# Sectional Door Servo

# Control System

## ( AC220V )

C Series

336000169 V1.3

Contents

## Introduction

Thank you for choosing Sectional Door Servo Contról 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 some 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 shot 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 counterbalanced sectional doors.
The system is in compact package, with high torque and high operating speed, lower noise, high reliability, smooth and soft operating curves.
The system curtain can be controlled by wall switch, push button, bluetooth, radar, safety edge, photo eye, induction loops, etc.

## Specification

### Specification for Controller

| | | | |
|---|---|---|---|
| Model | DW4 | DW4-1 | |
| Enclosure material | ABS | | |
| Dimension(L*W*H) | 303x123x145 | 300x190x144 | 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 | 12 | | VDC |
| | 0.4 | | A |
| Ambient temperature | -20 ~ +50 | | ℃ |
| Storage temperature | -25 ~ +55 | | ℃ |
| Ambient humidity | 30%-85%, No condensation | | |
| Place of use | Indoor, no direct sunlight, no dust, corrosive gas, oil mist, water vapor, etc. | | |
| Weight(net) | 1.0 | 1.0 | Kg |

## Specification for Motor

| Model | C40 | C60 | C90 | C120 | |
|---|---|---|---|---|---|
| Rated Output Torque | 40 | 60 | 90 | 120 | Nm |
| Rated Output Speed | 30 | | | | RPM |
| Motor power | 0.45 | 0.65 | 1.1 | 1.5 | kW |
| Power supply | 1N ~ AC200-240 | | | | V |
| Power frequency | 50/60 | | | | Hz |
| Power current | 4 | 6 | 10 | 13 | A |
| Hollow shaft [Φ] | 25.4 | | 25.4/31.75 | | mm |
| Ambient temperature | -20 ~ +50 | | | | ℃ |
| Storage temperature | -25 ~ +55 | | | | ℃ |
| Ambient humidity | 30%-85%, No condensation | | | | |
| IP degree | IP54 | | | | |
| Limit Mode | Absolute Encoder | | | | |
| Self Locking Mode | Gear self-braking | | | | |
| Manual Release | Rapid hand chain | | | | |
| Weight(net)[1)] | 11 | 12 | 14.5 | 15 | Kg |

1)Weight includes hand chain.

## Operating Instructions

1. Basic Function

The system can 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.

c) "STOP" Key/Button: control door to stop running.

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

e) Four key on LCD are main menu key.

3. Install limit switch

The limit switch of system 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.

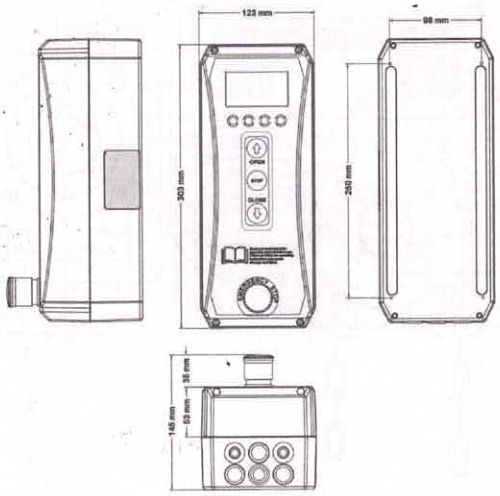
The company reserves the right to modify the product, according to improvement of technology and production process, while the basic characteristic of the product may remain some.

## Maintenance

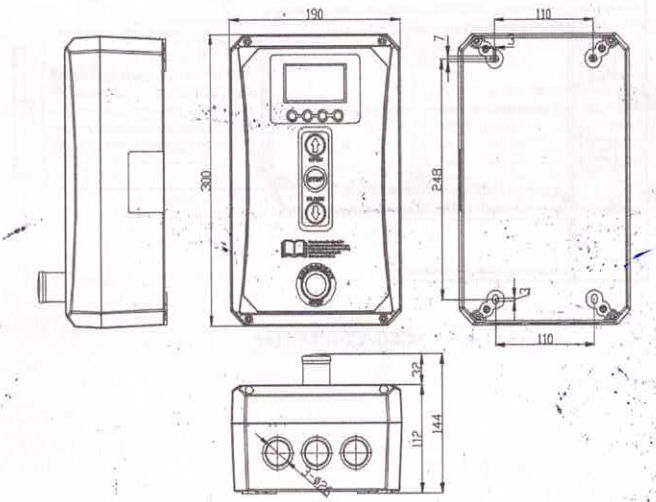
The mounting screw for the controller and motor must inspect regularly to prevent screw been getting loose and falling off. Check the internal and external wirings. Check and change the oil for the reducer on regular basis.

## Size

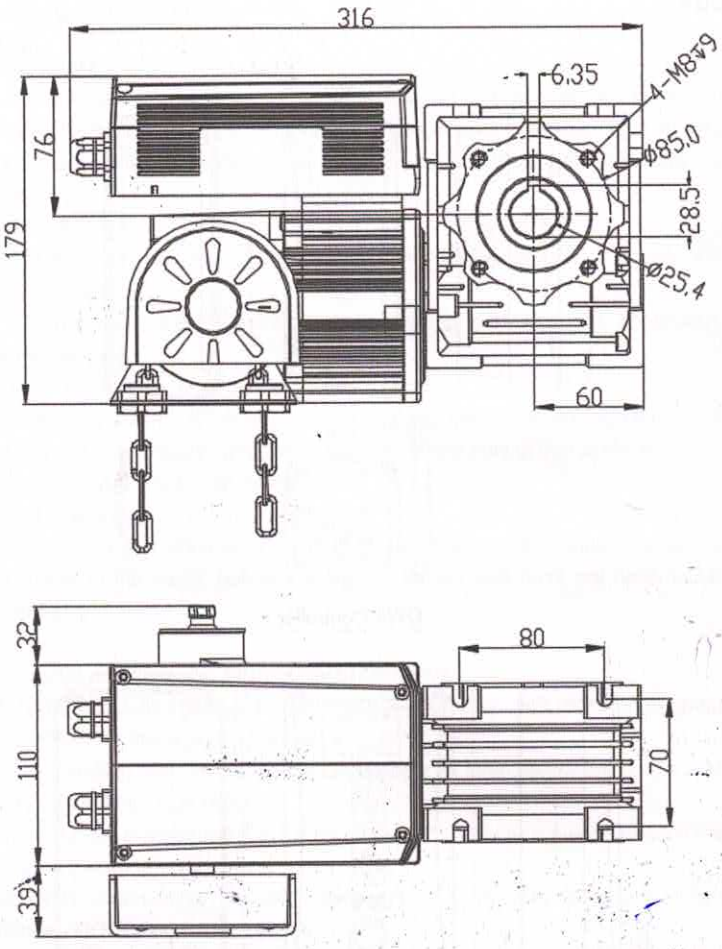
UNIT: mm



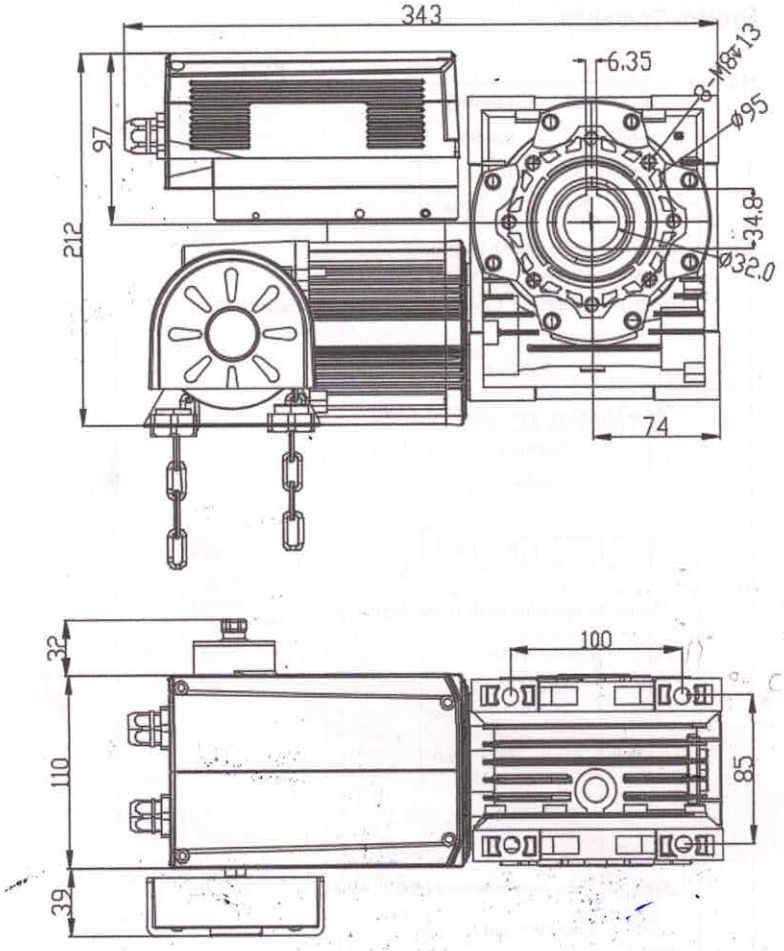

DW4 Controller




DW4-1 Controller



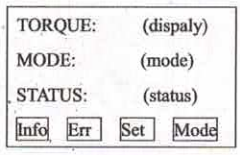

**C40/C60 Moter**




**C90/C120 Moter**

## System Operation

MAIN------

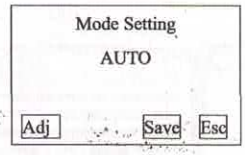



(dispaly): Torque, Speed, Position.
(mode): Auto, Jog.
(status): OK, Opening, Closing, Fault, Safety, Maintenance etc.

-----Mode

Press Mode key, input password (6668) .


Change the operation mode (Auto, Jog).




-----Set

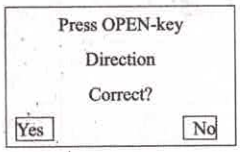
Press Set key, input password (default 6668).

——1.Parameter

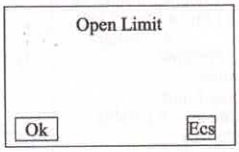
| Index | Parameter | Value | Default |
|---|---|---|---|
| 1 | Opening Speed | 20-120 | 80 |
| 2 | Closing Speed | 20-120 | 70 |
| 3 | Open Slowdown Dist | 30-500 | 50 |
| 4 | Close Slowdown Dist | 30-500 | 50 |
| 5 | Auto Closing Time | • 0:Disable<br>• 1-240 s | 0 |
| 6 | Output 1 Config | • Non-close Limit • Close Limit<br>• Non-open Limit • Open Limit<br>• Opening • Closing<br>• Non-limit Position<br>• Limit Position<br>• Reach Close Limit<br>• Fault Warning • Disable | Disable |
| 7 | Output 2 Config | •Double Interlock<br>Automatic Opening<br>• Running • Stopped<br>•E-Stop State<br>•Auto Closing Countdown<br>•Delayed Opening Countdown<br>•Safety Signal<br>•Normal State Output | Disable |
| 8 | Partial Opening | 10-100% | 100 |
| 9 | Safe Signal Height | Set the current position of the door to the failure height of safety signal | |
| 10 | Display Config | • Position<br>• Speed<br>• Torque | Torque |
| 11 | Backlight Setting | • 3 minute auto Off<br>• Signal Wake_up<br>• 60 minute power saving<br>• 60 minute auto off<br>• Always On | Signal Wake_up |
| 12 | Auto Anti Frozen | • Off<br>• 1-999 min | Off |
| 13 | Wireless Remote | • Off<br>• On | Enable |
| 14 | Safety Edge Set | • Disable<br>• Open cmd<br>• Stop cmd | Disable |
| 15 | Input Port Set | 1.General Port Set | Pedestrian Door |
| | | 2.Manual Open Set | Enable |
| | | 3.Manual Close Set | Enable |
| | | 4.Manual Stop Set | Enable |
| | | 5.Safety Sig Set | Enable |
| | | 6.E-Stop Set | Enable |

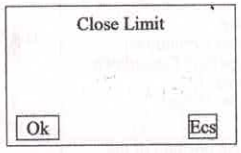
-----2.Limit Switch Setting

Choose the open direction.

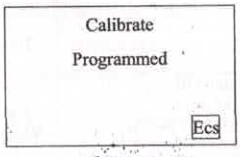



Next, we shall set the Open and Close Limit.

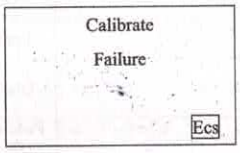



Finally, we will see the result.



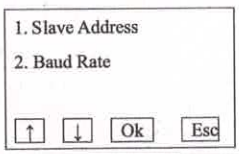

or

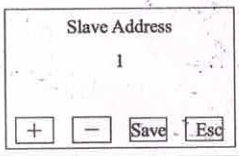


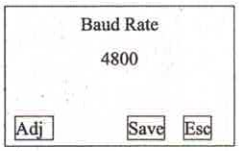

-----3.Advanced Setting

------1.Communication

Set RS485 slave address and baudrate.



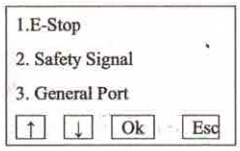



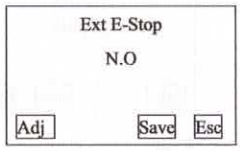



-----2.Contact Type

Set the contact type.

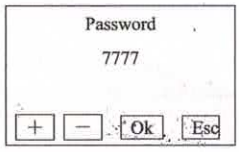
| Index | Parameter | Value | Default |
|---|---|---|---|
| 1 | E-Stop | N.O / N.C | N.C |
| 2 | Safety Signal | N.O / N.C | N.O |
| 3 | General Port | N.O / N.C | N.O |



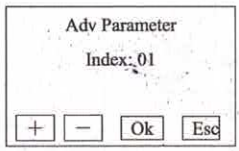




-----3.Adv Parameter

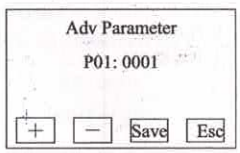
First, input password (7779).




Select the parameter index.



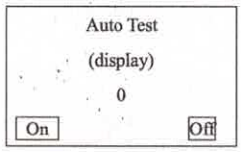

Change the parameter value.



------4.System Config

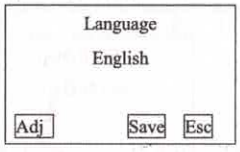
------5.Auto Test

Run the system auto testing.



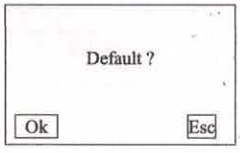

------4.Language

Set the system language.




------5.Default

Restore factory settings.

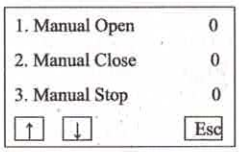



-----Info

------1.Input Query

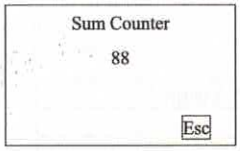
Displays the input states.

| Index | Port | State |
|---|---|---|
| 1 | Manual Open | 0: No Signal<br>1: Has Signal |
| 2 | Manual Close | |
| 3 | Manual Stop | |
| 4 | Ext E-Stop | |
| 5 | General Port | |
| 6 | Safety Signal | |
| 7 | Remote Open | |
| 8 | Remote Close | |
| 9 | Remote Stop | |
| 10 | Safety Edge | |



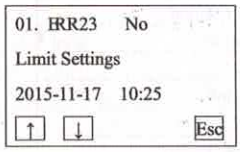

------2.Sum Counter

Displays the work cycles.



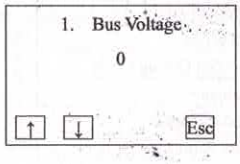

------3.Fault Memory

Displays the error history.




------4.System Query

Displays the value of selected system register.

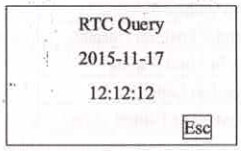



------5.Version

Displays the system version.

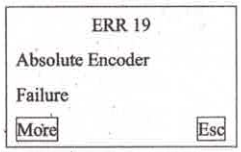
------6.RTC Query

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



Err

Shows the current error message.




## 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 |
| ERR19 | Absolute Encoder Failure |
| ERR20 | Run Time Exceeded |
| ERR22 | Safety Exceeded During Cycle |
| ERR23 | No Limit Settings |
| ERR29 | Absolute Encoder Reset |
| 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 |
| ERR39 | Motor Encoder Failure 4 |
| ERR40 | Motor Encoder Failure 5 |
| ERR41 | Absolute Encoder Position Unstable |
| ERR42 | Motor Dir Err In Limit Setting |
| 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 |

## Port Table:

**Port Table Of Controller:**

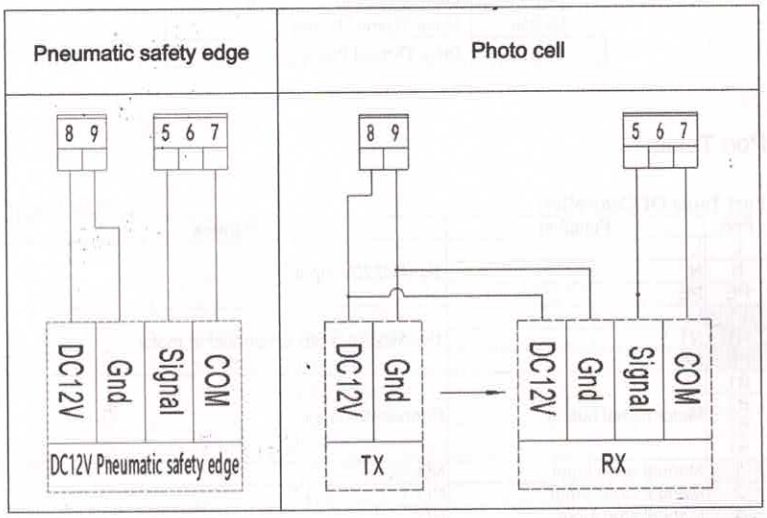
| Port | Function | Remark |
|---|---|---|
| L | L | 1N~AC220V input |
| N | N | |
| PE | PE | |
| L1 | L1 | 1N~AC220V output, connect to motor |
| N1 | N1 | |
| PE | PE | |
| B1 | Motor signal output | Connect to motor |
| B2 | | |
| B3 | | |
| S1 | | |
| 1 | Manual open input | NO |
| 2 | Manual close input | NO |
| 3 | Manual stop input | NO |
| 4 | COM/GND | |
| 5 | Safety input[1)] | NO(Safety edge, photocell, etc), reverse to open limit when closing |
| 6 | Pedestrian Door[1)] | NO, Multifunction port |
| 7 | COM/GND | |
| 8 | DC+12V | Maximum output current 0.4A |
| 9 | COM/GND | |
| 10 | Emergency stop input[1)] | NC |
| 11 | 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 | |

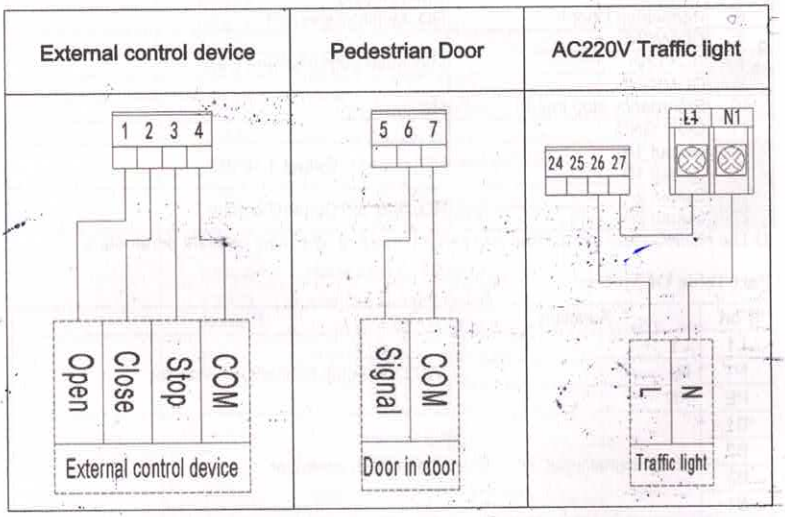
1) The NO/NC state of the input port can be modified by setting relevant parameters.

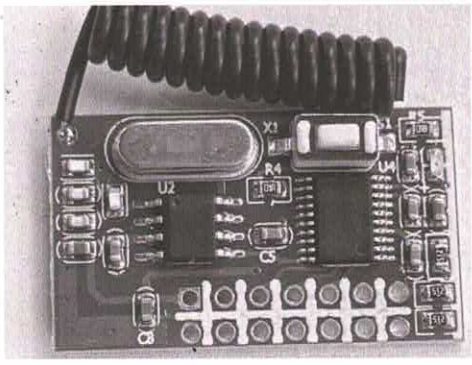
**Port Table Of Motor:**

| Port | Function | Remark |
|---|---|---|
| L1 | L1 | AC220V input, connect to controller |
| N1 | N1 | |
| PE | PE | |
| B1 | Motor signal input | Connect to controller |
| B2 | | |
| B3 | | |
| S1 | | |
| S2 | Hand chain safety input | Connect to chain safety sensor |
| S3 | | |

## Advanced electrical installation



| Radio receiver |
| --- |
|  |
| SET→Parameter→Wireless Remote→Enable |
| Learning:<br>After powering on, press the button on the receiver. The red LED indicator on the receiver will remain lit. Then, press and hold the up button on the transmitter until the red LED indicator on the receiver flashes three times and then turns off. The Learning is complete when you release the button.<br>Cleaning:<br>Press and hold the receiver button, the LED indicator light stays on until it flashes twice and then turns off. Release the button after the code clearing is completed. |