YD660 High Speed Door Servo Control System User Manual (Liquid Crystal Display)

Preface

Thank you for using high performance multi-functional speed door controller.

This manual provides the instruction of controller installation, parameter setting, fault diagnostic, trouble shooting and daily maintenance to the end users

Please read the manual carefully before install the controller, ensure installation and operation properly .Keep the manual and hand it over to the user.

Please contact the after sales service center or regional representative office or reseller in case you have any question or any special requirement on the controller application .

This manual is for YD660 door controller series produced by our company , Subject to change without notice.

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Chapter 1 General

1.1 Controller technical specification

● Input & output characteristic

◆Input voltage range : 220V±15%

◆Input frequency range : 47~63Hz

◆Output voltage range : 0~Rated input voltage

◆Output frequency range : 0~400Hz

● Interface characteristic

◆Digital input: 9 channels

◆Communication port: 1X RS-485 Port

◆Collector open output : 1 channel (interlock output)

◆Relay output: 3 Channels (1 brake relay &2 function output relays)

◆Power supply:24V、12V DC Max.1A output current

● Technical performance

◆Overload : 150% Rated current 60s; 200%Rated current 15s.

● Function characteristic

◆Frequency setting : Digital setting.

◆Provides up to 30 fault protection functions :over current 、over voltage、under voltage 、over temperature 、loss phase 、over load , etc.

Chapter 2 Wiring

2.1 Terminals diagram

2.1.1 Mains circuit terminals function description :

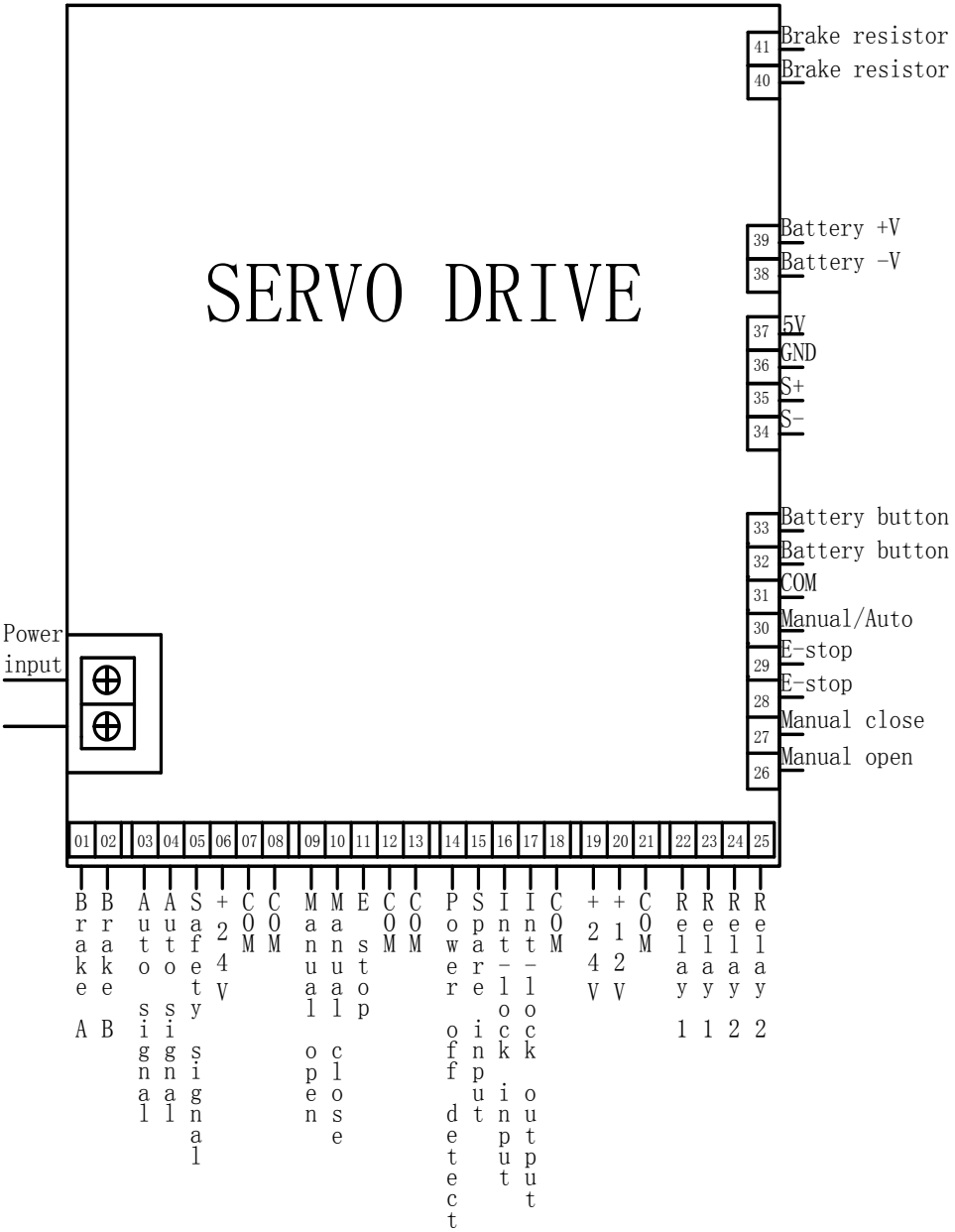
Terminals name	Function description
L、N	Single phase L、N
Aviation plug 1(4X)	Motor output terminals
Aviation plug 2(6X)	Encoder input terminals
PE	Protective ground

2.1.2 Control circuit terminals

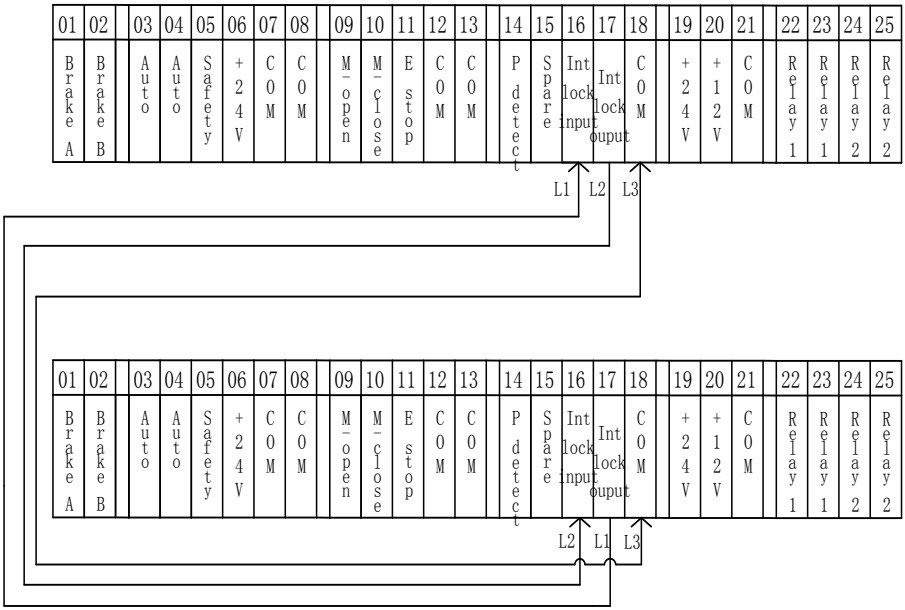
01	02		03	04	05	06	07	08		09	10	11	12	13		14	15	16	17	18		19	20	21		22	23	24	25
Brake A	Brake B		Auto signal	Auto signal	Safety signal	+24V	COM	COM		Manual open	Manual close	E stop	COM	COM		Power off detect	Spare input	Int-lock input	Int-lock output	COM		+24V	+12V	COM		Relay 1	Relay 1	Relay 2	Relay 2

Fig.2-1 Control circuit terminals

2.2 Standard wiring diagram



Interlock wiring between 2 controllers



Remark: 1. Interlock output signal from controller A(No.17) should be connected to interlock input signal of controller B(No.16).

2. Interlock output signal from controller B(No.17) should be connected to interlock input signal of controller A(No.16).

3 .The terminal: COM of controller A & B should be connected together.

4 .Controller A & B need to change para:16.Interlock Function:1.

5 .If you want Controller A & B to work together,you need to change para:17.Interlock Linkage:1.

Fig.2-2 Interlock wiring between 2 controllers

2.3 Terminal description

Terminals name	Terminals function description
Input signals	Digital input terminal, it is an optic-couple input which isolates +24V & DCM. Input voltage range: 24V (no need external power supply) Input impedance: 4.7kΩ
24V	The controller +24V DC power supply 。Max. output current: 1A
12V	The controller +12V DC power supply 。Max. output current: 1A
COM	Input signal common terminal, all input sinals become activated when short circuit with COM terminal. +24V、+12V DC power supply negative, **+24V & +12V total max. current <= 1A**
Relay1	Relay 1 output, all relays are independent, NO. or NC. contact can be selected via parameter setting
Relay2	Relay 2 output, all relays are independent, NO. or NC. contact can be selected via parameter setting

Chapter 3 Operation

This product is divided into liquid crystal display and digital display, which can be selected according to customer needs.

3.1 LCD operation panel description

3.1.1 Operation panel illustration

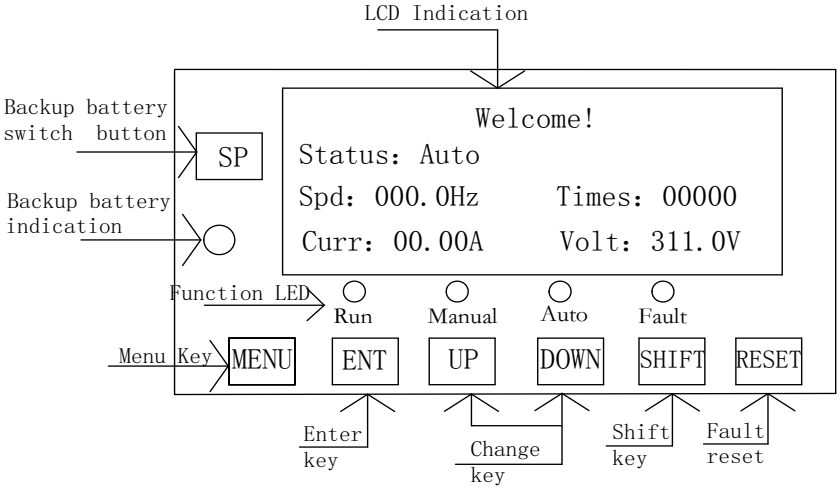


Fig3-1 OP. illustration

3.1.2 Keypad description

Key pad	Name	Function description
MENU	Program key	Enter or escape menu , quick menu modify.
ENTTER	Confirm key	Enter menu , confirm the parameter setting .
UP	increase key	Increase the setting value or function code .
DOWN	Decrease key	Decrease the setting value or function code .
SHIFT	Shift key	when change the setting value of the parameter, it can be used to shift the position of the digit.
RESET	Reset key	Fault reset.
BATTERY	Battery key	Used to open the brake after power failure.

3.1.3 Indication function description

Function indication description:

Name	Description
RUN	Controller running
MAMUAL	Manual running
AUTO	Auto running
Fault	Fault indicator

3.2 Operation Process

3.2.1 Main interface

1. When start the controller, LCD will display company Logo, after 2 seconds it will enter into Running main interface, Please refer to Figure 3-2.

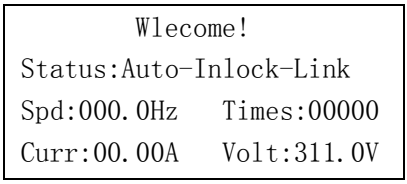


Fig3-2

2. Press"UP" "DOWN" key to switch input/output terminal status interface, plenigita circle means signal input/output, Hollow circle means no signal input/output, Please refer to Figure 3-3、3-4.

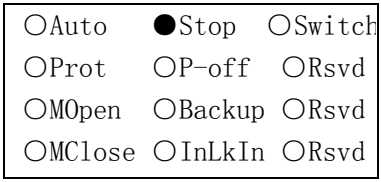


Fig3-3

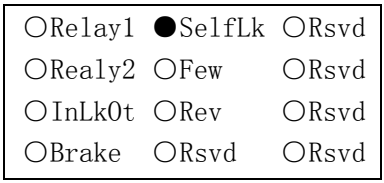


Fig3-4

3.2.2 Menu Process

1. Press"MENU"key to enter into main menu interface from Main interface, there are 8 secondary menus on main menu interface, Please refer to Figure 3-5.

On the main menu interface press "MENU" key again, the main menu interface should be return to main interface.

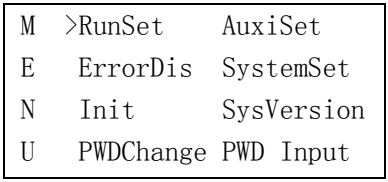


Fig3-5

2. When one function of main menu is chosen, please press "ENTER" key to enter sub-interface, shown as Figure 3-6(RunSet for example).

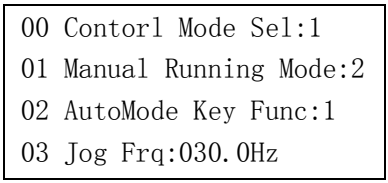


Fig3-6

3. Press"UP" "DOWN"key to switch between sub-interfaces, shown as Figure 3-7.

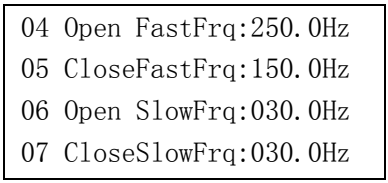


Fig3-7

4. If you need Change parameters, Press "ENTER" key in Sub-interface. Through "UP" "DWON" key to change value,"SHIFT" key to switch between these parameters that you want to change. When parameter changed, press "ENTER" key again to confirm. shown as Figure 3-8.

Note :If there is a password, the parameters can only be viewed but cannot be modified. Pressing the "ENTER" key has no response.

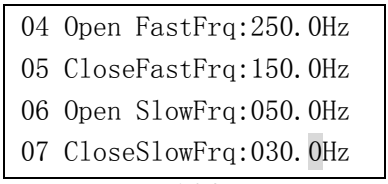


Fig3-8

5. Enter the "AuxiSet" interface in the main menu, can adjust the parameters of the LED operation mode. Users who are accustomed to the operation of the LED can enter this interface to adjust the parameters. For the code numbers, refer to the digital display manual. shown as Figure 3-9.

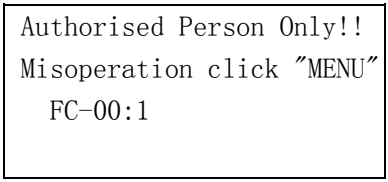


Fig3-9

6. Enter the "ErrorDis" interface in the main menu to view the 4 historical faults that have occurred, shown as Figure 3-10.

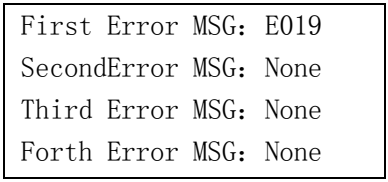


Fig3-10

7. Enter the initialization interface in the main menu can restore the factory settings. When the parameters need to be initialized, the emergency stop must be pressed or in a fault state. Press the "ENTER" key and wait for the LCD display to reset, shown as Figure 3-11.

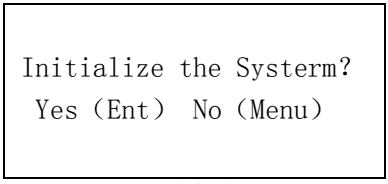


Fig3-11

8. Enter the "SysVersion" interface in the main menu, can view the current LCD systerm version, Servo system version, Real-time position of the door, Real-time current, and Motor temperature, shown as Figure 3-12.

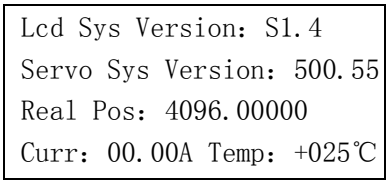


Fig3-12

9. Enter the password modification interface in the main menu ,can set a password to prevent users from operating the parameter by mistake. if want to change the password, you need to enter the original password. The factory password is 000000. The modified password must be 6 digits and Repeated input twice is effective, shown as Figure 3-13、3-14、3-15、3-16.

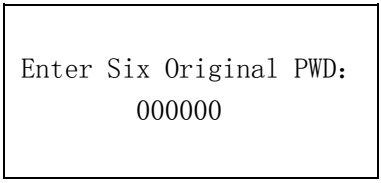


Fig3-13

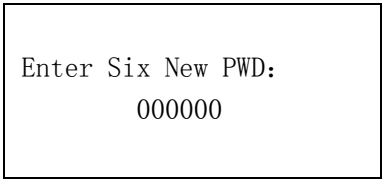


Fig3-14

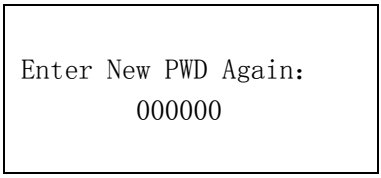


Fig3-15

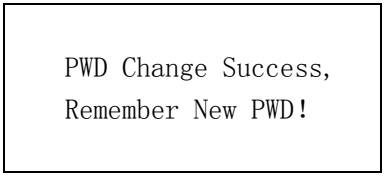


Fig3-16

10. Enter the password input interface in the main menu to enter the password. You can modify the related parameters only after the password is correct, otherwise the parameters can only be viewed and cannot be modified. After the password is correct, you will return directly to the main menu interface. If you enter wrong password ten times in a row, you need to wait half an hour before you can enter the password again. Valid within eight minutes after entering the correct password.

Note:When the password is set to 000000, it means no password.

Chapter 4 Quick setting

This Product can choose abs encoder mode (00 Control Mode Sel:1) and origin mode(00 Control Mode Sel:0)，Learning limit methods in the same way. But the origin mode needs to be connected to the origin signal and After power-off it needs to return The origin. The abs encoder mode can be moved freely after power off. So the factory default values are abs encoder mode.

4.1 Procedure of limit learnning method

1. Connect the encoder with the controller firstly , otherwise E007fault will be displayed , it will report E019 failure for the first power-on，press the RESET keypad to clear the fault.if connection is correct , display : Limit unlearned，that means the setting of top and bottom limit position should be done . If that has been done before, there will be no indication of Limit unlearned. shown as Figure 4-1、4-2、4-3.

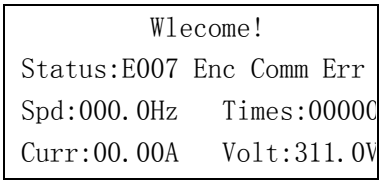


Fig4-1

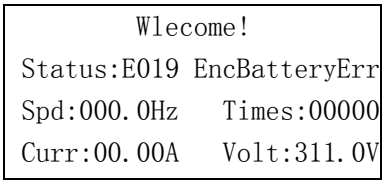


Fig4-2

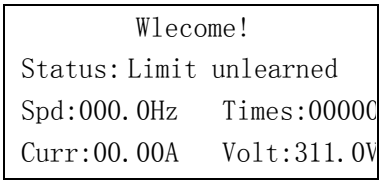


Fig4-3

2. Press the emergency stop switch firstly，the press manual open and manual close push button at the same time for 3 seconds , the controller will go into position setting status and indicates Fig4-4，now it is in the position setting status，can start the position setting .

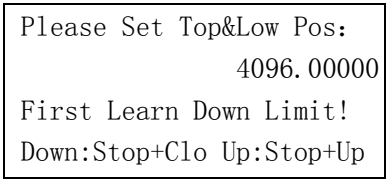


Fig4-4

3. Release the emergency stop push button，using the manual open and manual close push button to run the door. If the running direction is different，change the parameters in "SystemSet" interface：**43 Motor RunDir Sel:1or0**. shown as Figure 4-5.

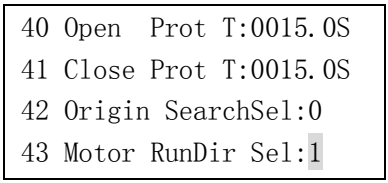


Fig4-5

4. When the running direction is correct，using the manual open and manual close push button to run the door to bottom limit position (door closed position) , then press Emergency stop push button , press the close push button shortly ,when "Low Pos setting success" disappear, the bottom limit setting is finish, shown as Figure 4-6.

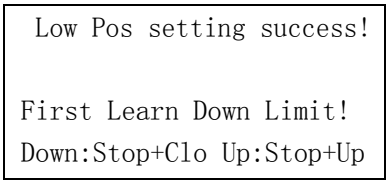


Fig4-6

5. Release the emergency stop push button，using the manual open and manual close push button to run the door to top limit position (door opened position) , then press emergency stop push button , press the open push button shortly , when "Top Pos setting success" disappear，the top limit setting is finish, shown as Figure 4-7.

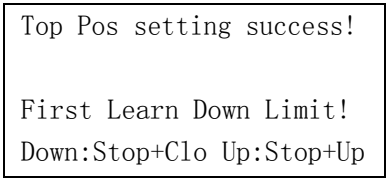


Fig4-7

6. The limit setting finish ， release the emergency stop push button ， if the controller is set in automatic mode , the door will close after the delay closing setting time , shown as Figure 4-8.

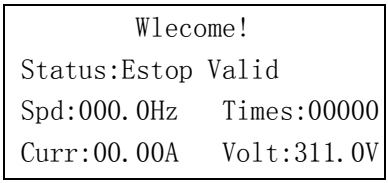


Fig4-8

Attention ：（1）Should setting the limit position firstly .

（2）During the setting if E009 indicated ， should switch off then on the controller to reset the controller or press the RESET keypad to clear the fault ， after that please repeat the steps 1-5.

The parameters can be modified accordingly as required, ref. to the following parameters table ：

Interface	LCD function description	Range description	Initial value	Comm Addr
SystemSet	36 Running Acc Time	1～10000ms	700ms	0x010B
SystemSet	37 Running Dec Time	1～10000ms	500ms	0x010C
RunSet	00 Control Mode Sel	0～1 0:origin limit 1:abs Encoder limit	1	0x0C00
RunSet	01 Manual Running Mode	0～2 0:normal mode 1:single button mode 2:jog mode	2	0x0C01
RunSet	02 AutoMode Key Func	0～1 0:Manual open and manual close button no effect 1:Manual open and manual close button effective	1	0x0C10
RunSet	03 Jog Frq	0.0Hz～300.0Hz	30.0Hz	0x0C03
RunSet	04 Open FastFrq	0.0Hz～320.0Hz	250.0Hz	0x0C04
RunSet	05 Close FastFrq	0.0Hz～320.0Hz	150.0Hz	0x0C05
RunSet	06 Open SlowFrq	0.0Hz～300.0Hz	30.0Hz	0x0C06

RunSet	07 Close SlowFrq	0.0Hz～300.0Hz	30.0Hz	0x0C07
RunSet	08 Open Buffer Val	5-100%	15%	0x0C0A
RunSet	09 Close Buffer Val	5-100%	15%	0x0C0B
RunSet	10 Ajar Open Value	5-100%	70%	0x0C0C
RunSet	11 Close Wait Time	0-6500.0s	5.0s	0x0C0D
RunSet	16 Interlock Function	0～1 0:Single running 1:two machines linked running	0	0x0C12
RunSet	17 Interlock Linkage	0～1 0: linkage disable 1: linkage enable Note : if choose linkage on ,No.16 should be set to 1	0	0x0C13
RunSet	18 Manual Interlock	0～1 0:interlock off 1:interlock on Note : interlock disable under Jog mode	0	0x0C15
RunSet	19 Interlock Delay Time	0～6500.0s	2.0s	0x0C14

Chapter 5 Function parameter list

Explanation:"○": Set at any time, take effect immediately.

"●": Set when stop, take effect immediately

"◎": Read only, cannot set

Interface	LCD function description	Range description	Initial value	Property	Comm Addr
RunSet	00 Control Mode Sel	0～1 0:origin limit 1:abs Encoder limit	1	●	0x0C00
RunSet	01 Manual Running Mode	0～2 0:normal mode 1:single button mode 2:jog mode	2	●	0x0C01
RunSet	02 AutoMode Key Func	0～1 0:Manual open and manual close button no effect 1:Manual open and manual close button effective	1	○	0x0C10
RunSet	03 Jog Frq	0.0Hz～300.0Hz Jog frequency only using in manual mode.	30Hz	○	0x0C03
RunSet	04 Open FastFrq	0.00Hz～320.0Hz Set the fast speed frequency	250Hz	○	0x0C04
RunSet	05 Close FastFrq	0.00Hz～300.0Hz Set the fast speed frequency	150Hz	○	0x0C05
RunSet	06 Open SlowFrq	0.0Hz～300.0Hz Set the slow speed frequency	30Hz	○	0x0C06
RunSet	07 Close SlowFrq	0.0Hz～300.0Hz Set the slow speed frequency	30Hz	○	0x0C07
RunSet	08 Open Buffer Val	5～100%	15%	○	0x0C0A

RunSet	09 Close Buffer Val	5～100%	15%	○	0x0C0B
RunSet	10 Ajar Open Value	5～100%	70%	○	0x0C0C
RunSet	11 Close Wait Time	0～6500.0s Delay closing time after door opened.	5.0s	○	0x0C0D
RunSet	12 ManualMode Auto Signal	0～1 0: Auto-open and ajar height open signal disable under manual mode . 1: Auto-open and ajar height open signal enable under manual mode . Note : Not valid for Jog mode.	0	○	0x0C16
RunSet	13 Input Assist Function	0～9 can be used as other input terminal(DI1～DI9)	0	○	0x0C24
RunSet	14 Lower Limit Gain	0～5.000*100 When the door is too heavy, the stop position is lower than the bottom limit setting position , modify the setting of this parameter can make the door stop at acceptable stop range .	0	○	0x0C19
RunSet	15 OverLimit Offset	0～9.999*100 0:no effect If door running over the limit devidtion , E026fault will be displayed.	1.000	○	0x0C11
RunSet	16 Interlock Function	0～1 0:Single running 1:Two machines linked running	0	○	0x0C12

RunSet	17 Interlock Linkage	0～1 0: linkage disable 1: linkage enable Note:if choose linkage on,NO.16 should be set to 1	0	○	0x0C13
RunSet	18 Manual Interlock	0～1 0:interlock off 1:interlock on Note : interlock disable under Jog mode	0	○	0x0C15
RunSet	19 Interlock Delay Time	0～6500.0s	2.0s	○	0x0C14
RunSet	20 Fire Function Delay Time	0.0～6500.0s 0:Function disable if setting not equal to 0 , the spare input need assigned as the fire control terminal	0s	○	0x0C28
RunSet	21 Fire Wait High	30%～100%	70.0%	○	0x0C29
RunSet	22 Fire 2Point Control	0～1 0: Fire smoke detection control 1:Fire light-sensitive and smoke detection control	0	○	0x0C2A
RunSet	23Power off Function	0～3 0: Keep the status as that before power off. 1 : When power off is detected,door changes to automatic open in slow speed then stop at top limit position . Can jog up or down the door. 2 : When power off is detected, door changes to automatic close in slow	0	○	0x0C1A

		speed then stop at bottom limit position . Can jog up or down the door. 3 : When power off is detected ,door stop , Can jog up or down the door.			
RunSet	24 Top Limit PosL	Top limit value by the learn mode No.25*65536+No.24	0	○	0x0C08
RunSet	25 Top Limit PosH			○	0x0C09
RunSet	26 Low Limit PosL	Low limit value by the learn mode No.27*65536+No.26	0	○	0x0C0E
RunSet	27 Low Limit PosH			○	0x0C0F
SystemSet	28 Input Delay Time	0～9999ms	10ms	○	0x0600
SystemSet	29 Auto Signal Delay Time	0～6000.0s	0.0s	○	0x061A
SystemSet	30 Prot Dignal Delay Time	0～6000.0s	0.0s	○	0x061B
SystemSet	31 LCD Backup Time	0～9.9Min 0: LCD backup is always on Turn off the display aftera setting time.	0Min	○	-
SystemSet	32 Input1 Logic (DI1～DI5)	00000～11111 0：Hi level effective NO. 1：Low level effective NC. One place: DI1 Auto open signal Tens place: DI2 Protection signal Hundreds place: DI3 Manual open signal Thousands place: DI4 Manual close signal Ten thousands place: DI5 Emergency stop	10000	○	0x0601

SystemSet	33 Input2 Logic (DI6～DI10)	00000～11111 0：Hi level effective NO. 1：Low level effective NC. One place: DI6 Power off detection Tens place: DI7 Spare input Hundreds place: DI8 Interlock input Thousands place： DI9 Manual/Auto Ten thousands place: DI10 Rserved	00000	○	0x0602
SystemSet	34 Output1 Logic (DO1～DO5)	00000～11111 0：Hi level effective NO. 1：Low level effective NC. One place: DO1 Relay 1 Tens place: DO2 Relay 2 Hundreds place: DO3 Interlock output Thousands place: DO4 Brake relay Ten thousands place: DO5 Self-locking (DO5 forbid change)	00000	○	0x060F
SystemSet	35 AntiIcer Function	-100℃～+135℃ 0: Function disable. After setting the antifreeze temperature, when the motor temperature is lower than the set value, the antifreeze function is activated	0	○	0x0C32
SystemSet	36 Running Acc Time	1～10000ms	700ms	○	0x010B

SystemSet	37 Running Dec Time	1～10000ms	500ms	○	0x010C
SystemSet	38 Brake Resistor Val	10～999Ω	100Ω	○	0x0811
SystemSet	39 Brake Resistor Val	30～65000W	200W	○	0x0812
SystemSet	40 Open Protective Time	0～6500.0s The open running time longer than this protective time, fault E027 indicated. 0:No protective .	15.0S	○	0x0C17
SystemSet	41 Close Protective Time	0～6500.0s The open running time longer than this protective time, fault E028 indicated. 0:No protective .	15.0S	○	0x0C18
SystemSet	42 Origin Search Selection	0～2 0: Find origin manually 1:Automatically find origin after power on 2:When manual up and auto open signals are detected, automatically find origin . Note:Only origin mode effective	0	○	0x0C1E
SystemSet	43 Motor Run Direction Selection	0～1 0: Forward 1: Reverse	0	○	0x0C27
SystemSet	44 Relay1 Function	18～28 0.No function 18.Brake output active 19.Door closed active 20.Door opening active (effective for auto mode)	0	○	0x0610

SystemSet	45 Relay2 Function	21.Door opened active 22.Door running active 23.Door not at the bottom limit active. 24. Electromagnetic lock Function acive (Need change Para:FC-27=1) 25.Fire alarm active 26.Fire spray active 27.Door opening active 28.Door closing active 29.Interlock active 30.Fault active	0	○	0x0611
SystemSet	46 Interlock Output Function		29	○	0x0612
SystemSet	47 Learning limit minimum height value	0～9999rpm 0: Function disable Prevent mistakes caused by mislearning.	1rpm	○	0x0C2D
SystemSet	48 Servo Start Delay Time	0～65000ms Before the brake is released, the servo outputs in advance to prevent the door from sliding down.	100ms	○	0x0C2B
SystemSet	49 Servo Close Delay Time	0～65000ms Before the brake is closed, the servo output will delay turned off to prevent the door from sliding down.	200ms	○	0x0C2C
SystemSet	50 Brake Start Delay Time	0.00～650.00s	0.00s	○	0x0C22
SystemSet	51 Brake Close Delay Time	0.00～650.00s	0.00s	○	0x0C23

SystemSet	51 Manual&Auto mode Switch Selection	0～3 0:Level trigger 1:Edge trigger 2:Only Auto mode 3:Only Manual mode	0	○	0x0C31
SystemSet	53 Estop Or Error Clear Selection	0～1 0：No continue running. 1：Continue running .	0	○	0x0C1F
SystemSet	54 Running Time (Low Value)	0～65535 Indication of the open cycles	0	○	0x0C25
SystemSet	55 Langue and Logo Selection	0～2 0:Chinese&Logo 1:Chinese 2:English	0	○	-
SystemSet	56 Pos PID Kp	0.1～2000.0Hz	30.0Hz	○	0x0500
SystemSet	57 Spd PID Kp	0.1～6500.0Hz	200Hz	○	0x0504
SystemSet	58 Spd PID Ki	0.1～6500.0ms	15.0ms	○	0x0505
SystemSet	59 Motor Inertia Ratio	0.01～99.99	1.00	○	0x050C
SystemSet	60 Relay1 Delay Output	0～6000.0s Relay output after a set time	0.0s	○	0x0615
SystemSet	61 Relay2 Delay Output		0.0s	○	0x0616
SystemSet	62 Relay1 Output Delay	0～6000.0s Relay output turns off after a set time	0.0s	○	0x0617
SystemSet	63 Relay2 Output Delay		0.0s	○	0x0618

Chapter 6 Fault alarm and Treatment

6.1 Fault Diagnosis and Treatment

Fault code	Fault causes	Fault reason	Solution
E001	Short circuit	1.Accelaration time too short 2. IGBT failure 3.Failure caused by disturbance 4.PE.connection not reliable	1.Increase the acceleration time 2.Check peripheral equipment. 3.Check the grounding . 4.Call for support.
E00C	Software over current		
E002	Hardware over voltage	1.Deceleration time too short. 2.Load inertia too high. 3. Power supply voltage abnormal.	1.Increase deceleration time . 2.Increase the brakeing resistor. 3.Check the power supply.
E00B	Software over voltage		
E003	EEPROM R/W failure	1.Parameter read/write error 2.EEPROM damaged	1. Power off and restart 2. Init parameters. 3. Ask for service.
E004 E006	AD Init failure	1. Interference. 2. Drive hardware fault	1. Power off and restart 2. Ask for service.
E005	Braking Resistor Overload	1. Power supply voltage too high. 2.Resistor power too small. 3.Closing speed too fast	1.Check the power supply 2. Increase the brakeing resistor power. 3. Reduce running speed
E007	Encoder communication fault	1.Communication interrupt	1.Check the connection between the encoder and the controller . 2. Replace the encoder

Fault code	Fault causes	Fault reason	Solution
E008	Encoder magnetic field too weak	1.Magnetic is not installed . 2.The magnetic is ageing - magnetic field get weak .	1.Reinstall the magnetic in good way. 2.Replace with new magnetic.
E009	Encoder data overflow	1.The encoder position data higher than the max. value or lower than the min. value .	1.Set the top limit and bottom limit again.
E00A	Under voltage	1. Power supply voltage too low. 2.Power cord is too thin. 3. Overload	1.Check the power supply 2.Replace the power cord 3.Reduce running speed and load.
E00D	Motor overload	1. Continuous use above the rated load. 2. Motor stall or load increased suddenly. 3.Motor power not enough to drive the load.	1. Reduce load 2. Choose the controller or motor with higher power.
E00E	Servo overload		
E00F	Motor overheat	1.Overcurrent instantaneously . 2.Short circuit between phases or phase to grounding . 3.Enviromental temperature too high . 4.Power supply circuit abnormal . 5.Control board abnormal .	1.Reduce load . 2.Check cables . 3.Check the power supply 4.Lower the temperature. 5.Ask for service.
E010	Servo overheat		

Fault code	Fault causes	Fault reason	Solution
E012	Motor overspeed	1.UVW phase sequence error 2. Running too fast	1.Check motor wire 2.Reduce running speed 3.Ask for service
E014	Motor run start overspeed	1.Starting while the motor is rotating	1.Starting after Motor stops
E015	Inertia ratio learn failure	1.Learning over 40S	1. Reduce learning speed 2. Increase Acc Time
E018	Encoder overheat	1. Motor runs for a long time 2.Enviromental temperature too high	1.Increase run interval 2.Lower the temperature. 3.Ask for service
E019	Encoder battery fault	1.Disconnect the encoder cable from the controller 2.The battery is not connected properly 3.Battery voltage is too low	1.Press “RESET” clear 2.Check the battery installation position. 3. Replace battery
E026	Over limit fault	1.Encoder data transmit error 2.external interference	1.Power off and restart 2. Relearn limit 3.Increase FC-17 Para
E027	Door open running over time	1.The door is too high and the door open protective time setting too short . 2.The door load is too heavy , the open slow speed setting is too low. 3.Motor power is too low.	1.Increase the open protective time FC-23 2.Increase the door open slow frequency FC-06 3.Replace the motor with higher power. 4.Ask for service.

Fault code	Fault causes	Fault reason	Solution
E028	Door close running over time .	1. The door is too high and the door close protective time setting too short. 2.The door load is too heavy , the close slow speed setting is too low. 3.Motor power is too low.	1. Increase the open protective time FC-24 2. Increase the door open slow frequency FC-07 3. Replace the motor with higher power. 4. Ask for service.
-	Limit unlearned	1.Removed the encoder 2.Replace battery 3.First time installation	1. Relearn limit
-	EStop valid	1.Estop button pressed 2.External Estop button pressed 3.Estop button broken	1. Release E-stop button 2.Check buttons and control lines
-	Need Upkeep	1. Reaching the maintenance interval	1. Long press “ENT” clear 2.Seek factory maintenance