DIGITAL LIMIT SWITCH

SPEEDY BARRIER
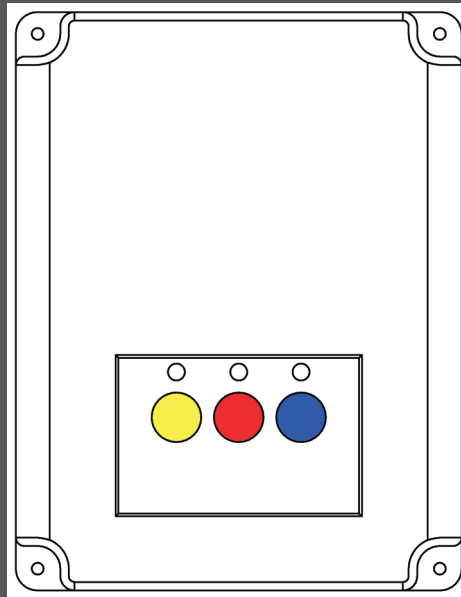
**PLEASE READ THE MANUAL CAREFULLY
BEFORE INSTALL AND USE**

GRITAL GROUP

⚠ Warnings to installers and users

1. Before installation and use, please read this Manual carefully.

2. Avoid installing the product where there are vibrations, high-temperature, high-humidity, flammable, explosives, dust or corrosive gases.

3. As there is high voltage electricity inside the product, non-professionals should not arbitrarily open the lid to avoid electric shock. For debugging, look for professionals for help.

4. For loss and damage due to unauthorized changes to the original design of the product, the original manufacturer will assume no liability or responsibility.

5. An air-break switch must be connected with the power supply input connector.

6. Before power on and debugging controller, manually adjust the barrier to the middle position.

7. The power must be cut off before manually operate the barrier.

8. Make sure that the path is unobstructed when the barrier is running.

9. Safety devices such as Air-wave switch and Photocell are highly recommended. Check and test them periodically to ensure that they are effective.

10. Please properly dispose the accessories including plastic bag and screws to avoid the hazards such as mistaking and chocking.

11. Please keep this Manual properly for reference.

1. Descriptions

1.1 Descriptions of Panel
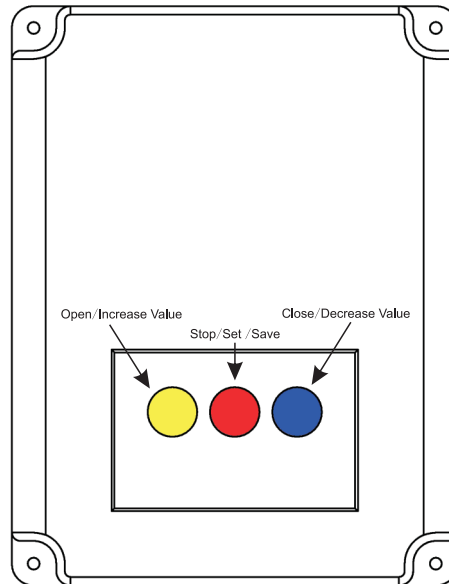
1.2 Technical Specifications

Power supply	AC 220V 50/60Hz
Standby power	<2W
Output power	750W
Operating temperature	-20℃～50℃
Storage temperature	-30℃～70℃
Humidity range	<90%

1.3 Definitions of Buttons

Yellow — Open/Increase Value

Red — Stop/Set/Save

Blue — Close/Decrease Value

Dip switch

Digital Display Tube

Remote controller learning

ANT
GND

OUTPUT1 | CM1 | NC1 | NO1 — Opened statu output

OUTPUT2 | CM2 | NC2 | NO2 — Closed statu output

485 | +V | B | A | GND

INPUT2 | PT | LOOP | PHO | +12V | GND
PT Indicator
LOOP Indicator
PHOTO Indicator

Photo

INPUT1 | COM | STP | CLS | OPN

FUSE 5A

| AC220V INPUT | | | MOTOR | | |
| AC-L | AC-N | | L1 | COM | L2 |

LIGHT
NO | COM | NC

| GND | A | B | +V |
ENCODER

live wire

Neutral wire

PE

M

E

Blue

Green

Yellow

3. Main Features

3.1 Digital positioning, high precision, easy setting.
3.2 Intelligent self-checking and self-protection.
3.3 Delay automatic closing function.
3.4 Safety protection function is available by the
     external sensors.
3.5 Remote control.
3.6 Counter mode.

4. Remote controller operation

a)   Learning transmitter code
    Press "LEARN" button which on the main board for one
time, the LED will light, then press the button you desire on the
transmitter for one time, the LED will flash. Repeat these steps for more
transmitters.

> Note: 1、The original transmitters has been matched the code, and users
>   do not need to do this.
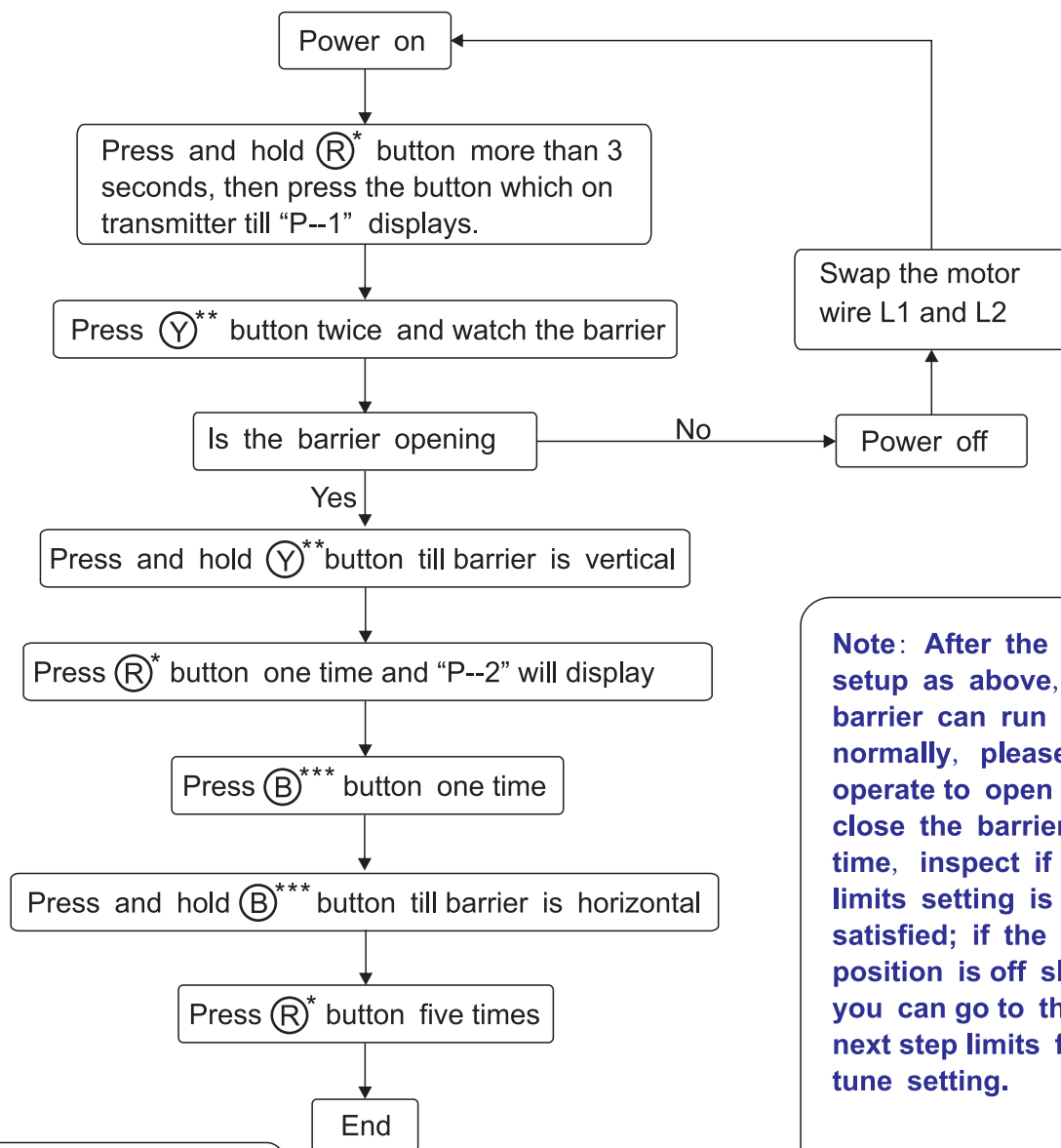>   2、New transmitters need to be set the steps as above.

b)   Erasing transmitter code
    If the transmitters are lost or illegally copied, please make
the operation of erasing code to clear all codes that stored in
the control box, after the operation, no transmitter can control
the barrier.
    Press and hold the"LEARN" button to light the LED till go out.
Now, all stored codes of transmitters are erased.

5. Limits setting

Note: For the controller initially installed, manually adjust barrier to middle position before power on.

Power on

Press and hold (R)* button more than 3 seconds, then press the button which on transmitter till "P--1" displays.

Press (Y)** button twice and watch the barrier

Is the barrier opening → No → Power off

Swap the motor wire L1 and L2

Yes

Press and hold (Y)** button till barrier is vertical

Press (R)* button one time and "P--2" will display

Press (B)*** button one time

Press and hold (B)*** button till barrier is horizontal
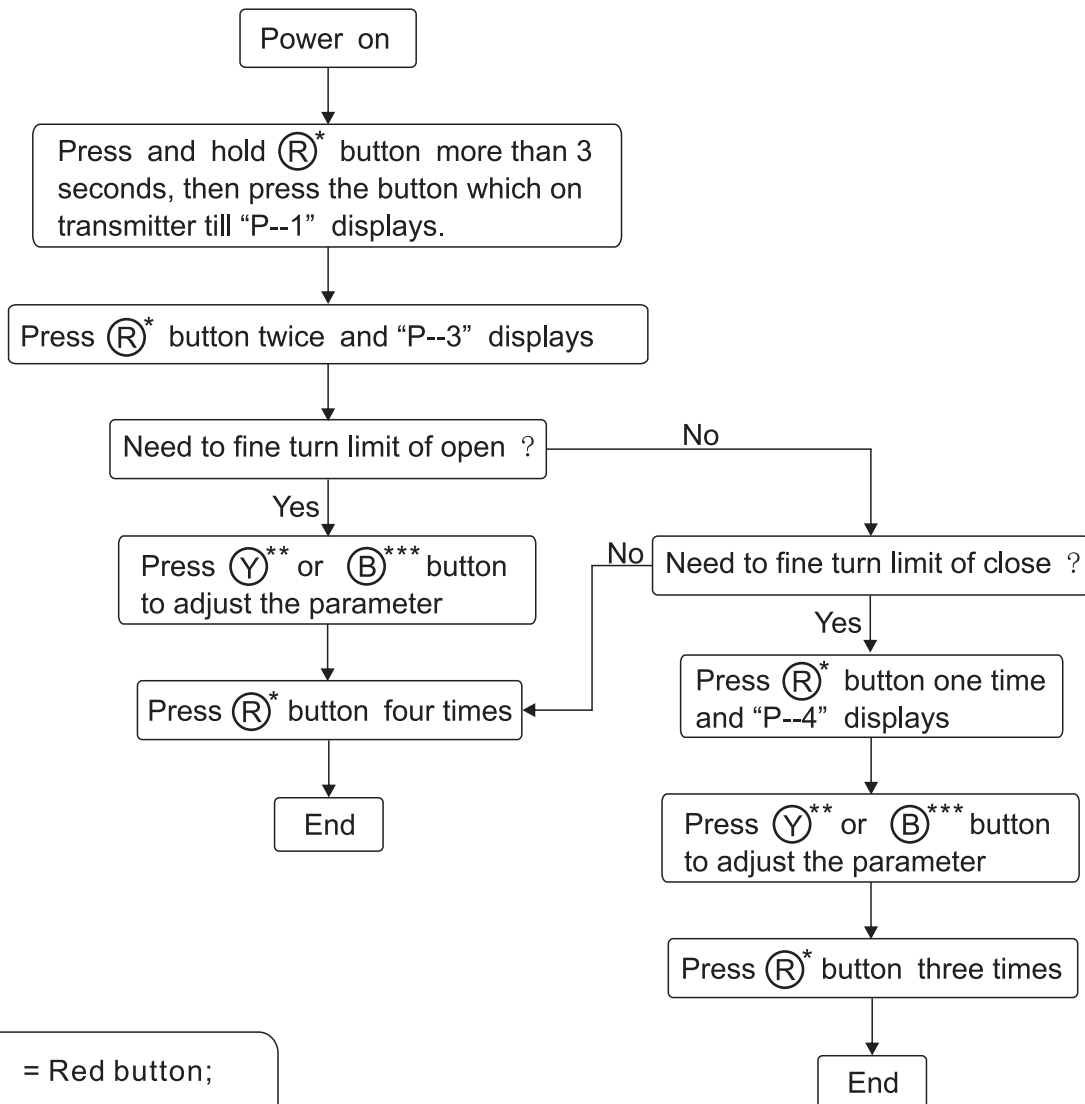
Press (R)* button five times

End

Note: After the quick setup as above, the barrier can run normally, please operate to open and close the barrier each time, inspect if the limits setting is satisfied; if the position is off slightly, you can go to the next step limits fine-tune setting.

(R)* = Red button;
(Y)** = Yellow button;
(B)*** = Blue button;

6. Limit fine-tune Settings

Note: if you expect the boom to stop behind the original set position, please press $Ⓨ^{**}$ button;

if you expect the boom to stop before the original set position, please press $Ⓑ^{***}$ button.

Power on

Press and hold $Ⓡ^*$ button more than 3 seconds, then press the button which on transmitter till "P--1" displays.

Press $Ⓡ^*$ button twice and "P--3" displays

Need to fine turn limit of open ?   No

Yes

Press $Ⓨ^{**}$ or $Ⓑ^{***}$ button to adjust the parameter

No   Need to fine turn limit of close ?

Yes

Press $Ⓡ^*$ button one time and "P--4" displays

Press $Ⓡ^*$ button four times

End

Press $Ⓨ^{**}$ or $Ⓑ^{***}$ button to adjust the parameter

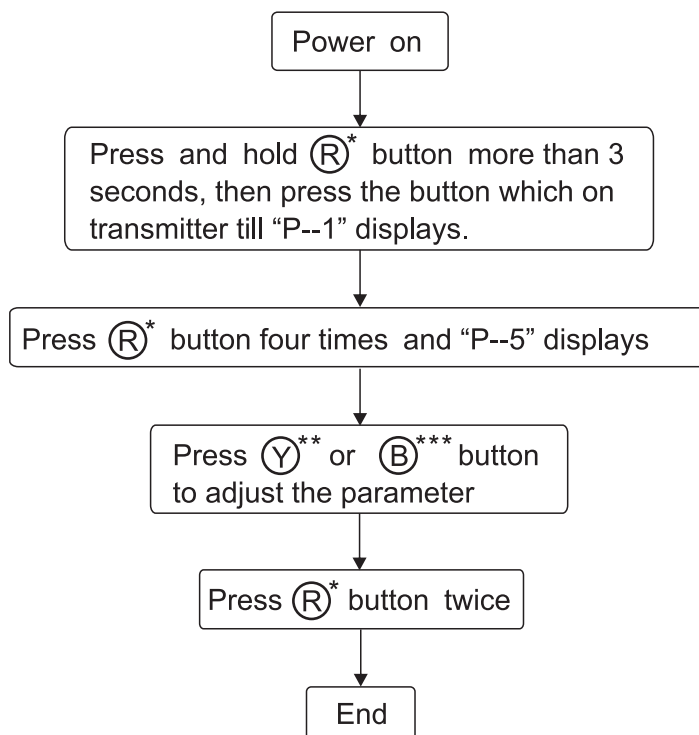Press $Ⓡ^*$ button three times

End

$Ⓡ^*$ = Red button;
$Ⓨ^{**}$ = Yellow button;
$Ⓑ^{***}$ = Blue button;

7. Delay automatically close setting

Function description: The boom will automatically close after a set time when the barrier open fully.

Note1: The factory default value is "0", means that the function is cancelled.
Note2: The maximum delay value is 99 seconds.

Power on

↓

Press and hold R^* button more than 3 seconds, then press the button which on transmitter till "P--1" displays.

↓

Press R^* button four times and "P--5" displays

↓

Press Y^{**} or B^{***} button to adjust the parameter

↓

Press R^* button twice

↓

End

Note: Press and hold Y^{**} or B^{***} button, the parameter will increase or decrease .
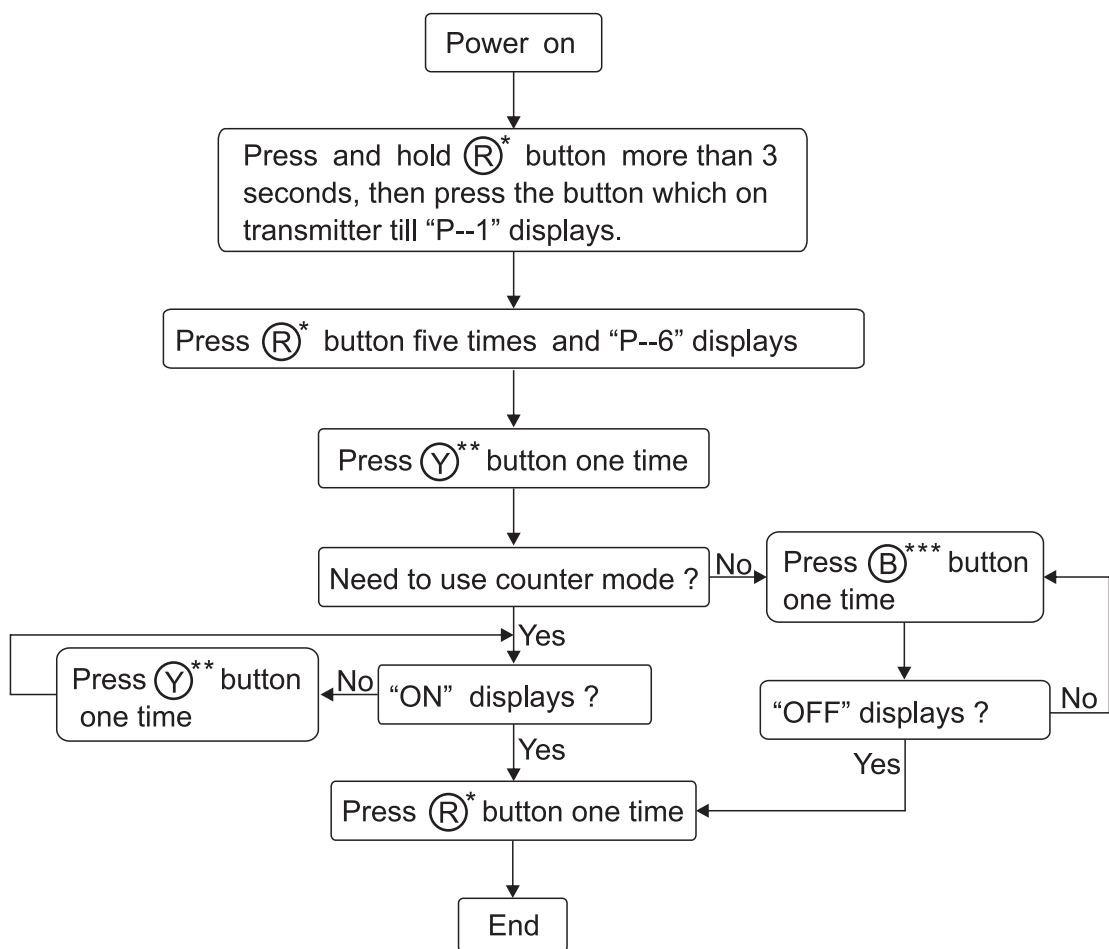
R^* = Red button;
Y^{**} = Yellow button;
B^{***} = Blue button;

8. Counter mode setting

Function description: When there are multiple open signals, the boom will not close until the same amount of vehicles as the signal's pass the loop.
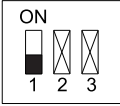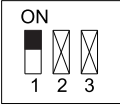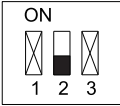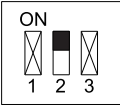
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                          ┌─────────────┐
                          │  Power  on  │
                          └──────┬──────┘
                                 │
      ┌──────────────────────────▼──────────────────────────┐
      │ Press  and  hold Ⓡ＊ button  more than 3             │
      │ seconds, then press the button which on              │
      │ transmitter till "P--1" displays.                    │
      └──────────────────────────┬──────────────────────────┘
                                 │
      ┌──────────────────────────▼──────────────────────────┐
      │ Press  Ⓡ＊ button five times  and "P--6" displays    │
      └──────────────────────────┬──────────────────────────┘
                                 │
            ┌────────────────────▼────────────────────┐
            │ Press Ⓨ＊＊ button one time              │
            └────────────────────┬────────────────────┘
                                 │
            ┌────────────────────▼──────────┐  No   ┌────────────────────────┐
            │ Need to use counter mode ?    ├──────►│ Press Ⓑ＊＊＊ button    │◄──┐
            └────────────────────┬──────────┘       │ one time               │   │
                                 │ Yes                └───────────┬────────────┘   │
  ┌──────────────┐  No  ┌────────▼────────┐                       │                │
  │ Press Ⓨ＊＊   │◄─────┤ "ON"  displays ?│          ┌────────────▼────────┐  No  │
  │ button       │      └────────┬────────┘          │ "OFF" displays ?    ├──────┘
  │ one time     │               │ Yes               └────────────┬────────┘
  └──────────────┘      ┌────────▼──────────────────┐          Yes │
                        │ Press Ⓡ＊ button one time  │◄─────────────┘
                        └────────┬──────────────────┘
                                 │
                          ┌──────▼──────┐
                          │     End     │
                          └─────────────┘
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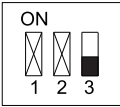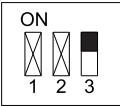
Ⓡ＊   = Red button;

Ⓨ＊＊ = Yellow button;

Ⓑ＊＊＊ = Blue button;

9. Dip switch setting

Lamp mode setting	ON ■□□ 1 2 3	Please set as left figure if an alarm lamp is connect.	Please set as right figure if a red/green lamp is connect.	ON ■□□ 1 2 3
Selection of protection signal type (Normally open or Normally close)	ON □■□ 1 2 3	Please set as left figure if the output signal from protector is normally open. The protector is photocell, air wave, loop, etc.	Please set as left figure if the output signal from protector is normally close. The protector is photocell, air wave, loop, etc.	ON □■□ 1 2 3
Selection of display mode	ON □□■ 1 2 3	Please set as left figure if you want it to display the running status of the barrier.	Please set as left figure if you want it to continuously display the encoder value.	ON □□■ 1 2 3

10. Error Codes Table

Code	Meaning	Solution
Err1	Encoder signal is invalid	Check the signal wires and connectors
Err2	Barrier operation timeout	Check the mechanical system
Err3	Motor Locked Rotor	1. Check the mechanical system 2. Check motor wires connectors
Err7	Photocell is triggered	Remove the object that block the photocell
Err8	Air wave is triggered	Remove the object that block the air wave
ErrA	Parameter of limit is invalid	Set parameter "P--1" & "P--2" again, refer to page 6.