



Puertas & Portones Automáticos, S.A. de C.V.
¡Nuestra pasión es la Solución!....

» OPERADOR INVERTER ENCODER INCL TAB 0.75K 220V MARCA POWEVER
MOD.A1-DC4 A1-PE200, A1-DC4 A1-PE500.



A1-PE200/A1-DC4



PV-00001-00



A1-PE500/A1-DC4



PV-00002-00

MANUAL DE INSTALACION

Para Modelos A1.

Descargar en PDF



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V02.23



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Introduction

Thank you for choosing High Speed Door Servo Control System.

Please read this manual carefully before you start to use the system. In this manual you will find instructions for how to set the operating code the controller, malfunction diagnostics and debugging, and routine maintenance.

Notice:

- Before connecting the system to live wire place make sure the power supply is off.
- Please make sure the power voltage in the main circuit is the same as controller's rated voltage. Also please make sure the ground terminal is properly and reliably connect to the ground wire.
- DO NOT touch output terminal directly. DO NOT short circuit the output terminal and out shell.
- After the power supply is cut, and before the LCD is off, there still high voltage electricity in the circuit, so DO NOT touch the internal wiring and electronic components.
- Internal wiring and electronic components are very sensitivity to static electricity, so DO NOT let any object contact the internal wiring and electronic components of motor driver and the main circuit of the touch control panel.

Inspection

All product has passed inspection and testing before is leaving the factory.

When you open the unit place make sure there is no damager during shipping.

Also to confirm the equipment ratings are matching your requirement.

General Characteristic

Our servo control system is suitable for rapid door and spiral doors.

□

The system is in compact package, with high torque and high operating speed, lower noise, high reliability, smooth and soft operating curves, it's suitable for high speed and intensive usage environment.

The rolling curtain can be controlled by wall switch, push button, bluetooth, radar, safety edge, photo eye, induction loops, etc.

Specification

Specification for Controller

Model	DC4-1	DC4-2	
Enclosure material	SPCC		
Dimension(L*W*H)	320x140x140	340x195x128	mm
Installation method	Vertical installation without vibration		
Power supply	1N~200-240		V
Power frequency	50/60		Hz
Rate output power	1.5		KW
External power supply	24		VDC
	0.4		A
Ambient temperature	-10 ~ +50		°C
Storage temperature	-25 ~ +55		°C
Ambient humidity	30%-85%, No condensation		
Place of use	Indoor, no direct sunlight, no dust, corrosive gas, oil mist, water vapor, etc.		
Weight(net)	1.6	2.3	Kg

Specification for Motor

Model	PE210	PE510	
Dimension(L*W*H)	317x110x215	442x130x228	mm
Rated Output Power	0.75	1.5	KW
Rated Speed	3000		RPM
Rated Torque	2.39	4.78	Nm
Power supply	1N ~ AC200-240		V
Power frequency	50/60		Hz
Power current	6.5	13	A
Ambient temperature	-10 ~ +40 ¹⁾		°C
Storage temperature	-25 ~ +55		°C
Ambient humidity	30%-85%, No condensation		
IP degree	IP54		
Limit Mode	Absolute Encoder		
Self Locking Mode	Electro Mechanical Brake		
Manual Release	Handle		
Weight(net)	8.0 ²⁾	13 ³⁾	Kg

1)When using a temperature range of -20~-10°C and +40~+50°C use half of rated power output.

2)Weight includes RV50 reducer.

3)Weight includes RV63 reducer.

Operating Instructions

1. Basic Function

The system can be operated via: 1) control box; 2) jog control; 3) continuous automatic operation; 4) emergency stop; 5) single side operation box; 6) time delay; 7) radar and/or induction loops. Please refer to wiring terminal for external connections.

2. Control Key/Button

a) “↑” Key/Button: Inching control door’s opening movement or continuous automatic opening.

b) “↓” Key/Button: Inching control door’s closing movement or continuous automatic closing.

NOTE: these settings are set according to the contact; however they can be changed according to operating needs.

c) “STOP” Key/Button: Push this key under emergency situation it will shutdown the operation and the door will stop and stay at that position

d) Four keys on LCD are main menu keys.

3. Install limit switch

The limit switch of PE210 and PE510 uses the built-in absolute encoder solution, which is pre-installed in the motor before leaving the factory and does not need to be reinstalled.

4. Safety

- 1) The motor and controller **MUST** ground properly;
- 2) During the installation, commission and operation **NO ONE** is permit to stand under the door and stand in the operating path;
- 3) While installing and testing the motor package, at least half of the door's axle **MUST** be insert into the reducer.
- 4) Check if there any obstacles in the operating path, if there is please remove the obstacles before lower the gate.
- 5) **DO NOT** disassemble the controller and motor; any damagers due to this action are **NOT** cover under free warranty.

The company reserves the right to modify the product, according to improvement of technology and production process, while the basic characteristic of the product may remain some.

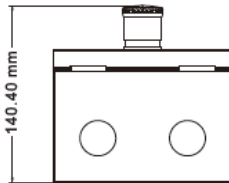
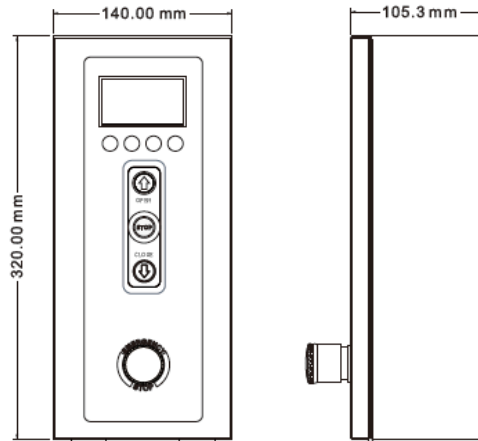
Maintenance

The mounting screw for the controller and motor must inspect regularly to prevent screw been getting loose and falling off. Check the internal and external wirings.

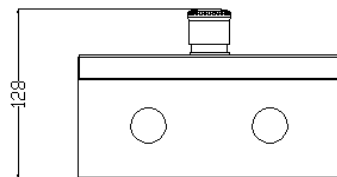
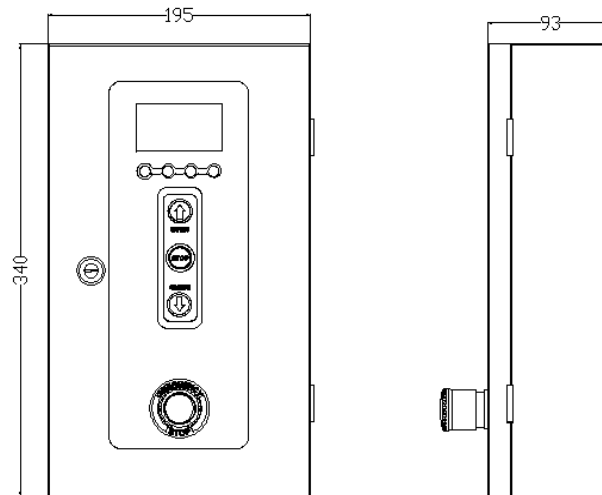
Check and change the oil for the reducer on regular basis.

Size

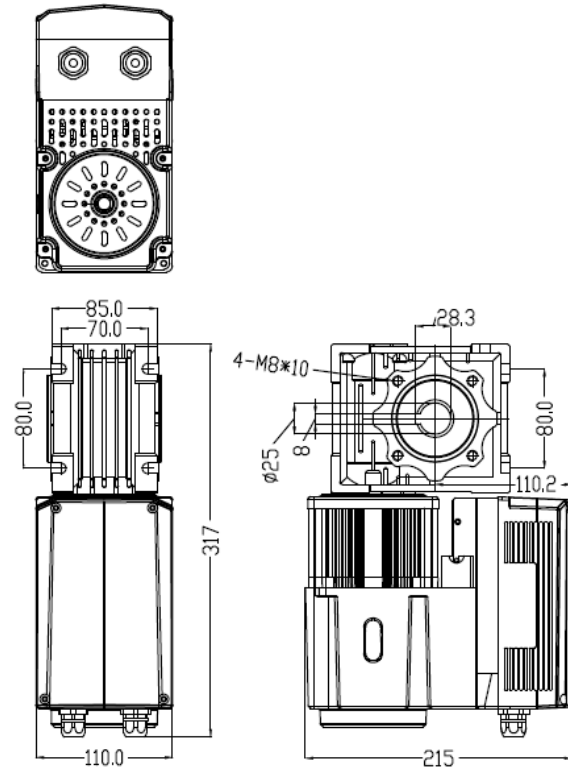
UNIT: mm



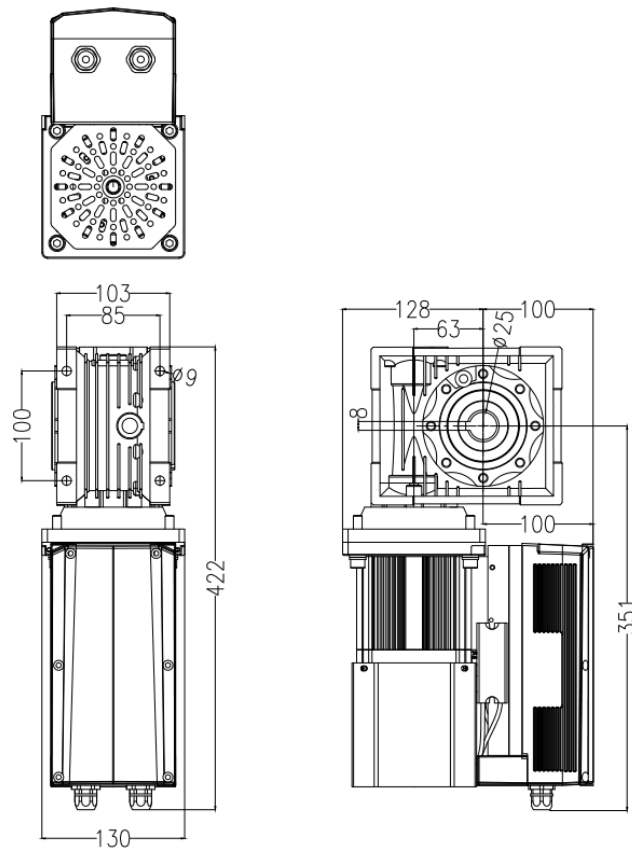
DC4-1 Controller



DC4-2 Controller



PE210(0.75KW) Motor



PE510(1.5KW) Motor

System Operation

MAIN-----

SERVO	(dispal)		
MODE:	(mode)		
STATUS:	(status)		
<input type="button" value="Info"/>	<input type="button" value="Err"/>	<input type="button" value="Set"/>	<input type="button" value="Mode"/>

(dispal): Torque, Speed, Position.

(mode): Manual, Auto, Jog.

(status): OK, Opening, Closing, Falut, Stop, E-stop, Safty1, Safty2, Lock, Maintenance.

Press key, input password (6668) .

Password			
6666			
<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="button" value="Ok"/>	<input type="button" value="Esc"/>

Change the operation mode (Manual, Auto, Jog).

Mode Setting			
MANUAL			
<input type="button" value="Adj"/>	<input type="button" value="Save"/>	<input type="button" value="Esc"/>	

Press key, input password (default 6668).

Password			
6666			
<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="button" value="Ok"/>	<input type="button" value="Esc"/>

-----1.Parameter

Index	Parameter	Value	Default
1	Opening Speed	20-125	100
2	Closing Speed	20-125	60
3	Open Slowdown dis.	30-500	50
4	Close Slowdown dis.	30-500	50
5	Auto Closing Time	<ul style="list-style-type: none"> ● Disable ● 1-240 s 	5 s
6	Output 1 Config	<ul style="list-style-type: none"> ● Non-close Limit ● Close Limit ● Non-open Limit ● Open Limit ● Opening ● Closing ● Non-limit Position ● Limit Position ● Reach Close Limit ● Failure Warning ● Disable 	Disable
7	Output 2 Config	<ul style="list-style-type: none"> ● Double Interlock Automatic Opening ● Running ● Stopped ● Auto Mode State 	Disable
8	Output 3 Config	<ul style="list-style-type: none"> ● E-Stop State ● Auto Closing Countdown ● Delayed Opening Countdown 	Disable
9	Output 4 Config	<ul style="list-style-type: none"> ● Partial Open Limit ● All Open Limit ● Safety 1 Output ● Safety 2 Output ● Normal State Output 	Disable
10	Partial Opening	10-100%	100
11	Safety 1 Height	Set the current position of the door to the failure height of safety signal 1	
12	Safety 2 Height	Set the current position of the door to the failure height of safety signal 2	
13	Display Config	<ul style="list-style-type: none"> ● Position ● Speed ● Torque 	Torque

14	Backlight Setting	<ul style="list-style-type: none"> ● 3 minute auto Off ● Signal wake_up ● 60 minute power saving ● 60 minute auto off ● Always On 	3 minute auto Off
15	Auto Anti Frozen	<ul style="list-style-type: none"> ● Off ● 1-999 min 	Off
16	Wireless Remote	<ul style="list-style-type: none"> ● Off ● On 	Off
17	RS485 Interlock	<ul style="list-style-type: none"> ● Off ● On 	Off
18	Input Port Set	●General Port 1 Set	Emergency Stop
		● General Port 2 Set	Auto Open
		● General Port 3 Set	Partly Open
		● General Port 4 Set	Inter Lock
		<ul style="list-style-type: none"> ●Manual Open Set ●Manual Close Set ●Manual Stop Set ●Safety Sig 2 Set 	On

-----2.Limit Switch Setting

Choose the open direction.

Press OPEN-key

Direction

Correct?

Next, we shall set the Open and Close Limit.

Open Limit

Close Limit

Finally, we will see the result.

Calibrate
Programmed

Ecs

or

Calibrate
Failure

Ecs

-----3.RTC Config

Configure the date and time of the real time clock.

1. Year
2. Month
3. Day

Year
2015

Index	Parameter
1	Year
2	Month
3	Day
4	Hour
5	Minute

-----4.Advanced Setting

-----1.Communication

Set RS485 slave address and baudrate.

1. Slave Address
2. Baud Rate

Slave Address
1

Baud Rate

4800

Adj Save Esc

-----2.Contact Type

Set the contact type.

Index	Parameter	Value	Default
1	Manual Open	N.O / N.C	N.O
2	Manual Close	N.O / N.C	N.O
3	Manual Stop	N.O / N.C	N.O
4	Safety Sig 2	N.O / N.C	N.O
5	General Port 1	N.O / N.C	N.C
6	General Port 2	N.O / N.C	N.O
7	General Port 3	N.O / N.C	N.O
8	General Port 4	N.O / N.C	N.O

1. Manual Open

2. Manual Close

3. Manual Stop

↑ ↓ Ok Esc

Manual Stop Input

N.O

Adj Save Esc

-----3.Adv Parameter

First, input password (7779).

Password

7777

+ - Ok Esc

Select the parameter index.

Adv Parameter

Index: 01

+ - Ok Esc

Change the parameter value.

Adv Parameter
P01: 0001

+ - Save Esc

-----4. Maintenance

Set the work cycles before the next maintenance.

Maintenance
0 Thousand

+ - Save Esc

-----5. System Config

Input password (default 1111).

Password
_000

← → Ok Esc

1. Cycle
2. Time
3. Password

↑ ↓ Ok Esc

Set the work cycles and time.

Work Cycle
0 Thousand

+ - Save Esc

Work Time
0 Days

+ - Save Esc

Change the system config password.

Password
_111

→ Adj Save Esc

-----6. Auto Test

Run the system auto testing.

Auto Test
(display)
0

On Off

-----5.Language

Set the system language.

Language		
English		
Adj	Save	Esc

-----6.Restore Factory

Restore factory settings.

Restore Factory Param	
Restore ?	
Ok	Esc

-----Info

-----1.Input Query

Displays the input states.

Index	Port	State
1	Open Button	0: No Signal 1: Has Signal
2	Close Button	
3	Stop Button	
4	Manual Open	
5	Manual Close	
6	Manual Stop	
7	Safety Sig 2	
8	General Port 1	
9	General Port 2	
10	General Port 3	
11	General Port 4	
12	Remote Close	
13	Remote Open	
14	Remote Stop	

1. Open Button	0	
2. Close Button	0	
3. Stop Button	0	
<input type="button" value="↑"/>	<input type="button" value="↓"/>	<input type="button" value="Esc"/>

-----2.Sum Counter

Displays the work cycles.

Sum Counter
88
<input type="button" value="Esc"/>

-----3.Maint Counter

Displays the work cycles after maintenance.

Maint Counter
88
<input type="button" value="Esc"/>

-----4.Fault Memory

Displays the error history.

01. ERR23	No	
Limit Settings		
2015-11-17	10:25	
<input type="button" value="↑"/>	<input type="button" value="↓"/>	<input type="button" value="Esc"/>

-----5.System Query

Displays the value of selected system register.

System Query 1		
0		
<input type="button" value="↑"/>	<input type="button" value="↓"/>	<input type="button" value="Esc"/>

-----6.Version

Displays the system version.

-----7.RTC Query

Displays the current date and time of the real time clock.

RTC Query
2015-11-17
12:12:12
Esc

Err

Shows the current error message.

ERR 19
Absolute Encoder
Failure
Esc

Error Table:

Error Code	Content
ERR01	Over current
ERR03	Under Voltage
ERR04	Over Voltage
ERR05	Over Voltage
ERR06	Locked Rotor
ERR07	Out Of Limit Position
ERR08	EEPROM Failure
ERR09	Over Speed
ERR10	Motor Reversion
ERR11	Overload
ERR12	Sample Current Failure
ERR13	Motor Encoder Failure
ERR14	Initial Rotor Angle Failure
ERR15	Communication Failure
ERR18	Brake Circuit Failure
ERR19	Absolute Encoder Failure
ERR20	Run Time Exceeded
ERR21	Safety 1 Exceeded During Cycle
ERR22	Safety 2 Exceeded During Cycle
ERR23	No Limit Settings
ERR24	DC24V Failure
ERR26	Mechanical Limit Failure
ERR27	Overheated
ERR28	Electromagnetic Brake Fault
ERR29	Absolute Encoder Reset
ERR30	Motor Parameter Matching Fault
ERR31	Motor Encoder Failure 2
ERR32	Motor Encoder Failure 3
ERR33	Absolute Encoder Failure 2
ERR34	Absolute Encoder Reset 2
ERR35	Absolute Encoder Run Reset
ERR36	Limit Distance Too Short
ERR38	Electromagnetic Brake Fault 2
ERR39	Motor Encoder Failure 4
ERR40	Motor Encoder Failure 5
ERR41	Absolute Encoder Position Unstable
ERR42	Motor Dir Err In Limit Setting
ERR43	Proximity Switch Too Close
ERR44	Limit Distance Too Long
ERR45	Absolute Encoder Dir Failure

ERR47	Limit HALL Value Not Match
ERR48	Abnormal Door Position
ERR49	Limit Abnormal
ERR50	Motor Thermal Protect
ERR51	Drive Thermal Protect
ERR53	Electromagnetic Brake Error 3
ERR54	System Matching Fault
ERR55	IPM Thermal Protect
ERR56	Out Of Door Track

Port Table:

Port Table Of Motor:

Port	Function	Remark
L1	L1	AC220V input, connect to controller.
N1	N1	
PE	PE	
B1	Motor signal input	connect to controller
B2		
B3		
S1		

Port Table Of Controller:

Port	Function	Remark
L	L	1N~AC220V input
N	N	
PE	PE	
L1	L1	1N~AC220V output, connect to motor
N1	N1	
PE	PE	
B1	Motor signal output	Connect to motor
B2		
B3		
S1		
1	Manual open input ¹⁾	NO
2	Manual close input ¹⁾	NO
3	Manual stop input ¹⁾	NO
4	COM/GND	
5	DC+24V	
6	Safety input 2 ¹⁾	NO(Safety edge, photocell, etc), reverse to open limit when closing
7	COM/GND	

8	Open button input	8 and 9 short connected. If you need to provide a open button for other equipment to use, disconnect the short circuit, 9 and COM connect to other equipment
9	Open button output	
10	Close button output	10 and 11 short connected. If you need to provide a close button for other equipment to use, disconnect the short circuit, 10 and COM connect to other equipment
11	Close button input	
12	Emergency stop input ¹⁾²⁾	NC, Multifunction port 1
13	COM/GND	
14	DC+24V	
15	Automatic open input ¹⁾²⁾	NO, Multifunction port 2
16	Partial open input ¹⁾²⁾	NO, Multifunction port 3
17	Interlock input ¹⁾²⁾	NO, Multifunction port 4
18	COM/GND	
19	RS485+	
20	RS485-	
21	COM/GND	
22	DC+24V	
23	COM/GND	
24	Output 1A	NO, refer to "Output 1 config"
25	Output 1B	
26	Output 2A	NO, refer to "Output 2 config"
27	Output 2B	

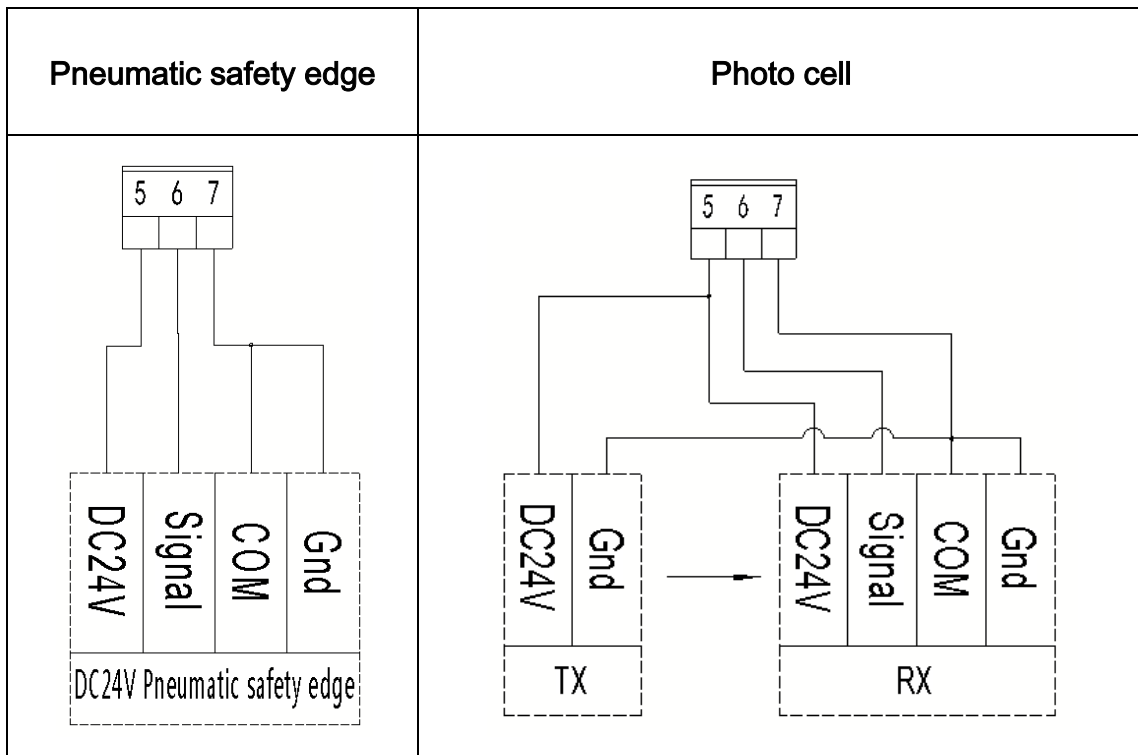
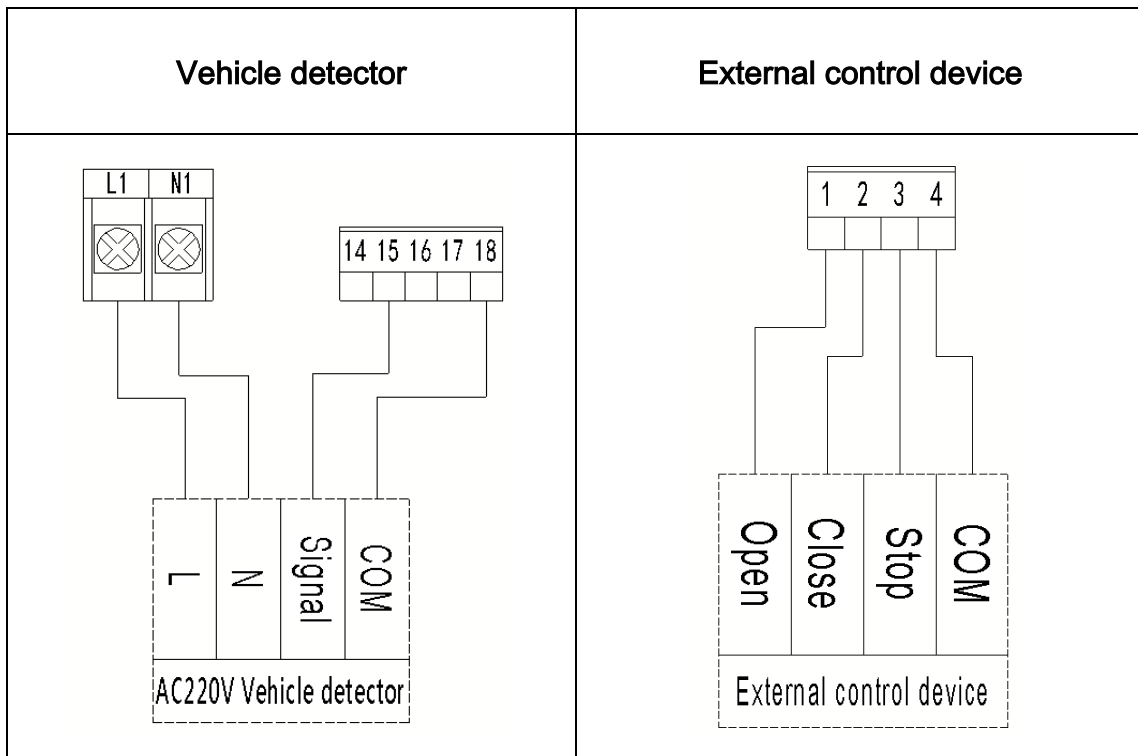
1) The NO/NC state of the input port can be modified by setting relevant parameters.

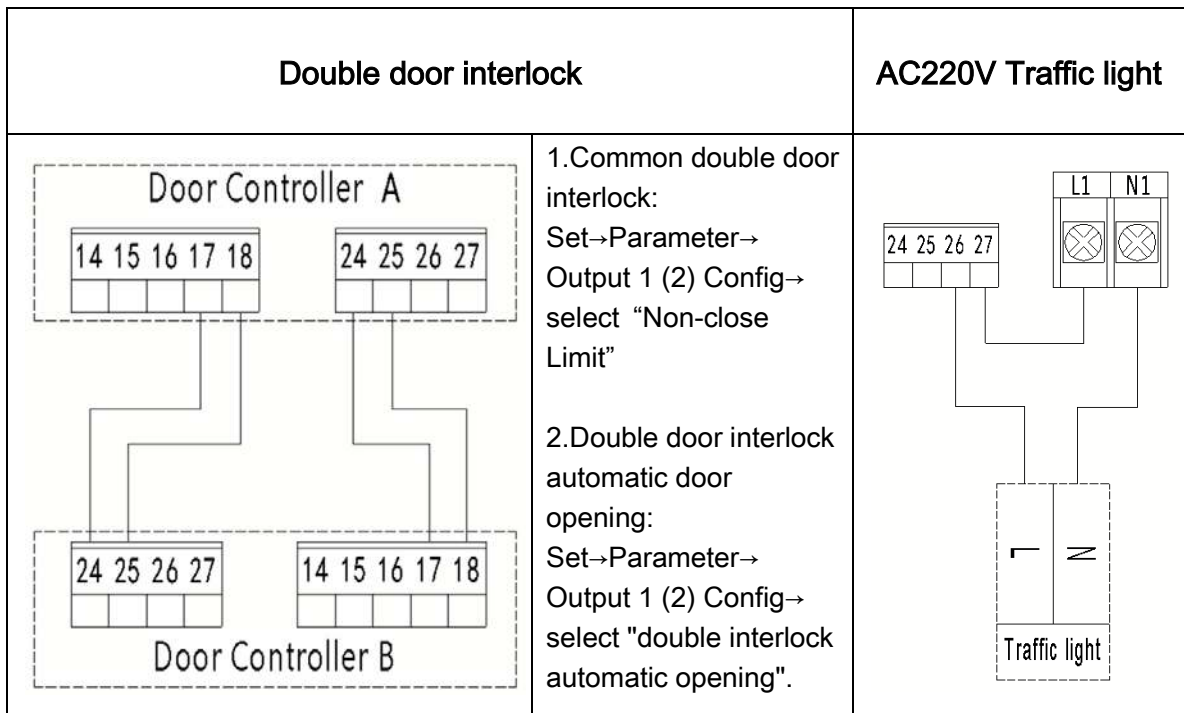
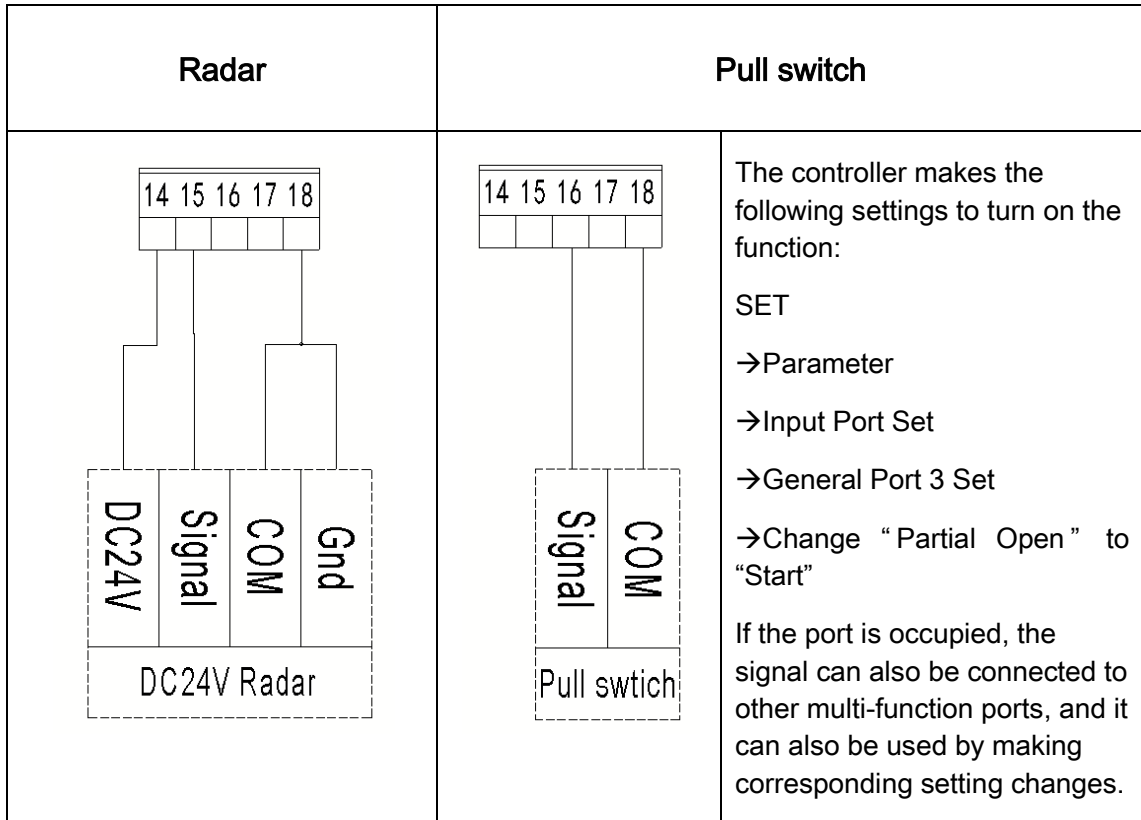
2) Multifunction ports can be defined as other functions by modifying parameters.

SET->Parameter->Input Port Set-> General Port (1-4) Set

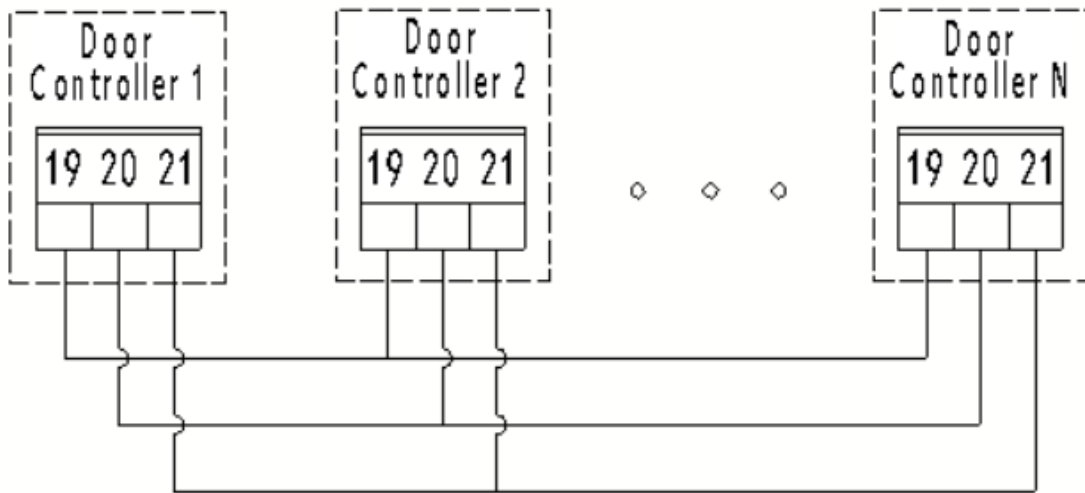
No.	Function	No.	Function
0	Manual Open	8	Start
1	Manual Close	9	Open Limit
2	Manual Stop	10	Close Limit
3	Emergency Stop	11	Inter Lock
4	Safety Sig 1	12	Mode Signal
5	Safety Sig 2	13	Fire Alarm
6	Auto Open	14	Out of Door
7	Partial Open	15	Ext Close

Advanced electrical installation



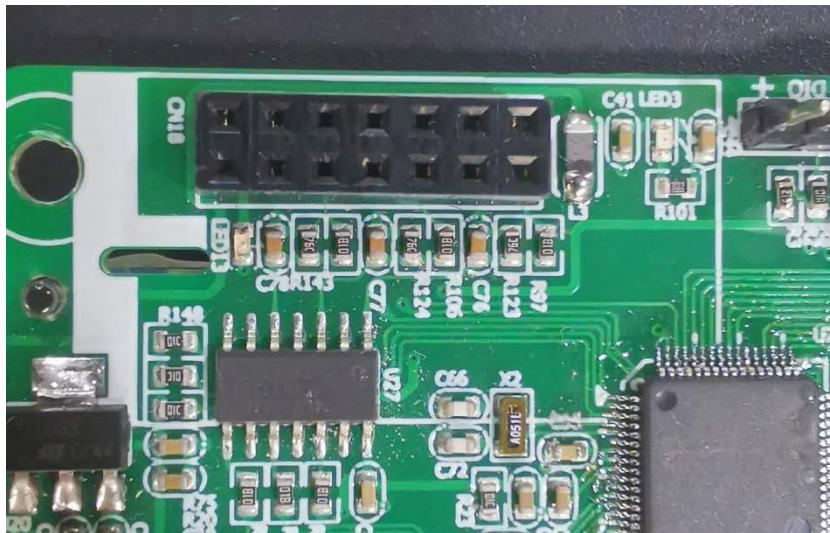


RS485 Multi-door interlock



Each controller that needs to be interlocked must be set as follows to enable this function:
Set→Parameter→RS485 Interlock→ON

Radio receiver (optional)



Insert the built-in radio receiver board into the 2x7 socket in the upper left corner of the circuit board above, and the insertion direction is consistent with the white box; Then make the following settings to turn on the function:

SET→Parameter→Wireless Remote→On



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