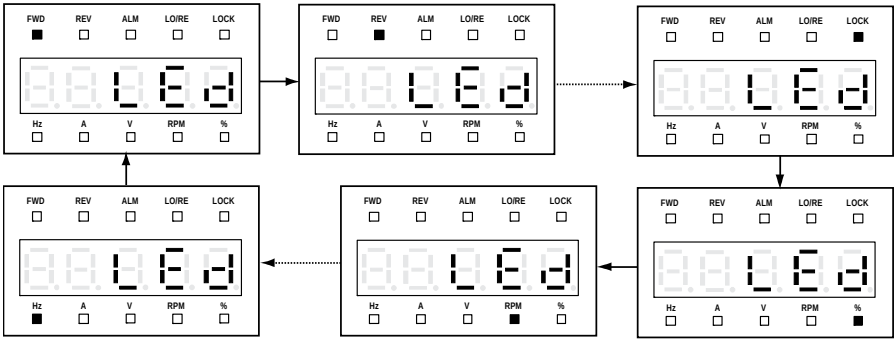


Figure 3-18 Self-testing of indicator of YS-P02

2. Press any key of the panel and observe the LED and the state indicators to detect the corresponding key whether valid. And the correct correspondence is as shown in Figure 3-19.

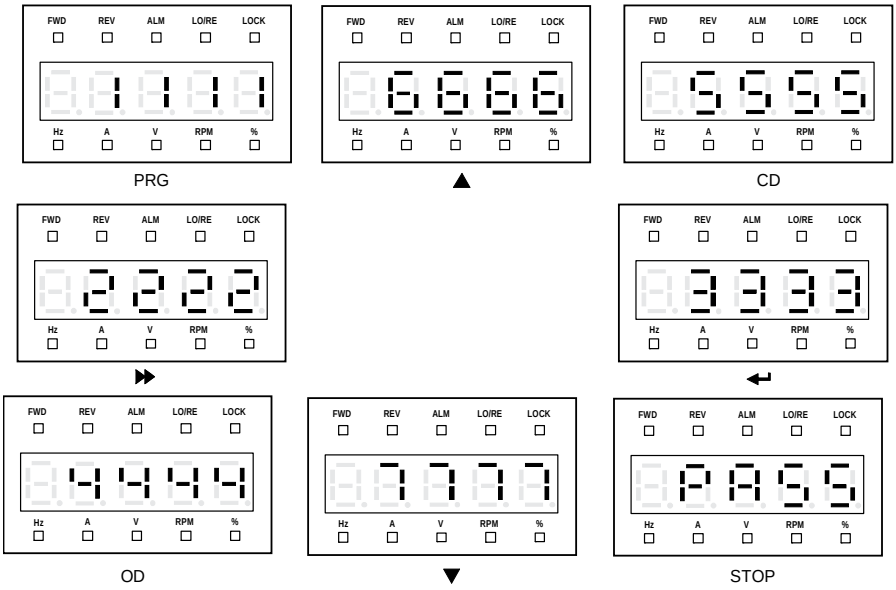


Figure 3-19 Correct correspondence of the keys and the displays of YS-P02

During this process, if there is no press in 4—5 seconds, it will directly jump to the step 4. If the self-check is success, it will jump to the step 3.

3. If the self-testing is success, the panel will display "PASS" and all keys are valid. The "PASS" will auto-disappear 3—5 seconds later and back to display state before self-testing.

4. If the self-testing is failure, the panel will display "FAIL". **The possible reasons of self-testing failure:** no press within 5 seconds or invalid key. The "FAIL" will auto-disappear 3—5 seconds later and back to display state before self-testing.

3.2.3 Reset Parameter and Clear Fault Information of YS-P02

Reset default parameter

After set P0.01=3, except the fault parameter value, the parameter value of P0.00—P8.14 will be reset to the default parameter. At reset default parameter, the panel displays as Figure 3-20.

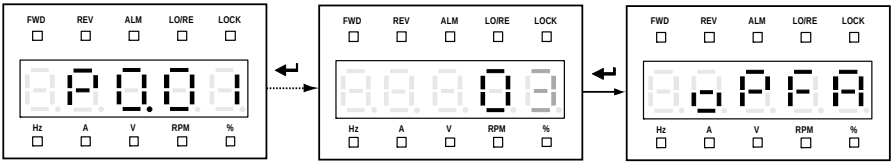


Figure 3-20 YS-P02 reset the default parameter

It should refer to YS-P01 reset descriptions for the YS-P02 operations of reset 70W, 80W and 150W asynchronous motor.

Clear fault information

After set P0.01=4, the fault information of P9.00－P9.06 will be cleared which will be reset to the default parameter. At clear fault information, the panel displays as Figure 3-21.

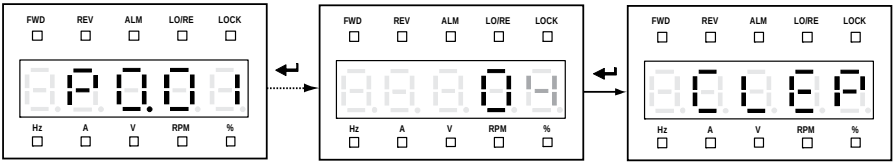


Figure 3-21 YS-P02 clear the fault information

3.3 YS-P03 Panel Description

The default parameters of the controller can be changed via the optional LCD panel (YS-P03). The YS-P03 is shown as Figure 3-22 and the key function is shown as Table 3-5.

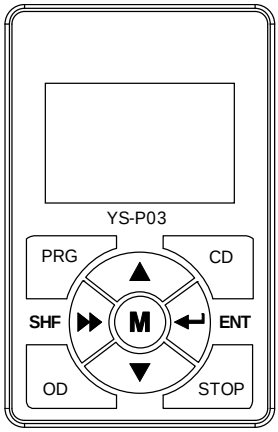


Figure 3-22 YS-P03 panel

3.3.1 Display State of YS-P03 Panel

The controller parameters can be displayed via using the optional YS-P03 panel. The display state of panel of controller has stopping state, running state, editing state and alarming state.

Note:

LCD anti-color displays: display in white on black, such as CD, OD, BASIC, P3.01、36.01Hz etc.

If the state is in anti-color displaying, it means that it is in this state. Take OD for example, it means the controller is in the OD controlling state.

If the parameter or the setting value is in anti-color displaying, it means that it can be changed. Take 36.01Hz for example, it means that the units of setting value can be changed.

Display parameter at stopping state

When controller stops running, the panel will display parameter at stopping state, as shown in Figure 3-23. By pressing ▶▶ key to display other stopping parameters: door position pulse, OD/CD arrival signal (OD pulse arrival, OD torque arrival, CD pulse arrival, CD torque arrival), setting frequency, input terminal state and DC bus voltage.

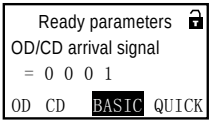


Figure 3-23 YS-P03 display at stopping state

Display parameter at running state

When the controller is at running state, the panel will display the running state parameters which are shown as Figure 3-24. Press ▶▶ key to display other running parameters: door position pulse, OD/CD arrival signal (OD pulse arrival, OD torque arrival, CD pulse arrival, CD torque arrival), setting frequency, output frequency, output voltage, output current, output torque, DC bus voltage and input terminal state.

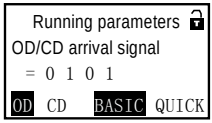


Figure 3-24 YS-P03 display at running state

Remarks:

Door position pulse: To display the present door position. The maximum pulse of door is corresponding to OD arrival position, while the minimum pulse of door is corresponding to CD arrival position.

OD/CD arrival signal: Shown as Figure 3-24 whose value represents OD pulse arrival, CD pulse arrival, OD torque arrival and CD torque arrival from right to left shown as Figure 3-25. “1” means the signal arrival, while “0” means no signal arrival.

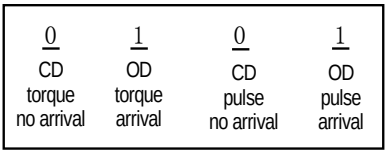


Figure 3-25 Description of OD/CD arrival signal

Input terminal state: If display the input terminal state, the corresponding relationship between the six value and the present input terminal state of X4~X1,CD,OD is shown as Figure 3-26.

“0”: The corresponding terminal and the common terminal are disconnected;

“1”: The corresponding terminal and the common terminal are connected.

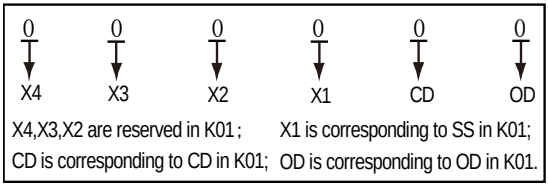


Figure 3-26 Description of input terminal state

Display parameter at editing state

At stop, run or fault alarm state, press PRG to enter function parameter editing state.

The panel uses third-level menu configuration for parameter setting or other operations. In turn: function parameter group setting (first-level menu)→function parameter setting (second-level menu)→parameter setting (third-level menu). Which is shown in Figure 3-27 and the description of the keys is shown in Table 3-7.

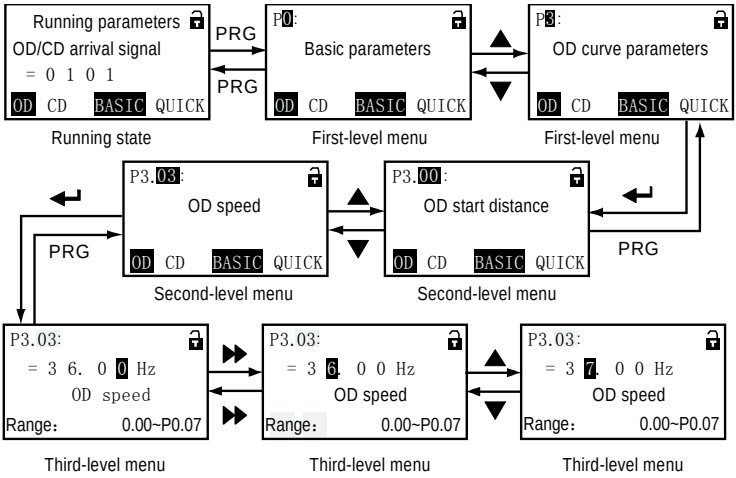


Figure 3-27 YS-P03 display at editing state

In the setting third-level menu situation, if the parameter is not in anti-color displaying, it indicates that this parameter can't be modified. The possible reasons are as follows:

- The function parameter can't be modified, such as the actual detected parameters or recorded parameters etc.
- Only when the drive stops can it modify the function parameter.
- Only input the correct password can it edit the function parameter due to the valid password.

Display faulty state

If the controller is faulty, the panel will be flashing to display the fault code. After troubleshooting, press STOP key to reset and the panel restores to stop state. Refer to Chapter 6.

3.3.2 Encryption/Unlock User Password with YS-P03

When user set P0.00 to non-zero value and press ↵ key to save the present value and return to P0.01. Then the user's password will be valid. The lock identification of panel will be 🔒 .

Unlock user's password

The operation of unlock user's password is as shown in Figure 3-28 which takes 0005 as the user's password. The lock identification will be 🔓 when it successfully unlocks.

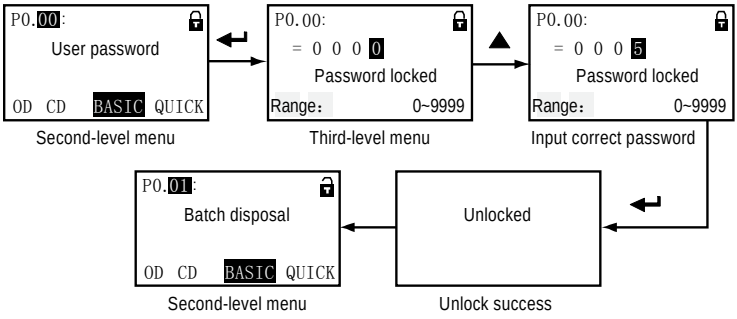


Figure 3-28 Operation of unlocking user's password

Modify user's password

If no password, directly modify the value of P0.00 according to Figure 3-29. If there is password, you should unlock the password according to Figure 3-28. When the lock successfully displays the 🔓, you can set a new password according to Figure 3-29 which takes "0305" as the new password. When the password is valid, the lock identification will be 🔒.

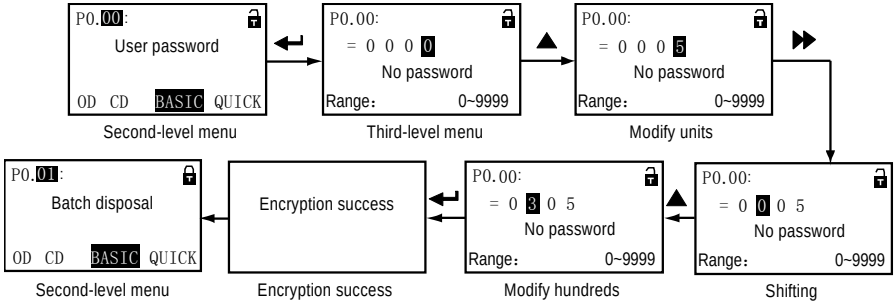


Figure 3-29 Operation of modifying user's password

Clear user's password

If there is password, you should unlock according to Figure 3-28. When it successfully displays "P0.01", you can clear the user's password according to Figure 3-30.

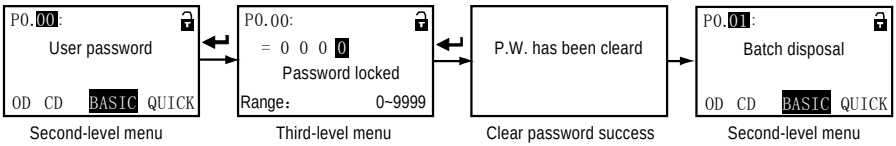


Figure 3-30 Operation of clearing user's password

3.3.3 YS-P03 Panel Self-testing

The panel of the controller has self-testing function which facilitates periodic inspection for itself and the keys.

The process of panel self-testing:

1. In stopping state, press ▶▶ key and ↵ key simultaneously for 2—3 seconds, the panel will check the LCD whether works well which is as shown in Figure 3-31.

Figure 3-31 Starting panel self-testing

2. Press any key of the panel and if the state is in anti-color display, it means the key is valid. And the correct correspondence is as shown in Figure 3-32.

During this process, if there is no press in 4—5 seconds, it will directly jump to the step 4. If the self-testing is success, it will jump to the step 3.

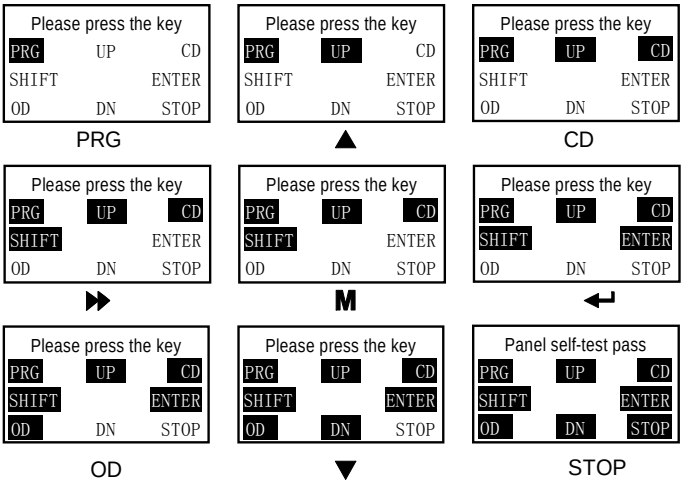


Figure 3-32 Correct correspondence of the keys and the displays

3. If all keys are valid, the panel will display "Panel self-test pass". The "Panel self-test pass" will auto-disappear within 3—5 seconds and back to display state before self-testing.

4. If the key is invalid, the correspondence display will not be in anti-color displaying. The panel will display "Panel self-test fail". The "Panel self-test fail" will auto-disappear within 3—5 seconds and back to display state before self-testing.

The possible reasons of self-testing failure: no press within 5 seconds or invalid key.

3.3.4 Reset Parameter and Clear Fault Information of YS-P03

Reset default parameters (synchronous motor parameters)

After set P0.01=3, except the fault parameter value, the parameter value of P0.00－P8.14 will be reset to the default parameter. At reset default parameter, the panel displays as Figure 3-33.

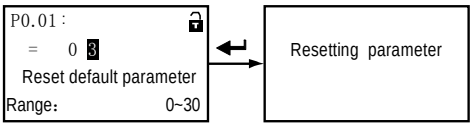


Figure 3-33 Reset default parameter

Reset 70W asynchronous motor parameters

After set P0.01=11, except the fault parameter value, the parameter value of P0.00－P8.14 will be reset to the default parameter. At reset default parameter, the panel displays as Figure 3-34.

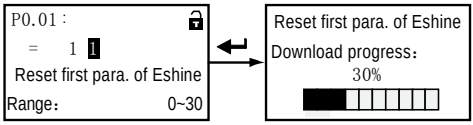


Figure 3-34 Reset 70W asynchronous motor parameter

Reset 80W asynchronous motor parameters

After set P0.01=12, except the fault parameter value, the parameter value of P0.00－P8.14 will be reset to the default parameter. At reset default parameter, the panel displays as Figure 3-35.

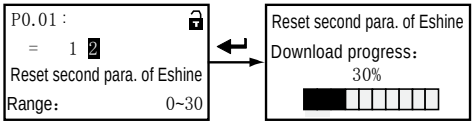


Figure 3-35 Reset 80W asynchronous motor parameter

Reset 150W asynchronous motor parameters

After set P0.01=13, except the fault parameter value, the parameter value of P0.00－P8.14 will be reset to the default parameter. At reset default parameter, the panel displays as Figure 3-36.

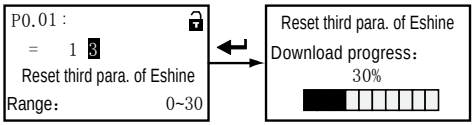


Figure 3-36 Reset 150W asynchronous motor parameter

Clear fault information

After set P0.01=4, the fault information of P9.00－P9.06 will be cleared which will be reset to the default parameter. At clear fault information, the panel displays as Figure 3-37.

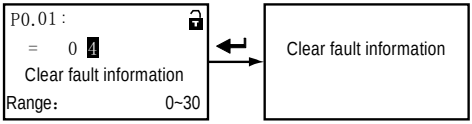


Figure 3-37 Clear fault information

3.4 Upload and Download Parameters

The controller design has control curve parameter storage and batch upload and download function to meet the requirement of high-efficient elevator debugging and maintenance.

For the same door width and type door machine can use the same curve parameter to achieve door control. Upload the experience curve parameter from the controller of debugging good results to the panel. Then download from the panel to the same door width and type door machine to achieve good door control, which is shown as Figure 3-38.

Example: door 1 and door 2 have the same door width and door mechanical configuration type. After debugging door 1 operation curve, upload the curve parameter from controller 1 to the panel corresponding position and compile group number. Then download the curve parameter from the panel corresponding group number position to the controller 2 to achieve well control of door 2. It can batch copy to the same controller (3—n) in the same way. If the operation test is normal it can be packed from factory. Parameter batch upload and download function can improve the efficiency of producing and maintaining.

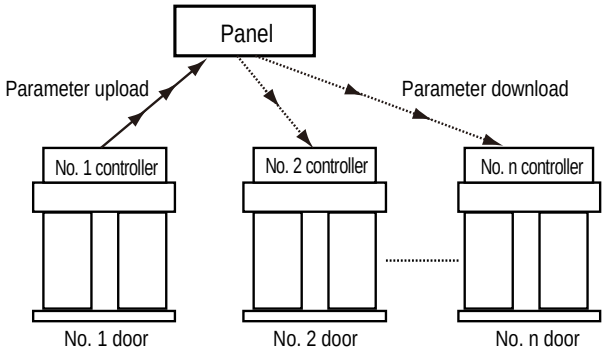


Figure 3-38 Batch disposal of parameters upload and download

The panel has 12 parameter macro spaces. You can upload the parameter from controller to one of the 12 macro spaces or download the supported experience parameter from 12 macro spaces to the target controller to simple the parameter setting at debugging, which is shown as Figure 3-39.

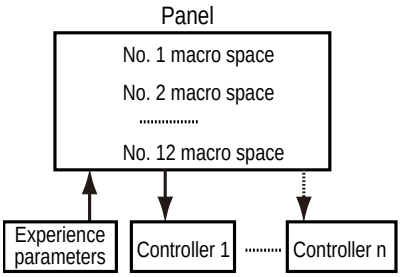


Figure 3-39 Panel macro spaces

3.4.1 Upload and Download Parameters with YS-P01

Upload parameter

For example: upload the present controller parameters to the panel group 8, shown as Figure 3-40. When the parameters are completely uploaded, it will enter stop state.

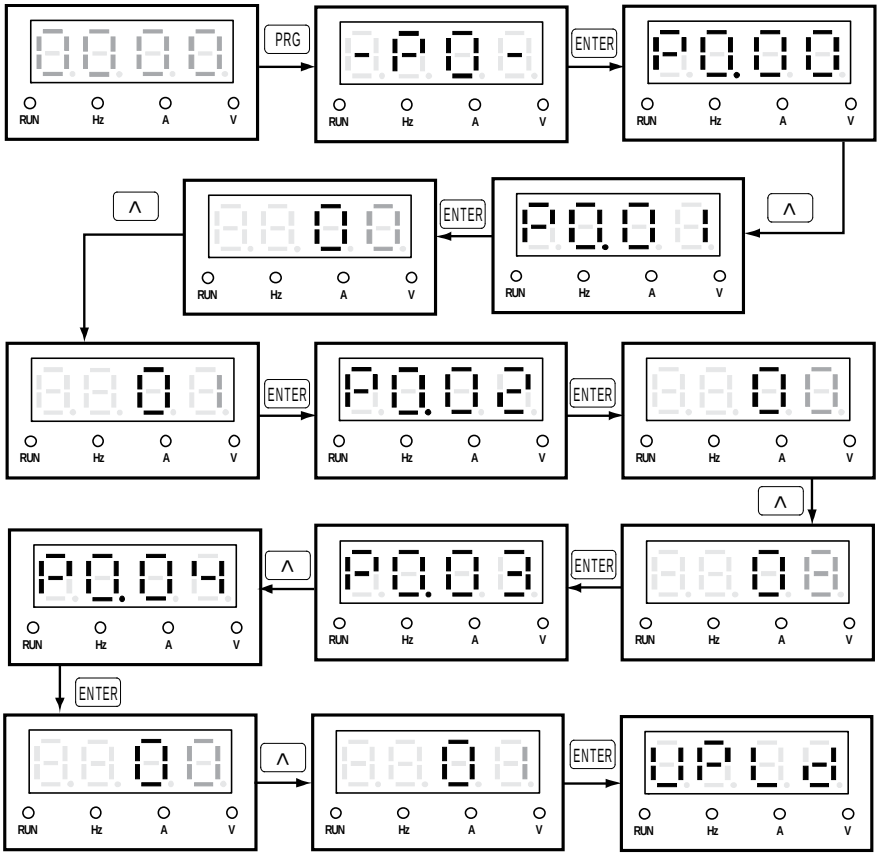


Figure 3-40 YS-P01 parameters upload

Download parameter

For example: download panel group 7 parameters to the present controller, shown as Figure 3-41. When the parameters are completely downloaded, it will enter stop state.

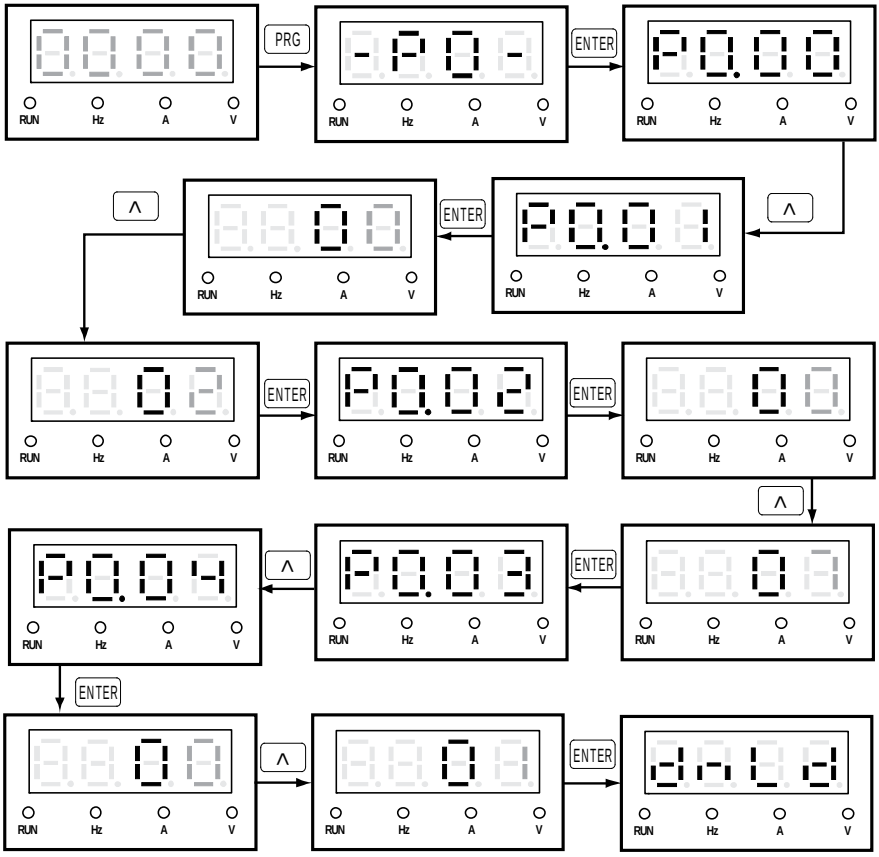


Figure 3-41 YS-P01 parameters download

3.4.2 Upload and Download Parameters with YS-P02

Upload parameter

For example: upload the present controller parameters to the panel group 8, shown as Figure 3-42. When the parameters are completely uploaded, it will enter stop state.

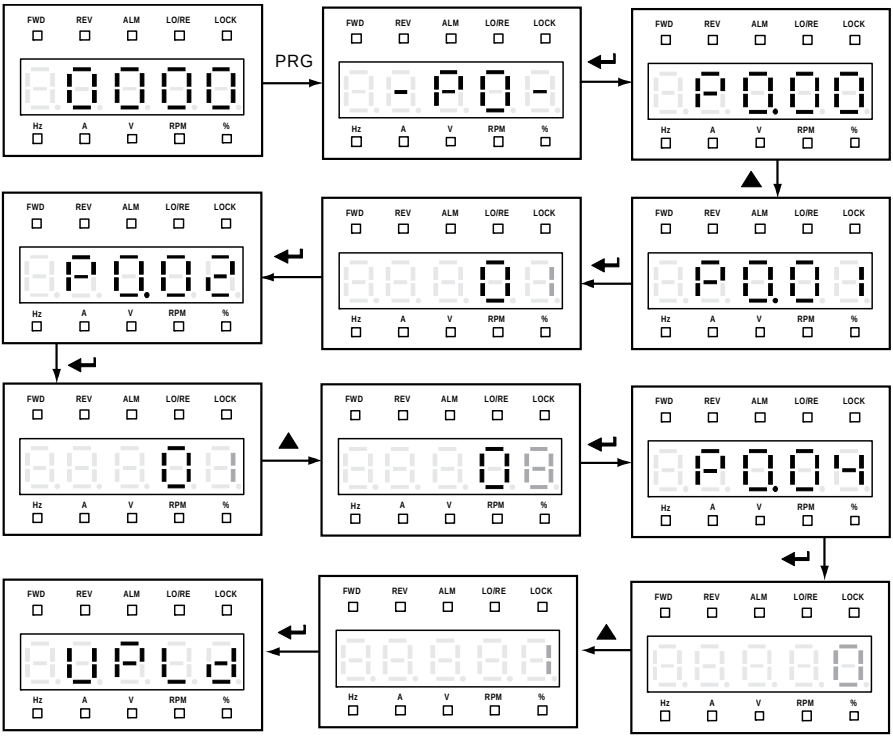


Figure 3-42 YS-P02 parameters upload

Download parameter

For example: download panel group 7 (there are parameters) parameters to the present controller, shown as Figure 3-43. When the parameters are completely downloaded, it will enter stop state.

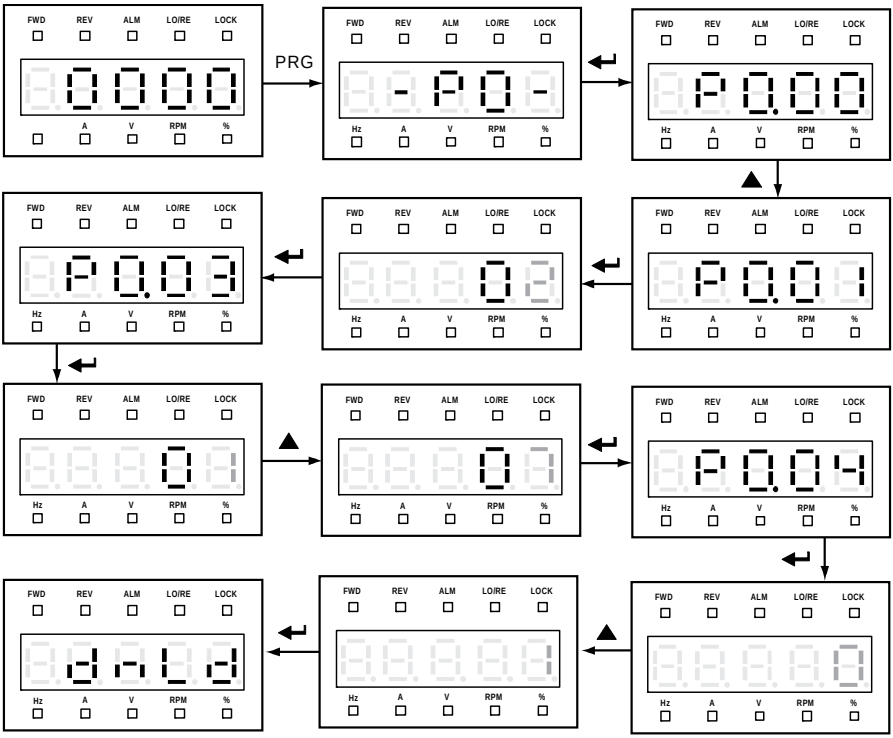


Figure 3-43 YS-P02 parameters download

3.4.3 Upload and Download Parameters with YS-P03

Upload parameter

For example: upload the present controller parameters to the panel group 8, shown as Figure 3-44. When the parameters are completely uploaded, it will enter stop state.

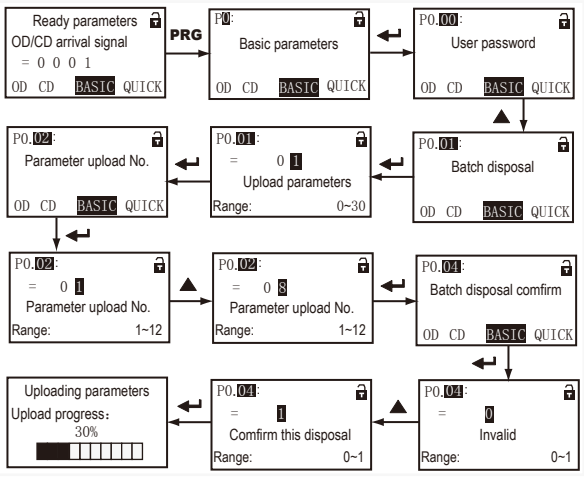


Figure 3-44 YS-P03 parameters upload

Download parameter

1. For example: download panel group 7 (there are parameters) parameters to the present controller, shown as Figure 3-45. When the parameters are completely downloaded, it will enter stop state.

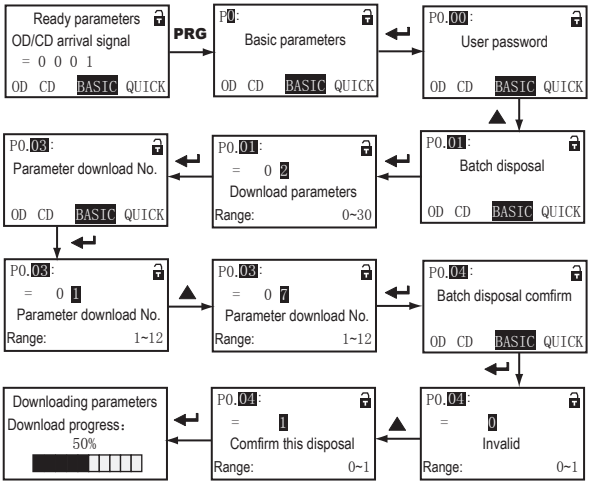


Figure 3-45 YS-P03 parameters download

2. If download panel group 3 (there is not parameter) parameters to the present controller and then prompts download failure shown as Figure 3-46, it will enter stop state.

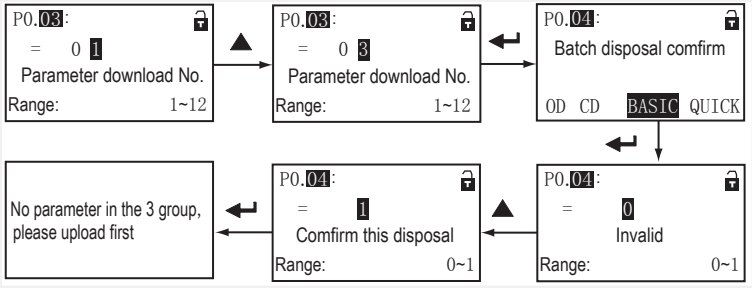


Figure 3-46 YS-P03 without parameters download

3. If the group 8 of panel has saved the parameters of YS-K32 controller, this parameters can't be downloaded to the YS-K01 controller, shown as Figure 3-47 for the download failure then enter stop state.

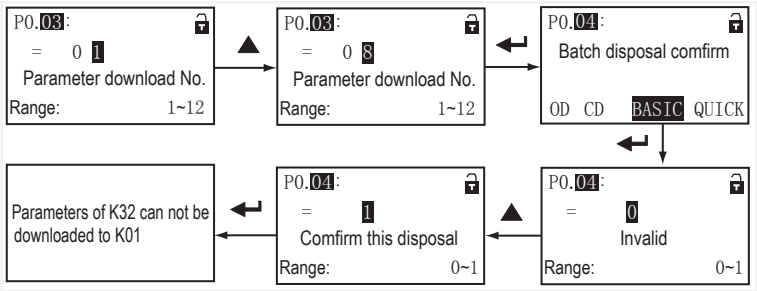


Figure 3-47 YS-P03 does not download between different controllers

Note:

1. Only at stopping state can upload or download parameters. The uploaded/downloaded parameters range is: All the parameters from P0.05 to P8.14 (except P1.09 and P2.01).

2. The panel's parameters are the controller's default parameters if without uploading ever.

Chapter 4 Function Introduction

This chapter will provide user with detail function introduction of each group. And the factory setting value is the default value of synchronous KS motor.

4.1 Group P0 Basic Parameters

Code	Name Description	Range【factory setting】
P0.00	**User password**	**0000—9999【0】**
	XXXX: To enable the password protection function, set any non-zero number as the password. • After set the password, it need input the correct password when you enter into parameter setting state. Otherwise you can not change any parameter via panel, but only check. • After input the correct password, press ↵ key to save to the present value and return to P0.01, the user's password will be valid. If want to change the parameters, it need input correct password. If detect that there is press within 5minutes, it will restart 5 minutes timing again. 0000: The factory setting of controller and no user's password. • If the user unlocks the password, it means clearing the user's password.	
P0.01	**Parameter batch disposal selection**	**00—30【00】**
	00: No function. It need manually set the parameter. 01: Upload parameters. 02: Download parameters. 03: Reset default parameter, synchronous motor parameters. 04: Clear fault information. 05－10: Reserved. 11: Reset the first group parameters of Eshine (reset 70W asynchronous motor parameters). 12: Reset the second group parameters of Eshine (reset 80W asynchronous motor parameters). 13: Reset the third group parameters of Eshine (reset 150W asynchronous motor parameters). 14－30: Reserved.	
P0.02	**Parameter upload number**	**1—12【1】**
	Select the parameter upload number.	
P0.03	**Parameter download number**	**1—12【1】**
	Select the parameter download number.	
P0.04	**Parameter batch disposal comfirm**	**0,1【0】**
	0: No function. 1: Press ↵ key to comfirm the batch disposal. This parameter (P0.04) will restore to zero when the parameter batch disposal is finished.	
P0.05	**Mode selection**	**0,1【1】**
	0: Factory mode (Door machine specific function is invalid). 1: Door control mode.	
P0.06	**Control command selection**	**0—2【0】**
	0: Panel control (manually). • The starting and stopping is controlled through the panel. Press OD key opens the elevator door, press CD key closes the elevator door, and press the STOP key stops controller. 1: Terminal control (auto). • The controller realizes door opening or closing via the control system sending OD and CD commands.	

Code	Name Description	Range【factory setting】
	2: Auto-demo run. • Auto-demo mode is used for demonstrating the operation or commissioning in the factory. There is no need to be controlled by the control system. The auto-demo mode can be set after door machine's operation curve is set. The interval time between open and closed door demo can be set by P6.04. • To start auto-demo run by pressing OD / CD key or closing external terminals OD / CD with COM. • To stop auto-demo run by pressing STOP key.	
P0.07	**Maximum output frequency**	**1.00—99.99【24.00Hz】**
	Define the maximum allowed output frequency of controller.	
P0.08	**Advanced password**	**0000—9999【0000】**
	After input the advanced password, you can check the advanced parameters. In generally, it need not check the advanced parameters. But if needed, you can contact the manufacture to get the advanced password.	
P0.09	**Control mode**	**0—2【2】**
	0: Asynchoronous motor open-loop distance control. 1: Asynchoronous motor closed-loop distance control. 2: Synchoronous motor closed-loop distance control.	

4.2 Group P1 Motor Rated Parameters

Code	Name Description	Range【factory setting】
P1.00	**Motor rated power**	**1—750W【250W】**
P1.01	**Motor rated voltage**	**1—300V【220V】**
P1.02	**Motor rated current**	**0.10—10.00A【1.10A】**
P1.03	**Motor rated frequency**	**1.00—P0.07【24.00Hz】**
P1.04	**Motor rated Rpm**	**1—6000rpm【180rpm】**
	Correctly set the parameters according to the rated parameters of motor nameplate. • To ensure the control performance, the motor power should match that of the controller. • For asynchronous motor, the setting value of P1.01 should be the asynchronous rated voltage of motor nameplate. • For synchronous motor, the setting value of P1.01 should be the inverter rated voltage, which is 220V. Do not set the value of P1.01 as the synchronous motor's nameplate rated voltage, otherwise the motor will not run normally.	
P1.05	**Deceleration ratio**	**1.00—9.99【1.00】**
	For the KS door machine, this value is 1.00. For the MS door machine it need input the correct value according to the actual situation. For the small shaft 25mm diameter, it need input 5.60; For the big shaft 30mm diameter, it need input 4.67. Generally if the open door width does not exceed 1950mm, it will be called as small shaft.	
P1.06	**Motor parameter auto-tuning**	**0,1【0】**
	0: No action. 1: Motor auto-tuning. • Before auto-tuning, it must input correct motor parameters as per its nameplate. • When set P1.06 as 1, it starts motor parameter auto-tuning. When it is completed, P1.06 will auto become to zero.	

Code	Name Description	Range【factory setting】
	• Make sure P0.06 = 0 firstly, then press OD or CD key to start auto-tuning. And press STOP key to stop motor parameter auto-tuning. • Refer to section 5.1 Parameter Auto-tuning Description for more details.	
P1.07	**No load current**	**0.01—10.00【0.38A】**
	This parameter is invalid for the KS door machine. Only enabled for MS door machine: the no load current is 0.40A for the 70W asynchronous motor; 0.50A for the 80W asynchronous motor; 0.60A for the 150W asynchronous motor.	
P1.08	**Reserved**	
P1.09	**Magnetic pole position angle**	**0.0—359.9【0.0°】**
	After the synchronous motor auto-tuning, the motor magnetic pole position angle will be auto written into P1.09. This parameter is invalid for the MS door machine.	

4.3 Group P2 Encoder Door Width Parameters

Code	Name Description	Range【factory setting】
P2.00	**Encoder pulse number per revolution**	**0—9999【1024】**
P2.01	**Encoder direction setting**	**0,1【0】**
	0: The same direction as the encoder actual connection. 1: The reverse direction to the encoder actual connection.	
P2.02	**Operating speed of slow speed**	**0.01—15.00 Hz【7.00Hz】**
	When external terminal slow speed (SS) is enabled, the door machine will operate at this speed.	
P2.03	**Operating speed at first time power on**	**0.01—15.00 Hz【4.00Hz】**
	It defines the door machhine operating speed at first time power on.	
P2.04	**Door width self-learning speed**	**0.01—15.00 Hz【4.00Hz】**
	It defines the operating speed in door width self-learning process. In order to reduce the door width error, this parameter must not be too big so as to avoid the shock when the door is in open/closed door arrived state.	
P2.05	**Door width self-learning enable**	**0,1【0】**
	0: Disabled. 1: Door width self-learning is enabled. • In door control mode P0.05=1, firstly set P0.06 as 0 or 2, then set P2.05 as 1 to start the door width self-learning, finally P2.05 will becomes zero when it finishes self-learning. (press OD or CD key to start self-learning, press STOP key to stop self-learning) Door width self-learning proccess: After start self-learning, the door machine will run at self-learning speed according to “open door → closed door → open door →closed door”. The door width information will be auto saved when finished the self-learning.	
P2.06	**Low digits of pulse count**	**0—9999【3700】**
	The parameter saves the four low digits of pulse count obtained by door width self-learning (max: four digits).	
P2.07	**High digits of pulse count**	**0—9999【0】**
	The parameter saves the high digits of pulse count obtained by door width self-learning (min: four digits). • Door width calculating method: Door width= P2.07 × 10000+P2.06. • The pulse number of door width obtained by auto-learning can be changed via the panel.	

4.4 Group P3 OD Curve Parameters

Refer to section 5.3.1 for the OD curve optimal.

Code	Name Description	Range【factory setting】
P3.00	**OD start distance**	**0—9999【240】**
P3.01	**OD start speed**	**0.00—15.00 Hz【2.50Hz】**
	When the door is in the OD start distance, the door machine will run at the OD start speed.	
P3.02	**OD acceleration (Acc) time**	**0.1—99.9s【0.8s】**
	OD Acc time is the time accelerated from zero frequency to the maximum frequency.	
P3.03	**OD speed**	**0.00—P0.07【20.00Hz】**
	It defines the high operating speed (frequency) during OD process.	
P3.04	**OD deceleration (Dec) point position**	**50.0—90.0 door width 【72.0%】**
	When the pulse number ≥P3.04×door width, the door machine will decelerate from P3.03 (OD speed) to P3.06 (Creeping speed at OD ending). The bigger P3.04 is set, the shorter Dec distance is.	
P3.05	**OD Dec time**	**0.1—99.9【1.0s】**
	OD Dec time is the time decelerated from maximum frequency (P0.07) to zero frequency.	
P3.06	**Creeping speed at OD ending**	**0.00—15.00【2.00Hz】**
	It defines the low creeping speed (frequency) of door machine during OD process.	
P3.07	**OD limit point**	**80.0—99.9 door width 【90.0%】**
	When door position pulse ＞P3.07×door width, the door machine will output OD arrival signal.	
P3.08	**Re-open curve high-speed area**	**10.0—90.0 door width 【70.0%】**
	P3.08 defines the re-open curve high-speed area at re-opening. • This parameter setting may improve the re-open efficiency. **Example:** P3.08 = 70.0%, which represents when the door position is in 0—30% range (100%-70%), it will auto accelerate to high speed at re-open; when the door position is in 30—100% range, it will auto-calculate out the run curve according to the present position at re-open.	

4.5 Group P4 CD Curve Parameters

Refer to section 5.3.2 for the CD curve optimal.

Code	Name Description	Range【factory setting】
P4.00	**CD start distance**	**0—9999【0】**
P4.01	**CD start speed**	**0.00—15.00 Hz【3.00Hz】**
	When the door position pulse and the OD arrival position are in the CD start distance, the door machine will run at the CD start speed.	
P4.02	**CD Acc time**	**0.1—99.9s【1.0s】**
	CD Acc time is the time accelerated from zero frequency to the maximum frequency.	
P4.03	**CD speed**	**0.00—P0.07【18.00Hz】**
	It defines the high operating speed (frequency) during CD process.	
P4.04	**CD Dec point position**	**50.0—90.0%【68.0%】**
	When the pulse number ≥P4.04×door width, the door machine will decelerate from P4.03 (CD speed) to P4.06 (creeping speed at CD ending). • The bigger P4.04 is set, the shorter Dec distance is.	
P4.05	**CD Dec time**	**0.1—99.9s【1.1s】**
	CD Dec time is the time decelerated from maximum frequency to zero frequency.	
P4.06	**Creeping speed at CD ending**	**0.00—15.00 Hz【1.50Hz】**
	It defines the low creeping speed (frequency) of door machine during CD process.	
P4.07	**Door blade acting position at CD ending**	**1—210【160】**
	When pulse number≤P4.07 setting number, the door machine will carry out CD ending and door blade action.	
P4.08	**Door blade acting speed at CD ending**	**0.00—15.00 Hz【3.00Hz】**
	Defines the run speed (frequency) of door blade action position in P4.07 range during the CD process.	
P4.09	**CD limit point**	**10—200【200】**
	When the door position is in the CD limit point position, the door machine will output CD arrival signal.	

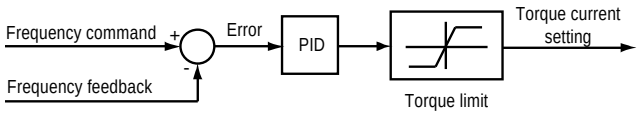
4.6 Group P5 Torque Parameters

Code	Name Description	Range【factory setting】
P5.00	**OD switching torque**	**20.0—150.0%【80.0%】**
	In OD process, if the running pulse count reaches the product of P3.07×door width, the door machine will continue to run at low speed in the ending phase of OD. When the door has reached the limited position, the motor will be caught. When the motor catching torque≥the product of P5.00×motor's rated torque, the door will be in complete OD state and maintaining the current torque till the door reversely opens or stops.	
P5.01	**OD holding torque**	**30.0—150.0%【75.0%】**
	When the motor is in OD operating process, the OD position limiting function will be enabled. When the torque of catching spinning motor≥P5.00×motor rated torque, the door machine will maintain in complete OD state with the holding torque (P5.01×motor rated torque).	
P5.02	**OD end torque**	**0.0—100.0%【70.0%】**
	It define the holding torque of the door machine system after the switching time (P5.03).	
P5.03	**Switching time from OD holding to OD end torque**	**0.1—999.9【60.0s】**
	Define the torque holding state in OD process. (the internal has slope)	
P5.04	**CD switching torque**	**20.0—150.0%【75.0%】**
	In CD process, if the control pulse count reaches the product of P4.07×door width, the door machine will continue to run at low speed in the ending phase of CD. When the door has reached the limited position, the motor will be caught. When the motor catching torque≥the product of P5.04×motor's rated torque, the door will be in complete CD state and maintaining the current torque till the door reversely opens or stops.	
P5.05	**CD holding torque**	**30.0—150.0%【70.0%】**
	When the motor is in CD operating process, the CD position limiting function will be enabled. When the torque of catching spinning motor≥P5.04×motor rated torque, the door machine will maintain in complete CD state with the holding torque (P5.05×motor rated torque).	
P5.06	**CD end torque**	**0.0—100.0%【60.0%】**
	It define the holding torque of the door machine system after the switching time (P5.07).	
P5.07	**Time from CD holding to CD end torque**	**0.1—999.9【60.0s】**
	Define the torque holding state in CD process. (the internal has slope)	
P5.08	**Passenger protection torque**	**0.0—150.0%【70.0%】**
P5.09	**Passenger protection invalidation area**	**0.0—150.0%【1.0%】**
	These two function define the CD passenger protection torque and the detected range. For the following situation, it does not detect the CD obstruction: • In the CD running process, if the door position is in the P5.09 range, the CD obstruction wil not be detected. • The CD enter torque holding state so that the CD obstruction will not be detected. • The CD passenger protection torque is set as zero so that the CD obstruction will not be detected.	
P5.10	**Torque setting under slow speed**	**30.0—150.0%【100.0%】**
	Define the judgment of door width self-learning and torque switching value at first time powe-on. This value is relative to the percentage of motor rated torque.	
P5.11	**OD resistance torque**	**0.0—150.0%【100.0%】**
	The no detected range of OD resistance is: the door machine arrives to the OD torque holding state.	
P5.12	**OD resistance time**	**0.1—9.9【3.0s】**
	At OD resistance, it will respond the OD signal until after the OD resistance time.	

4.7 Group P6 Advanced Parameters

Code	Name Description	Range【factory setting】
P6.00	**PC1, PC2, DPA output selection**	**0,1【1】**
	0: The signal is open which represents the OD/CD arrival and door position output (equal to the relay normally open contact). 1: The signal is closed which represents the OD/CD arrival and door position output (equal to the relay normally closed contact).	
P6.01	**DPA function selection**	**0,1【0】**
	0: Door position output. 1: The re-open signal is output at the CD resistance.	
P6.02	**Door position output setting**	**0.1—99.9【90.0%】**
	When the door position is excess to this function setting value, the door position output signal (DPA) is enabled. • Only when set P6.01 as 0 (door position output) can this function be enabled.	
P6.03	**Dec time of open & close resistance**	**0.1—2.0【0.5s】**
	This function parameter define the Dec time from the present CD speed decelerating to zero speed when the CD resistance occurs. • If the setting is too small, it will result in door seriously shaking when decelerates; If the setting is too big, it will result in too slow decelerating speed.	
P6.04	**Open & close holding time on demo mode**	**0.1—360.0【3.0s】**
	Defines the holding time of OD or CD arrival on the demo mode (P0.06 = 2).	
P6.05	**Mode selection on open & close invalidation**	**0—2【2】**
	0: Holding the torque at the OD&CD arrival range, but zero-speed running at other position. 1: Stop running. 2: Only holding the torque at the OD&CD arrival range.	
P6.06	**Torque setting on open&close invalidation**	**0.0—150.0%【100.0%】**
	When set P6.05 as 0, the special torque will be output to prevent the door from moving.	

4.8 Group P7 Vector Control Parameters

Code	Name Description	Range【factory setting】
P7.00	**High speed ASR KP**	**10—3000【350】**
P7.01	**High speed ASR KI**	**1—1000【200】**
P7.02	**Low speed ASR KP**	**10—3000【350】**
P7.03	**Low speed ASR KI**	**1—1000【200】**
P7.04	**ASR switching frequency**	**0.00—P0.07【8.00Hz】**
	The parameters of P7.00—P7.04 comfirm the PID parameters of ASR. The structure of ASR is shown in figure.  • The system's response can be expedited through increasing the proportional gain P, but oscillation may occur if the value of P is too high.	

Code	Name Description	Range【factory setting】
	• The system's response can be expedited through increasing the integral time constant Ti, but oscillation and high overshoot happen easily if the value of Ti is too high. • If set Ti as 0 and the integral function is disabled, the speed-loop works only as a proportional regulator. • Generally, the P should be adjusted firstly to the maximum on condition that the system does not vibrate, and then the Ti should be adjusted to shorten the response time without overshoot. • It need increase P and decrease Ti, on condition that shorter dynamic response time is required during low frequency operation.	
P7.05	**Current loop KP**	**10—9999【50】**
P7.06	**Current loop KI**	**0—9999【100】**
	P7.05 and P7.06 define the PI regulator parameters of current loop. • It can expedite the system's response to the output torque through increasing the KP or KI of current loop; and improve the system's stability through decreasing KP or KI. • If KP or KI of current loop is too big, the system is easy to occur oscillation; if KP or KI is too small, the system's output torque capacity will be influenced. **Note: For most places, it does not need to adjust the PI parameters of current loop and users are advised to carefully change this parameters.**	
P7.07	**Torque limit**	**0.0—200.0【120.0%】**
	Defines the limit torque current of controller output. The setting value is relative to the percentage of motor rated current (P1.02).	
P7.08	**Speed filter time constant**	**0—7【2】**
	It is used to filter the output of ASR regulator. • When P7.08 = 0, the speed-loop filter is disabled.	

4.9 Group P8 Motor Auto-tune Parameters

Code	Name Description	Range【factory setting】
P8.00	**Stator resistance**	**0.00—99.99Ω【depend on model】**
P8.01	**Rotor resistance**	**0.00—99.99Ω【depend on model】**
P8.02	**Stator inductance**	**0—9999mH【depend on model】**
P8.03	**Rotor inductance**	**0—9999mH【depend on model】**
P8.04	**Mutual inductance**	**0—9999mH【depend on model】**
P8.05	**Slip compensation gain**	**50.0—200.0【100.0%】**
	P8.05 is used in calculating slip frequency. The setting 100.0% means rated slip frequency corresponds to rated torque current. The user may set the value of P8.05 to adjust the speed control's difference accurately.	
P8.06	**Curve selection**	**0,1【0】**
	0: Line. 1: S curve.	
P8.07	**LCD contrast**	**1—10【0】**
	To select LCD display contrast.	

Code	Name Description	Range【factory setting】
P8.08	**LCD screen color**	**0,1【0】**
	0: White background (normal). 1: Black background (anti).	
P8.09	**LCD language**	**0,1【0】**
	0: Chinese. 1: English.	
P8.10	**Reset Eshine special parameters**	**00—99【00】**
	00: Invalid. 01: Reset the controller KS800 parameters. 02: Reset the controller KS900 parameters. 03: Reset the controller MS800 parameters. 04: Reset the controller MS900 parameters. 05: Reset the controller PL1100 parameters. 06: Reset the controller PL1200 parameters. 07－10: Reserved. 11: Reset the panel KS800 parameters. 12: Reset the panel KS900 parameters. 13: Reset the panel MS800 parameters. 14: Reset the panel MS900 parameters. 15: Reset the panel PL1100 parameters. 16: Reset the panel PL1200 parameters. 17－99: Reserved.	
P8.11	**CD door blade closed speed**	**0.00—2.00Hz【0.00Hz】**
	It defines the door machine running speed (frequency) when the door blade acting position is in the P8.12 setting range during CD process.	
P8.12	**CD door blade closed speed position**	**0—80【0】**
	When the pulse number does not exceed the pulse nuber set by P8.12, the door machine will run at the speed set by P8.11.	
P8.13	**Reserved**	
P8.14	**Synchronous motor initial start mode selection**	**0—2【1】**
	0: Pulse location. 1: Current location. 2: Reserved.	

4.10 Group P9 Diagnostics Parameters

Code	Name Description	Range【factory setting】
P9.00	**NO.3 fault type (last fault)**	**【actual value】**
P9.01	**NO.2 fault type**	
P9.02	**NO.1 fault type**	
P9.03	**DC bus voltage for last fault**	
P9.04	**Output current for last fault**	
P9.05	**Running frequency for last fault**	
P9.06	**Door position for last fault**	
P9.07	**Open-close cycle lower value**	
P9.08	**Open-close cycle upper value**	
P9.09	**Running hour**	
P9.10	**Running day**	
P9.11	**Heatsink temperature**	
P9.12	**Controller software version**	
P9.13	**Panel software version**	
	0: Normal. 1: Controller overvoltage (E001). 2: Controller hardware overcurrent (E002). 3: Controller software overcurrent (E003). 4: Loss of Z phase signal of permanent magnet synchronous motor encoder (E004). 5: Machine type mismatch (E005). 6: Motor parameter auto-tuning fault (E006). 7: Controller overloaded (E007). 8: Heatsink overheated (E008). 9,10: Reserved. 11: Panel EEPROM faulty (E011). 12: Reserved. 13: Communication fault between the panel and the controller (E013). 14: Controller EEPROM faulty (E014). 15,16: Reserved. 17: Module faulty (E017). 18: Current detect faulty (E018). 19－22: Reserved. 23: Encoder error (E023). 24,25: Reserved. 26: Door width self-learning failure (E026). -Lu-: Undervoltage.	

Chapter 5 Controller Debugging

5.1 Motor Parameter Auto-tuning (Ensured P0.06=0)

The controller uses the high performance vector control technology to control the door motor to run. It need do the motor parameter auto-tuning before operating the motor to obtain correct motor parameters, therefore achieve good control effect.

For the asynchronous motor, after the auto-tuning it will get the no load current. Firstly it should unload the belt and the load, then input the motor nameplate into P1.00 (motor rated power), P1.01 (motor rated voltage), P1.02 (motor rated current), P1.03 (motor rated frequency), P1.04 (motor rated rpm) and P1.05 (Dec ratio), finally set P1.06 (motor parameter auto-tuning) as 1 (make sure P0.06=0) and press OD key or CD key to start parameter auto-tuning. Observe the rotation direction of motor shaft. If rotate toward the CD direction and after finish the auto-tuning, you should change any two phases of the connections between controller and motor. The motor parameter auto-tuning is not needed again. The no load current will be stored to 1.07.

For the synchronous motor, after the auto-tuning it will get the magnetic pole position angle. Firstly it should unload the belt and the load. You can neglect the voltage value of motor nameplate because the motor voltage parameter means the inverter output voltage which normally is 220V, then input the motor nameplate into P1.00 (motor rated power), P1.02 (motor rated current), P1.03 (motor rated frequency), P1.04 (motor rated rpm) and P1.05 (Dec ratio). Finally set P1.06 (motor parameter auto-tuning) as 1 (make sure P0.06=0) and press OD key or CD key to start parameter auto-tuning. Observe the rotation direction of motor shaft. If rotate toward the CD direction, you should stop running and change any two phases of the connections between controller and motor, then restart motor parameter auto-tuning again. After finish the auto-tuning, the magnetic pole position angle will be stored to P1.09. Finally start motor auto-tuning again to compare the two results of P1.09. If the phase difference is smaller than 5°, it represents that the auto-tuning is successful and you can do other operations. Otherwise you should do parameter auto-tuning again to make sure the system run well until the phase difference of the two results is smaller than 5°.

Note:

1. For the asynchronous motor auto-tuning, it must unload the belt.
2. When synchronous motor does parameter auto-tuning without unloading the belt, you should manually move the door to the CD state. During the parameter auto-tuning process, the door should run toward the OD direction. When auto-tuning is over, the door will auto stop. If the door does not open and the encoder fault is alarmed, you should stop running and change any two phases of the connections between controller and motor, then restart parameter auto-tuning again.

5.2 Door Width Self-learning (Ensured P0.06=0)

The door width of door machine is the basis of distance control, open/closed door running curve adjustment and open/closed door arrived judgment. The door width accurately to be obtained is the guarantee which is the premise to realize the normal distance control. After finish the motor parameter auto-tuning, firstly input the door width self-learning speed (P2.04) and the torque setting under slow speed (P5.10) and set P2.05 as 1 (make sure P0.06=0), then start self-learning by pressing OD key or CD key. The self-learning process is a fixed cycle operation process with “open door- closed door- open door- closed door”. After the self-learning, the door width pulse number will be auto-stored into parameters P2.06 and P2.07.

In the self-learning process the normally running state is the “open door- closed door- open door- closed door”. And the pulse variation is that the door position counts increase in the OD process and decrease in the CD process. The countermeasures of abnormal problem of door width self-learning are as follows:

After the door width self-learning command is send, if the first running direction is CD, you should stop running and change any two phases of the connections between controller and motor and for the synchronous motor should be restarted the parameter auto-tuning too.

During self-learning process check the OD/CD pulse signal, if the OD pulse numbers decrease and CD pulse numbers increase, you should change the setting value of P2.01 (encoder direction) and for the synchronous motor should be restarted parameter auto-tuning too.

During self-learning process, if it alarms E026 faulty (door width self-learning failure), please check the encoder signal. For the heavy duty door, please properly increase the value of P5.10 (self-learning torque) to improve the self-learning torque.

5.3 OD/CD Curve Optimal

The well-run door effect is the passenger protection of premise good comfort. The different requirement between OD and CD is: The OD operation curve requirement of elevator is rapid and smooth while the CD operation curve requirement is quickly respond to the passenger protection.

5.3.1 OD Curve Optimal

A full itinerary OD curve has four stages: OD start, OD high-speed run, OD creep and OD holding. According to the Figure 5-1 we can set reasonable parameters to achieve the desired OD effect.

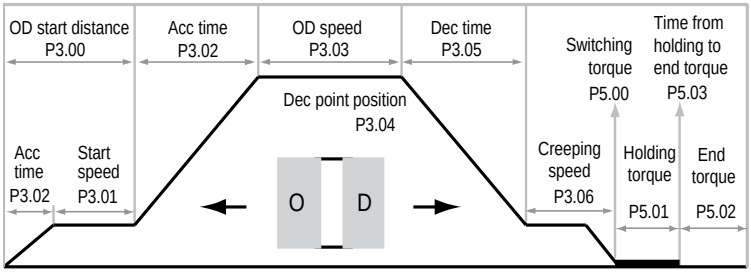


Figure 5-1 Relationship of OD curve and curve parameters

OD start: From closed state to the OD startup, the door blade needs action. You need use a lower speed (P3.01) to close the door blade in order not to damage it. After the startup state ends, it will accelerate to high-speed for OD.

If the controller receives OD command and the door position is exceeded the OD start distance (P3.00) and the door blade has closed at the moment, the open door process will be no longer from startup but directly accelerate from zero-speed to OD speed (P3.03). Just as Figure 5-2.

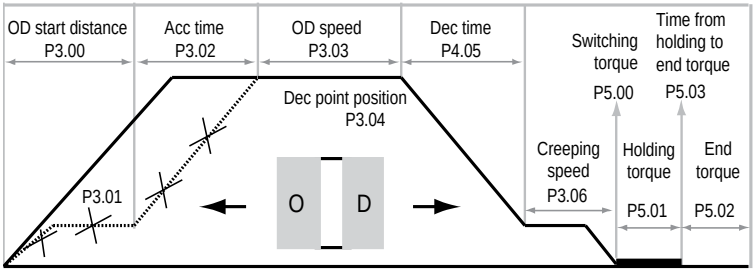


Figure 5-2 Optimum OD startup curve

OD high-speed run: After OD startup ends, OD will accelerate from start speed (P3.01) to OD speed (P3.04) The run speed will not decelerate to creeping speed (P3.06) until it runs to Dec point (P3.04).

OD creep: To prevent door and other mechanical equipment from collision damage caused by high-speed, before OD position arrives, door should slow down to creeping speed (P3.06).

OD holding: After door creeps through the OD limit point (P3.07), it will output the OD arrival signal. When door torque＞OD switching torque (P5.00), it will switch to OD torque holding state.

After some time the door is in the fully open state, then switch to a small torque holding state, which can save energy and prevent motor from heating to ensure that the door has certain open tension.

5.3.2 CD Curve Optimal

A full itinerary CD curve has five stages: CD start, CD high-speed run, CD creep, door blade action and CD holding. According to the Figure 5-3 we can set reasonable parameters to achieve the desired CD effect.

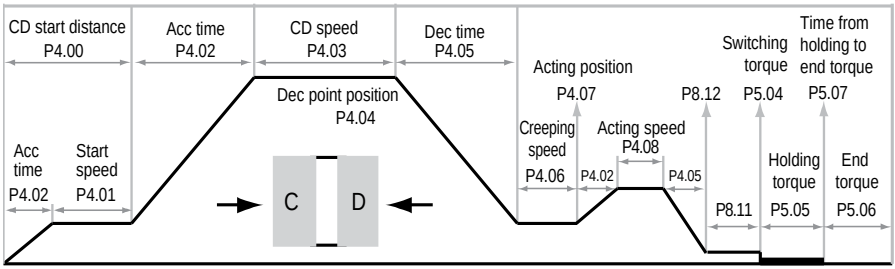


Figure 5-3 Relationship of CD curve and curve parameters

CD start: The CD starts to run at start speed (P4.01).

In order to improve the CD efficiency, generally cancel the startup state and directly accelerates to the CD speed (P4.03) to enter into high-speed run state. Just as Figure 5-4.

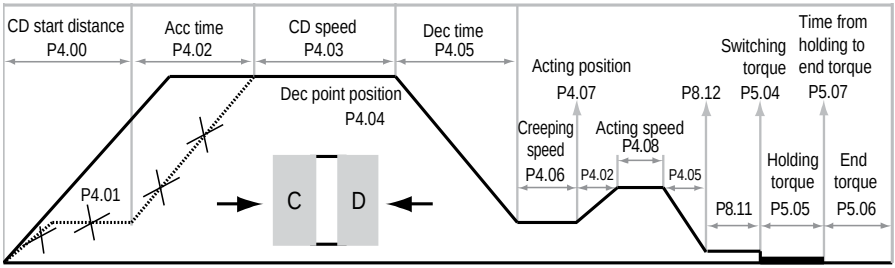


Figure 5-4 Optimum CD startup curve

CD high-speed run: After CD startup ends, CD will accelerate from CD start speed (P4.01) to CD speed (P4.03). The run speed will not decelerate to creeping speed (P4.06) until it run to Dec point (P4.04).

CD creep: Before CD position arrives, to prevent door board and door blade from collision damage caused by high speed, the door should slow down to creeping speed to run.

Door blade action: From CD process to two door boards close state, a short time relative higher than creeping speed (P4.08) is needed to achieve door blade action safe and reliable as soon as possible, while it can improve the CD efficiency.

At the door blade action end, to prevent door crash because of high-speed, you can set a relative low speed via P8.11 and this speed range in pulses of P8.12 is valid.

CD holding: After door creeps through the CD limit point (P4.09), it will output CD arrival signal. When CD torque＞switching torque (P5.04), it will switch to CD torque holding state.

After CD holds for some time, the door has been in the fully close state. Then switch to a small torque holding state, which can prevent motor from heating and save energy, therefore ensure that the door has certain closed tension.

5.4 Debug End and Enter System

After optimize the OD/CD curve, set P0.06 (control command selection) as 1 (terminal control), the controller will enter the elevator system according the OD/CD command logic of elevator controller and auto run.

5.5 OD/CD Arrival Signal

The output polarity of OD/CD arrival signal can be changed by P6.00 (PC1, PC2, DPA output selection).

5.6 Re-open Signal

Set P6.01=1, the re-open signal is enabled. When the CD resistance is enabled, the re-open signal will be output. Due to the re-open arrival the re-open signal will be stopped output.

5.7 Check the Controller History State

In group P9 it records the recent three time fault information of door machine and the last fault about the controller DC bus voltage, output current, output frequency and door position etc.

In the same time, Group P9 function codes record the OD/CD times and the door machine running hour/day.

5.8 Software Version

You can check the controller software version via P9.12 and check the panel software version via P9.13.

5.9 Debugging Guide

5.9.1 Debugging Notes

YS-K01 is a door controller with synchronous/asynchronous control mode, which is applied for the KS series door machine (synchronous) and the MS series door machine (asynchronous).

For the convenience of customers to distinguish, the KS series door machine and the MS series door machine are respectively shown as Figure 5-5 and Figure 5-6.

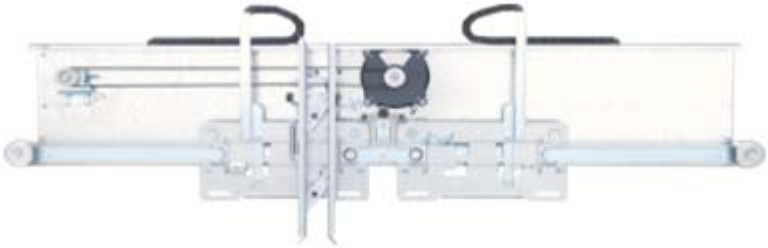


Figure 5-5 KS series door machine

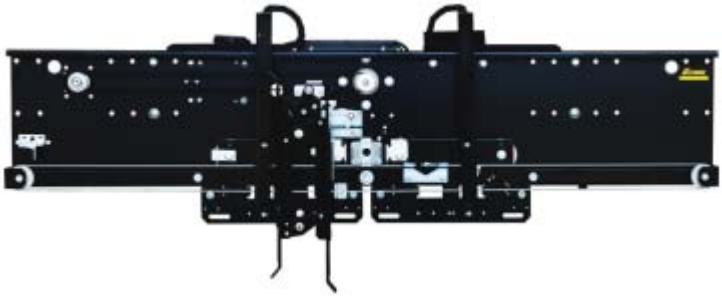


Figure 5-6 MS series door machine

Note:

1. In the factory, the controller has been set the parameters. In generally the user should not change the parameters! But the OD/CD curve parameters of Group P3 and Group P4 can be changed according to the actual situation.
2. According to the motor's model, the controller parameters can be reset by pressing one key.
3. The follows of debugging steps can be used in such situation as: replace the YS-K01 or the motor or the encoder of KS series door machine on the scene.

5.9.2 Debugging Steps

Step 1: For the no updated product, according to the motor's model the controller parameters can be reset by pressing one key! Refer to parameter P0.01 for more details.

Example: If the motor nameplate current is 1.10/1.35A, it means that this is synchronous motor. My company has only one synchronous motor specification, and you can directly set P0.01=3, then it will reset the synchronous motor parameters.

If the motor nameplate current is 0.95/0.55A, it means that this is asynchronous 70W motor, directly set P0.01=11 and press the ↵ key to reset the 70W asynchronous parameters;

If the motor nameplate current is 1.95/0.90A, it mean that this is asynchronous 150W motor, directly set P0.01=13 and press the ↵ key to reset the 150W asynchronous parameters;

For the asynchronous parameters the Dec ratio P1.05 is defaulted as 4.67, but some may be set according to the situation. Refer to appendix A for more details.

For the updated product, the controller parameters can be reset by pressing one key. Refer to parameter P8.10 for more details.

For more convenience of customers to debug, Eshine has system customized the normal OD parameters of KS series and MS series and input V1.04 software version to the controller and the panel. The user only need set one parameters to use the function. The debugging mode is shown as Table 5-1.

Table 5-1 Debugging mode

Series	Specifications	With the latest panel or the controller (with one will be fine)	
		YS-P02 or YS-P03	Controller with V1.04 and above
KS series	KS centre opening 800	P8.10=11	P8.10=01
	KS centre opening 900	P8.10=12	P8.10=02
MS series	MS centre opening 800	P8.10=13	P8.10=03
	MS centre opening 900	P8.10=14	P8.10=04
	MS side opening 1100	P8.10=15	P8.10=05
	MS side opening 1200	P8.10=16	P8.10=06

Step 2: To start motor auto-tuning, set P0.06=0 and P1.06=1, then press OD or CD key. Refer to 5.1 for motor parameter auto-tuning.

Step 3: To start door width self-learning, set P2.05=1, then press OD or CD key, the door machine will do "open door- closed door- open door- closed door". The door width will be stored to P2.06 and P2.07 at the end of self-learning. Refer to 5.2 for door width self-learning.

Step 4: To test the operation, press OD key or CD key, manually open/close the door to observe the OD/CD curve, and then properly change the OD/CD Acc/Dec point and time. Refer to Group P3 and Group P4 for more details.

Step 5: According to the actual need of elevator main control cabinet, ensure the door machine arrival signal (relay output selection: P6.00=0 normally open, P6.00=1 normally closed, it defaults normally closed.)

Step 6: Enter elevator operation, set P0.06=1 to terminal control mode.

Chapter 6 Troubleshooting

1. When fault alarm occurs, please take proper action according to the Table 6-1.

Table 6-1 Fault alarm description and counter-measures

Fault code	Fault name	Possible reasons of fault	Counter-measures
-Lu-	DC bus undervoltage	• At the begining of power on and at the end of power off • Input voltage is too low • Improper wiring leads to undervoltage of hardware	• It is normal state of power on and power off • Please check input power voltage • Please check wiring and wire properly
E001	DC bus overvoltage	• Input voltage is too high • Deceleartion time is too short • Improper wiring leads to overvoltage of hardware	• Please check power input • Please set a proper value for Dec time • Please check wiring and wire properly
E002	Controller output instantaneous overcurrent (hardware)	• Improper connection between controller and motor • Improper motor parameters • The encoder signal error • Improper wiring leads to overcurrent of hardware • Acceleration/deceleration time is too short	• Connect the controller and motor properly • Please set correct motor parameters • To ensure correct encoder signal, check the encoder connection • Please check system wiring and wire properly • Please set proper Acc time and Dec time
E003	Controller output overcurrent (software)		
E004	Loss of Z phase signal of permanent magnet synchronous motor encoder	• Without detecting the Z signal	• Detect the encoder signal
E005	Machine type mismatch	• YS-P01 version is too old (below V1.02)	• Use the new panel YS-P02 or YS-P03 • Alarm fault, the panel should be reset one time
E006	Motor parameter auto-tuning fault	• Motor rated parameters improperly set • Motor incorrect connection • Encoder Z signal loss	• Set proper motor parameters • Please check the motor's connection • Please check the encoder
E007	Controller overloaded	• The load is too big • There are obstacles in door machine	• Regulate the mechanical • Check machinery, to exclude obstacles
E008	Heatsink overheated	• The temperature detection circuit is abnormal • The outer vent is jammed	• Please contact the supplier for repairing • Check the outer vent

Fault code	Fault name	Possible reasons of fault	Counter-measures
E009	Reserved		
E010	Reserved		
E011	Panel EEPROM faulty	• Memory circuit fault of panel EEPROM	• Replace the panel • Please contact the supplier for repairing
E012	Reserved		
E013	Communication fault between the panel and the controller	• RJ45 connection error • RJ45 connection is broken off or loose	• Check the connection, restart to plug the panel • Check the connection, restart to plug the panel
E014	Controller EEPROM faulty	• Memory circuit fault of controller EEPROM	• Please contact the supplier for repairing
E015	Reserved		
E016	Reserved		
E017	Module faulty	• Short circuit between phases output or the ground • Short circuit for the ground • Output current is too high	• Please check the connection and connect the wire properly • Please check the connection and connect the wire properly • Please check the connection and mechanism
E018	Current detect faulty	• Current detection circuit is damaged	• Please contact the supplier for repairing
E019	Reserved		
E020	Reserved		
E021	Reserved		
E022	Reserved		
E023	Encoder error	• The damaged encoder • The wrong connection of encoder • Wrong setting of encoder pulse number per revolution	• Check the encoder, replace it • Check the encoder connection and wire correctly • Please set correct value of pulse number per revolution (P2.00)
E024	Reserved		
E025	Reserved		
E026	Door width self-learning failure	• The faulty encoder • The wrong connection of encoder • Improper setting self-learning parameters of speed or torque	• Check the encoder, replace it • Check the encoder connection and wire correctly • Please set correct value of self-learning speed (P2.04) and self-learning torque (P5.10)

2. If abnormal situation occur, please take proper action according to Table 6-2.

Table 6-2 Abnormal situation and counter-measures

Number	Abnormal situation	Counter-measures
1	During door width self-learning, the door does “open door—close door” again and again	• Check the encoder signal if correctly input. • Check the encoder direction if correct. Cut off the power, then switch on power again, the panel display the pulse number, if you manually pull the door board, the pulse number will increase at OD but decrease at CD; if the situation is contrary, the encoder direction should be changed via P2.01.
2	(Asynchronous motor) During CD process, repeatedly appear the re-open without CD arrival	• Properly increase P5.08 (passenger protection torque). • P1.05 Dec ratio is set wrong. For the motor shaft, it need input the correct value according to the actual situation. For the small shaft 25mm diameter, it need input 5.60; For the big shaft 30mm diameter, it need input 4.67. Generally if the open door width does not exceed 1950mm, it will be called as small shaft.
3	(Asynchronous motor) Near the CD arrival, in the slow speed process appears abnormal shake	• Properly increase P4.06 (creeping speed at CD ending) to 3.5Hz－4.5Hz which will be OK.

Chapter 7 Maintenance

Danger

- Only a trained and qualified professional person can maintain the controller.
- Maintenance personnel should take off all metal jewellery before carrying out maintenance or internal measurements in controller. Suitable clothes and tools must be used.
- High voltage exists when t controller is powered up or running.
- Checking and maintaining can only be done after controller's AC power is cut off. And wait for at least 10 minutes if maintain the cover.

Warning

- For the controller stored for more than 2 years, please use voltage regulator to increase the input voltage gradually.
- Do not leave metal parts like screws or pads inside the controller.
- Do not make modification on the inside of controller without instruction from the supplier.
- There are IC components inside the controller, which are sensitive to static electricity. Directly touch the components on the PCB board is forbidden.

7.1 Daily Maintenance

Some unexpected accidents may occur during operation. Therefore you should maintain controller conditions according to the Table 7-1, record the operation data, and investigate problems immediately.

Table 7-1 Daily checking items

Items	Content	Criteria
Operating environment	Temperature and humidity	-10－+40℃, derating at 40－50℃
	Dust and water dripping	No water dripping
	Gas	No strange smell
Controller	Oscillation and heating	Stable oscillation and proper temperature
	Noise	No abnormal sound

7.2 Periodical Maintenance

Customer should check controller in short time or every 3 to 6 months according to the actual environment so as to avoid hidden problems and make sure the controller runs well for a long time.

General Inspection:

- Check whether the screws of control terminals are loose. If so, tighten them with a screw driver;
- Check whether the main circuit terminals are properly connected; whether the mains cables are over heated;
- Check whether the power cables and control cables are damaged, especially check for any wear on the cable tube;
- Check whether the insulating tapes around the cable lugs are stripped, and for signs of overheating near terminations;

Note:

1. Dielectric strength test of controller has already been conducted in the factory. Do not do the test again. Otherwise, the controller might be damaged.
2. If insulation test to controller is necessary, it must be done to the ground after all input/output terminals are short-connected by conductors. It is forbidden for each terminal to ground test. It is recommended to use the 500V megger.
3. For controller stored for a long time, must be powered up every 2 years. When supplying AC power to controller, use a voltage regulator to gradually raise the input voltage to rated input voltage at least 5 hours.

7.3 Replacing Damaged Parts

The easily damaged component is the electrolytic capacitors of filters.

Generally, the life of electrolytic capacitor is 40,000－50,000 hours. Due to high ambient temperature and large pulse current induced by rapid changing loads, the electrolyte capacitors are aging.

Criteria: Check if frequent over current or overvoltage failures occur during controller start-up with load. Check if there is any leakage of liquids. Check if the safety valve protrudes. Measure the static capacitance and insulation resistance.

7.4 Unwanted Controller Recycling

When disposing controller, please pay attention to the following factors:

The capacitors may explode if they are burnt.

Poisonous gas may be generated when the plastic parts like front covers are burnt.

Disposing method: Please dispose unwanted controller as industrial waste.

Appendix A Parameters

Attributes are changed:

"*": It denotes that the value of this parameter is the actual value which cannot be modified.

"×": It denotes that the setting parameter cannot be modified in run state.

"○": It denotes that the setting parameter can be modified in run state.

Code	Name	Range	KS	MS	Attributes	Setting
Group P0 Basic Parameters (on pages 33－34)						
P0.00	User password	00000－65535	0000	0000	○	
P0.01	Parameter batch disposal selection	00: No function. It need manually set the parameter 01: Upload parameters 02: Download parameters 03: Reset default parameter, synchronous motor parameters 04: Clear fault information. 05－10: Reserved 11: Reset the first group parameters of Eshine (reset 70W asynchronous motor parameters) 12: Reset the second group parameters of Eshine (reset 80W asynchronous motor parameters) 13: Reset the third group parameters of Eshine (reset 150W asynchronous motor parameters) 14－30: Reserved	00	00	×	
P0.02	Parameter upload number	1－12	1	1	×	
P0.03	Parameter download number	1－12	1	1	×	
P0.04	Parameter batch disposal comfirm	0: No function 1: Press ↵ key to comfirm the batch disposal. This parameter (P0.04) will restore to zero when the parameter batch disposal is finished	0	0	×	
P0.05	Mode selection	0: Factory mode (door machine specific function is invalid) 1: Door control mode	1	1	×	
P0.06	Control command selection	0: Panel control 1: Terminal control (auto) 2: Auto-demo run	1	1	×	
P0.07	Maximum output frequency	1.00－99.99Hz	24.00Hz	50.00Hz	×	
P0.08	Advanced password	After input the advanced password, you can check the advanced parameters	0000	0000	○	
P0.09	Control mode	0: Asynchoronous motor open-loop distance control	2	1	×	

Code	Name	Range	KS	MS	Attributes	Setting
		1: Asynchoronous motor closed-loop distance control 2: Synchoronous motor closed-loop distance control				
Group P1 Motor Rated Parameters (on pages 34—35)						
P1.00	Motor rated power	1—750W, default 250W	250W	250W	×	
P1.01	Motor rated voltage	1—300V, default 220V	220V	220V	×	
P1.02	Motor rated current	0.10—10.00A, according to motor nameplate's rated current	1.10A	0.55A / 0.65A / 0.90A	×	
P1.03	Motor rated frequency	1.00—P0.07, according to motor nameplate's rated frequency	24.00Hz	50.00Hz	×	
P1.04	Motor rated Rpm	1—6000rpm, according to motor nameplate's rated rpm	180rpm	900rpm/ 930rpm/ 900rpm	×	
P1.05	Deceleration ratio	1.00—9.99 For the small shaft 25mm diameter, it need input 5.60; For the big shaft 30mm diameter, it need input 4.67. Generally if the open door width does not exceed 1950mm, it will be called as small shaft	1.00	4.67	×	
P1.06	Motor parameter auto-tuning	0: Disabled 1: Motor auto-tuning	0	0	×	
P1.07	No load current	0.01—10.00A	0.38A	0.40A / 0.50A / 0.60A	×	
P1.08	Reserved					
P1.09	Magnetic pole position angle	0.0—359.9°	0.0°	0.0°	×	
Group P2 Encoder Door Width Parameters (on pages 35—36)						
P2.00	Encoder pulse number per revolution	0—9999	1024	200	×	
P2.01	Encoder direction setting	0: The same direction as the encoder actual connection 1: The reverse direction to the encoder actual connection	0	1	×	
P2.02	Operating speed of slow speed	0.01—15.00Hz	7.00Hz	7.00Hz	○	
P2.03	Operating speed at first time power on	0.01—15.00Hz	4.00Hz	7.00Hz	○	
P2.04	Door width self-learning speed	0.01—15.00Hz	4.00Hz	7.00Hz	○	

Code	Name	Range	KS	MS	Attributes	Setting
P2.05	Door width self-learning enable	0: Disabled 1: Door width self-learning is enabled	0	0	×	
P2.06	Low digits of pulse count	0－9999 (pulse number)	3700	0	×	
P2.07	High digits of pulse count	0－9999 (pulse number)	0	0	×	
Group P3 OD Curve Parameters (on pages 36－37)						
P3.00	OD start distance	0－9999 (pulse number)	240	90	○	
P3.01	OD start speed	0.00－15.00Hz	2.50Hz	5.50Hz	○	
P3.02	OD Acc time	0.1－99.9s, recommended value is 0.8－2.0s	0.8s	1.0s/1.0s/ 1.3s	○	
P3.03	OD speed	0.00－max frequency (P0.07), recommended value is 30－45Hz	20.00Hz	36.00Hz/ 38.00Hz/ 38.00Hz	○	
P3.04	OD Dec point position	50.0－90.0% (door width), recommended value is 65－85%	72.0%	68.0%/ 80.0%/ 80.0%	○	
P3.05	OD Dec time	0.1－99.9s, recommended value is 0.8－2.0s, it will properly increase with the door width increasing	1.0s	1.0s/1.0s/ 1.3s	○	
P3.06	Creeping speed at OD ending	0.00－15.00Hz	2.00Hz	4.00Hz/ 5.00Hz/ 4.00Hz	○	
P3.07	OD limit point	80.0－99.9% door width	90.0%	95.0%	○	
P3.08	Re-open curve high-speed area	(from OD speed to start Dec) 10.0－90.0% (door width)	70.0%	90.0%	○	
Group P4 CD Curve Parameters (on pages 37－38)						
P4.00	CD start distance	0－9999 (pulse number)	0	0	○	
P4.01	CD start speed	0.00－15.00Hz	3.00Hz	4.00Hz/ 5.00Hz/ 4.00Hz	○	
P4.02	CD Acc time	0.1－99.9s, recommended value is 0.8－2.0s, it will properly increase with the door width increasing	1.0s	0.9s/1.0s/ 1.3s	○	
P4.03	CD speed	0.00－max frequency (P0.07), recommended value is 26－38Hz	18.00Hz	32.00Hz/ 34.00Hz /34.00Hz	○	
P4.04	CD Dec point position	50.0－90.0% (door width), recommended value is 65－85%	68.0%	66.0%/ 80.0%/ 78.0%	○	
P4.05	CD Dec time	0.1－99.9s, recommended value is 0.8－2.0s, it will properly increase with the door width increasing	1.1s	0.9s/1.0s/ 1.3s	○	
P4.06	Creeping speed at CD	0.00－15.00Hz	1.50Hz	3.50Hz	○	

Code	Name	Range	KS	MS	Attributes	Setting
	ending					
P4.07	Door blade acting position at CD ending	0－210 (pulse number)	160	65	○	
P4.08	Door blade acting speed at CD ending	0.00－15.00Hz	3.00Hz	5.50Hz	○	
P4.09	CD limit point	0－200 (pulse number)	200	60	○	
Group P5 Torque Parameters (on pages 38－39)						
P5.00	OD switching torque	20.0－150.0% (motor rated torque)	80.0%	75.0%	○	
P5.01	OD holding torque	30.0－150.0% (motor rated torque)	75.0%	70.0%	○	
P5.02	OD end torque	0.0－100.0% (motor rated torque)	70.0%	60.0%	○	
P5.03	Switching time from OD holding to OD end torque	0.1－999.9s (the internal has slope)	60.0s	60.0s	○	
P5.04	CD switching torque	20.0－150.0% (motor rated torque)	75.0%	65.0%	○	
P5.05	CD holding torque	30.0－150.0% (motor rated torque)	70.0%	75.0%	○	
P5.06	CD end torque	0.0－100.0% (motor rated torque)	60.0%	55.0%	○	
P5.07	Time from CD holding to CD end torque	0.1－999.9s (the internal has slope)	60.0s	30.0s	○	
P5.08	Passenger protection torque	0.0－150.0% The smaller the value is, the more sensitivity it is. If set P5.08 as 0, this function is disabled. At low speed, the setting value increase by 120.0% (motor rated torque)	70.0%	50.0%	○	
P5.09	Passenger protection invalidation area	0.0－50.0% (door width)	1.0%	1.0%	○	
P5.10	Torque setting under slow speed	30.0%－150.0% (motor rated torque) Remark: The judgment of door width self-learning and torque switching value at first time powe-on	100.0%	100.0%	○	
P5.11	OD resistance torque	0.0－150.0% The smaller the value is, the more sensitivity it is. If set P5.11 as 0, this function is disabled. At low speed, the setting value increase by 120.0% (motor rated torque)	100.0%	0.0%	○	
P5.12	OD resistance time	0.1－9.9s, this function code	3.0s	3.0s	○	

Code	Name	Range	KS	MS	Attributes	Setting
		defines after the setting time of P5.12, it will respond the OD command at OD resistance				
Group P6 Advanced Parameters (on pages 39—39)						
P6.00	PC1, PC2, DPA output selection	0: The signal is open which represents the OD/CD arrival and door position output (equal to the relay normally open contact) 1: The signal is closed which represents the OD/CD arrival and door position output (equal to the relay normally closed contact).	1	1	×	
P6.01	DPA function selection	0: Door position output 1: The re-open signal is output at the CD resistance	0	1	×	
P6.02	Door position output setting	0.1—99.9%	90.0%	90.0%	○	
P6.03	Dec time of open & close resistance	0.1—2.0s	0.5s	1.0s	○	
P6.04	Open & close holding time on demo mode	0.1—360.0s	3.0s	3.0s	○	
P6.05	Mode selection on open & close invalidation	0: Holding the torque at the OD&CD arrival range, but zero-speed running at other position 1: Stop running 2: Only holding the torque at the OD&CD arrival range	2	2	○	
P6.06	Torque setting on open&close invalidation	0—150.0%. When set P6.05 as 0, the special torque will be output to prevent the door from moving	100.0%	100.0%	○	
Group P7 Vector Control Parameters (on pages 39—40)						
P7.00	High speed ASR KP	10—3000	350	1000	○	
P7.01	High speed ASR KI	0 (invalid), 1—1000	200	500	○	
P7.02	Low speed ASR KP	10—3000	350	1000	○	
P7.03	Low speed ASR KI	0 (invalid), 1—1000	200	500	○	
P7.04	ASR switching frequency	0.00—P0.07	8.00Hz	8.00Hz	○	
P7.05	Current loop KP	10—9999	50	100	○	
P7.06	Current loop KI	0—9999	100	1000	○	
P7.07	Torque limit	0.0—200.0% (motor rated current)	120.0%	120.0%	×	
P7.08	Speed filter time	0—7	2	2	○	

Code	Name	Range	KS	MS	Attributes	Setting
	constant					
Group P8 Motor Auto-tune Parameters (on pages 40—42)						
P8.00	Stator resistance	0.00—99.99Ω	depend on model	depend on model	×	
P8.01	Rotor resistance	0.00—99.99Ω			×	
P8.02	Stator inductance	0—9999mH			×	
P8.03	Rotor inductance	0—9999mH			×	
P8.04	Mutual inductance	0—9999mH			×	
P8.05	Slip compensation gain	50.0—200.0%	100.0%	100.0%	×	
P8.06	Curve selection	0: Line 1: S curve	0	0	○	
P8.07	LCD contrast	0—10	0	0	○	
P8.08	LCD screen color	0: White background (normal) 1: Black background (anti)	0	0	○	
P8.09	LCD language	0: Chinese 1: English	0	0	○	
P8.10	Reset Eshine special parameters	00—99 00: Invalid 01: Reset the controller KS800 parameters. 02: Reset the controller KS900 parameters. 03: Reset the controller MS800 parameters. 04: Reset the controller MS900 parameters. 05: Reset the controller PL1100 parameters. 06: Reset the controller PL1200 parameters 07—10: Reserved. 11: Reset the panel KS800 parameters. 12: Reset the panel KS900 parameters. 13: Reset the panel MS800 parameters. 14: Reset the panel MS900 parameters. 15: Reset the panel PL1100 parameters. 16: Reset the panel PL1200 parameters. 17—99: Reserved.	00	00	×	
P8.11	CD door blade closed speed	0.00—2.00Hz	0.00Hz	0.80Hz	×	
P8.12	CD door blade closed speed position	0—80	0	30	×	

Code	Name	Range	KS	MS	Attributes	Setting
P8.13	Reserved					
P8.14	Synchronous motor initial start mode selection	0－2 0: Pulse location 1: Current location 2: Reserved	1	0	×	
Group P9 Diagnostics Parameters (on pages 42－42)						
P9.00	NO.3 fault type (last fault)	1: Controller overvoltage (E001) 2: Controller hardware overcurrent (E002) 3: Controller software overcurrent (E003) 4: Loss of Z phase signal of permanent magnet synchronous motor encoder (E004) 5: Machine type mismatch (E005) 6: Motor parameter auto-tuning fault (E006) 7: Controller overloaded (E007) 8: Heatsink overheated (E008) 9,10: Reserved 11: Panel EEPROM faulty (E011) 12: Reserved 13: Communication fault between the panel and the controller (E013) 14: Controller EEPROM faulty (E014) 15,16: Reserved 17: Module faulty (E017) 18: Current detect faulty (E018) 19－22: Reserved 23: Encoder error (E023) 24,25: Reserved 26: Door width self-learning failure (E026) -Lu-: Undervoltage	*	*	*	
P9.01	NO.2 fault type		*	*	*	
P9.02	NO.1 fault type		*	*	*	
P9.03	DC bus voltage for last fault	0－999V	*	*	*	
P9.04	Output current for last fault	0.00－99.99A	*	*	*	
P9.05	Running frequency for	0.00－99.99Hz	*	*	*	

Code	Name	Range	KS	MS	Attributes	Setting
	last fault					
P9.06	Door position for last fault	0－65535	*	*	*	
P9.07	Open-close cycle lower value	0－9999	*	*	*	
P9.08	Open-close cycle upper value	0－9999	*	*	*	
P9.09	Running hour	0－23	*	*	*	
P9.10	Running day	0－9999	*	*	*	
P9.11	Heatsink temperature	0.0－150.0℃	*	*	*	
P9.12	Controller software version	1.00－99.99	*	*	*	
P9.13	Panel software version	1.00－99.99	*	*	*	

Suzhou Eshine Elevator Components Co., Ltd.

Product Warranty Card

Clinet info	Unit:	
	Add. Of unit:	
	P.C.:	Contact person:
	Tel.:	Fax:
Product info	Barcode on the product body (paste here):	
	Power:	Model:
	Contrat number:	Purchasing date:
Service unit info	Service unit:	
	Contact person:	Tel.:
	Maintenance staff:	Tel.:
	Maintenance date:	

User's quality evaluation for the service:

☐ Better ☐ Good ☐ Common ☐ Poor

Other opinions:

User signature: Date:

Interview record of Customer Service Center:

☐ Interviewed by telephone ☐ Interviewed by letters

Others:

Technical service engineer signature: Date:

Suzhou Eshine Elevator Components Co., Ltd.

Warranty Agreement

1. The warranty period of the product is 18 months (refer to the barcode on the product body). During the warranty period, if the product fails or it is damaged under condition of normal use by following the user's manual, our company will be responsible for free maintenance.
2. The starting time of the warranty period is manufacturing date (see the barcode on the product body), but we could negotiate settlement under special condition.
3. Within warranty period, maintenance will be charged for damages caused by the following reasons:
   A. The damage is caused by improper use or repair/modification without prior permission;
   B. The damage is caused by abnormal voltage, fire, flood, other disasters and second disasters;
   C. The damage is caused by dropped or transportation after purchase;
   D. The damage is caused by the operation not following this user's manual;
   E. The damage or failure is caused by the trouble out of the equipment (e.g. external device).
4. If there is any failure or damage to the product, please correctly fill out the Product Warranty Card in detail.
5. The maintenance fees are charged according to the newly adjusted Maintenance Price List by our company.
6. In general, the warranty card will not be reissued. Please keep the card and present it to the maintenance personnel when asking for maintenance.
7. If there is any problem during the service, please contact the agent of our company or our company directly.
8. This agreement should be interpreted by Suzhou Eshine Elevator Components Co., Ltd.

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