User Manual of 600 series Radio Remote Control

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Contents

Introduction

600 series wireless remote control system,which is easily used, can be alone applied in different working condition and industry equipment system, such as automatic controlling. It can ensure safety requirement of modern industry. Through many years professional knowledge and technical experience on Industry communication field, Faryuan keep on develop and make technology first, try to be a leader of wireless remote control field.

The design of 600 series wireless remote control system, is based on the maximal safeguard for the user ,and can pass kinds of interfere test of complex condition .

CE Registration No.: VT09047176

- The major features of radio 600 series are as follow

  ◆ The system uses advanced microprocessors with highly evolved software that has redundant error checking and correcting capabilities to ensure 100% error–free transmission, decoding, and control of all output relays.

  ◆ The typical character of 600 series wireless remote control system includes system parts self–diagnosing function.the transmitter has communication check function and know the situation between transmitter and receiver(for the detailed , see the manual)

◆ 600 series wireless remote control system, no matter transmitter or Receiver can be matched according to sepical operation.(for the detailed , see the manual)

◆ With more than 250 noninterference and different RF channel,it can guarantee many machines be operated at the same time in the same area.

◆ The Degrees of protection of receiver and transmitter can be above IP65 with good configuration.The transmitter can be used outside completely against the water come in, as the degrees of protection of water–proof and dust–proof can be reached IP–66.The receiver is ensure to be used in bad environment as IP65.

◆ The life of batteries can be used more with lower transmit power.Use 2 pcs "AA" batteries in the trasmitter to make sure at least transmit 100 hours in the smallest distance.

Safety Instruction

600 series wireless remote control system are relatively simple to use, however, please read manual before installation,and operate with correct procedure. It can bring good effect with correct installtion and use 600 series wireless remote control system.

The points should be followed when using

◆ Check the transmitter casing and pushbuttons daily.Should any damage be found,the unit should be removed from service.

◆ The transmitter voltage should be checked.If the voltage is low(red status light blinking or completely off),the batteries should be replaced. If the transmitter is not used for a long time, please take out the batteries and keep it safe。

◆ The red emergency stop button should be checked daily to ensure it is in proper working .If any question, the receiver should be prohitted to use.

◆ Turn the power switch “off” after each use to avoid the mis–operation.

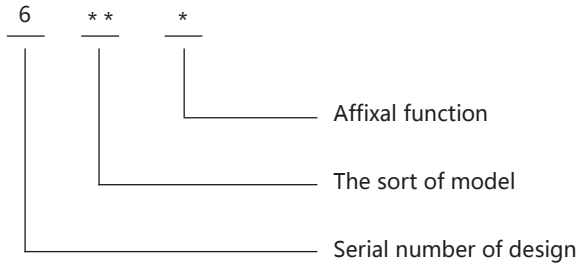
◆ Before starting, please confirm whether the red emergency stop button(EMS) is turned on.

◆ Do not use the same RF channel and ID code as any other system in use at the same facility or test at same area.

◆ Never operate a crane or equipment with two transmitters at the same time with the same RF channel and ID code.

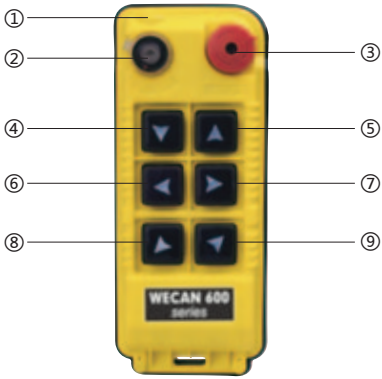
Definition of model and function introduction

★ Definition for 600 series



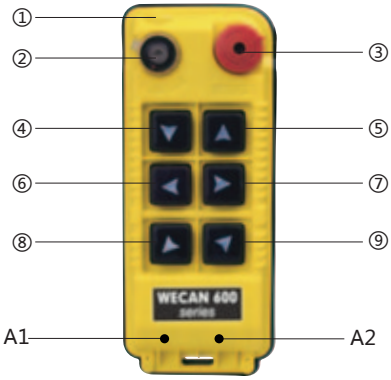
★ Introduction for functions of transmitter

● 600S： 6X one speed buttons



① Shell
② Power switch
③ EMS button
④ Down
⑤ Up
⑥ West
⑦ East
⑧ South
⑨ North

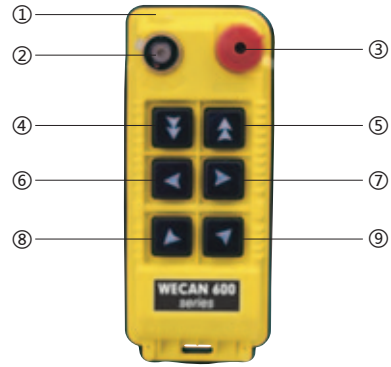
- 600A： 6X one-speed buttons+1 switchover buttons+1 interlock button



① Shell
② Power switch
③ EMS button
④ Down
⑤ Up
⑥ West
⑦ East
⑧ South
⑨ North AB AUX ,
Auxiliary Micro–button
A1: AUX Switchover button
A2: Interlock button

- 610S： 2 two-speed buttons+4 one-speed busttons

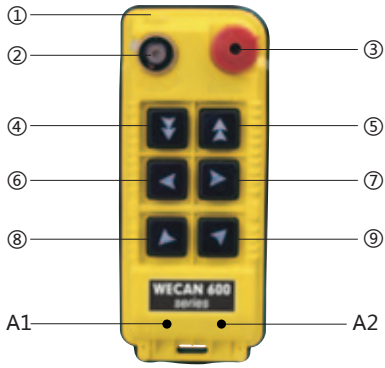
◆ Attached drawing and instruction



① Shell
② Power switch
③ EMS button
④ Down
⑤ Up
⑥ West
⑦ East
⑧ South
⑨ North

- 610A： 2 two-speed buttons + 4 one-speed buttons
  +1AUX switchover button+1interlock button

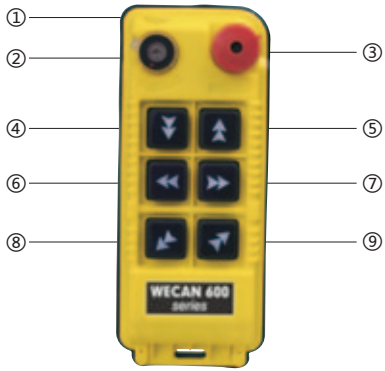
◆ Attached drawing and instruction



① Shell
② Power switch
③ EMS button
④ Down
⑤ Up
⑥ West
⑦ East
⑧ South
⑨ North AB AUX ,
Auxiliary Micro–button
A1: AUX Switchover button
A2: Interlock button

- 620S：6 two-speed buttons

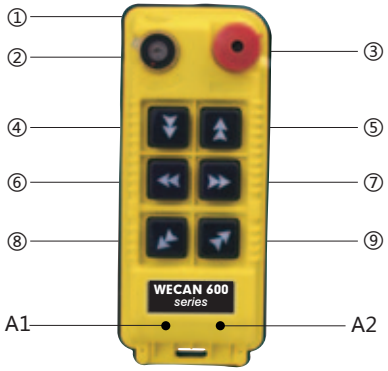
◆ Attached drawing and instruction



① Shell
② Power switch
③ EMS button
④ Down
⑤ Up
⑥ West
⑦ East
⑧ South
⑨ North

● 620A：6 directions, two speed buttons+1
AUX switchover buttons+1 interlock button

◆ Attached drawing and instruction



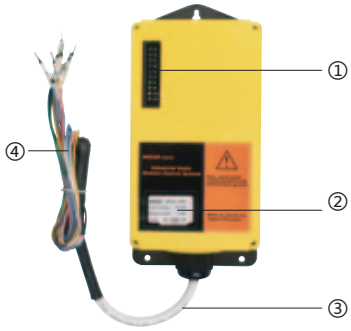
① Shell
② Power switch
③ EMS button
④ Down
⑤ Up
⑥ West
⑦ East
⑧ South
⑨ North AB AUX ,
Auxiliary Micro–button
A1: AUX Switchover button
A2: Interlock button

◆ AUX`s funtion: Turn on the power switch, A systems are under control. The transmitter will control B system if you press AUX button one time. The transmitter can control two systems at the same time if you press AUX two times.

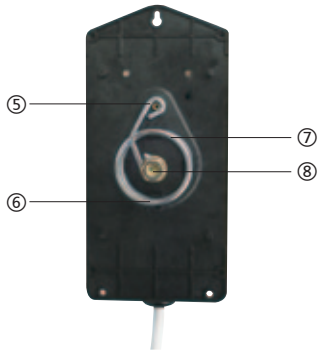
Three times , A system will be under control. The same functions as front intruction.

◆ BK function: BK button can control one relay independently . You can set its funtion according to your situation.

★ Introduction for the reciever



Front

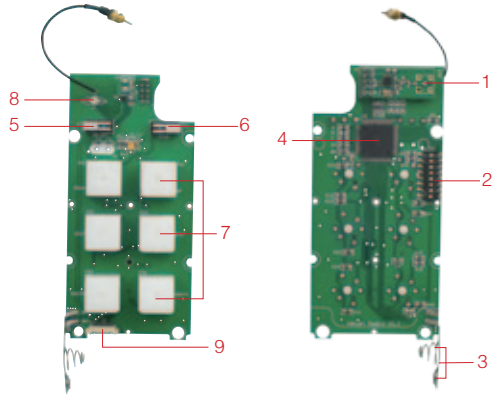


Back

① LED Indicator light ② Nameplate ③ Cable
④ The terminal of the controlbox
⑤ Fastness screws1 ⑥ Fastness screws2
⑦ Anti–vibration spring ⑧ Installation screw

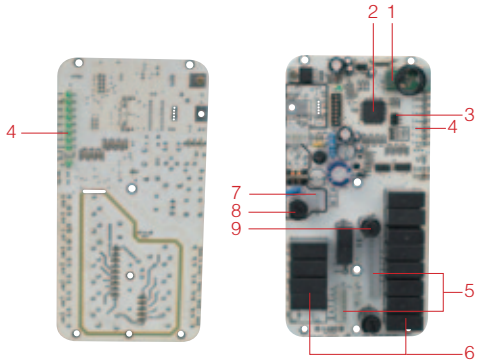
Configuration and instruction

★ Draw of Transmitter `s Configuration Transmitter



1、Wireless data module
2、IP code dip–switch
3、Battery contact
4、Micro–cpu
5、Power switch
6、EMS button
7、Double speed button
8、Indicator light

★ Receiver configuration



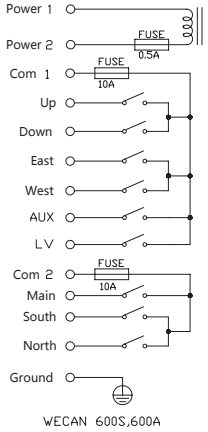
1、Wireless data module
2、Micro–cpu
3、Position for the function
4、Indicator light
5、Wire terminal
6、Relay
7、 AC power input terminal
8、1A fuse
9、 5A fuse

Wiring diagram

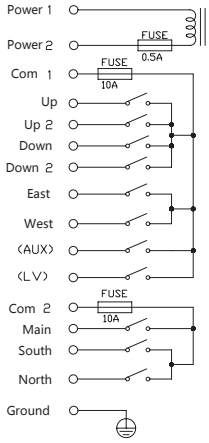
★ **600S,600A**

★ **610S,610A**

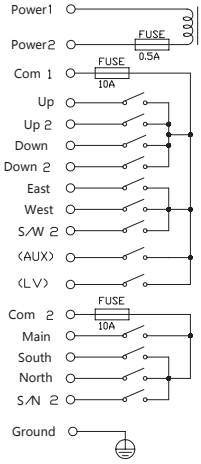
★ **620S,620A**



WECAN 600S,600A



WECAN 610S,610A



WECAN 620S,620A

Note: please install the yellow–green wire into the equipment shell rightly.

System configuration

★ How to set the jumper

The receiver has three function position (details see the picture),you can set your system function to meet your different requirement, the detailed function settings as follows:

◆ Special function settings

Join the terminal to the receiver port P3,the relay action for button B is lock form; on the contrary, the relay action for button B is acted by pressing

◆ Automatic shutoff setting

Join the terminal to the receiver port P2,the main relay will be automatically breaken after 600s by the receiver, and if no signal for the open, the receiver won't answer any command.. on the contrary, the automatic function of the receiver will be shield

◆ Master–slave setting

Join the terminal to the receiver port P1, then it is master receiver, the transmitter will control it directly. On the contrary, the receiver is slave receiver, you will switch to this receiver by "A" button.

◆ You can change the port P1 to make one is master or slave. This function is only for 600A, 610A and 620A.meanwhile,it is need to instruct whether the master or slave receiver, the relay "LV" will be closed only for the current

controlled machine. User can meet the instructions controlled by corresponding indicator to the relay

Note: please shut off the receiver power first and change the port, then it is valid to open the receiver.

★ How to set the frequency of the transmitter

Both the transmitter and the receiver, there have a 8 dial–up switch (see photo), if this address is changed ,the working frequency of the transmitter and the reciver will also be changed.

Note:

◆ Finishing the setting of dial–up swich, please cut off the power, and then it will be effective after electricity.

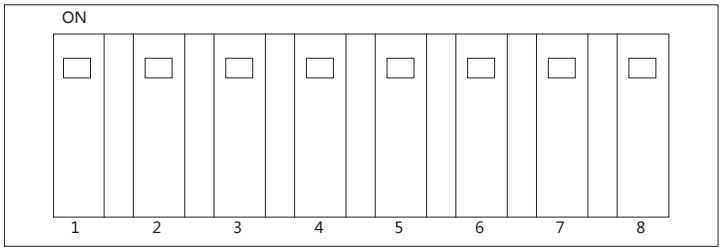
◆ 600 series supply more than 256 channels for your choice, please choose the allowed channel to operate, we promise most channels is available and reliable, but not sure every channel, if you find wrong channel, please trip off to use.

★ How to match ID code

600 series remote controllers have been set corresponding ID code. Every unit controller have the unique code. For specific needs, we allow to amend ID code. For the special customers, they can match the emitters and the receivers by themselves according to specific operation procedure.

- The following drawing is ID code programming device

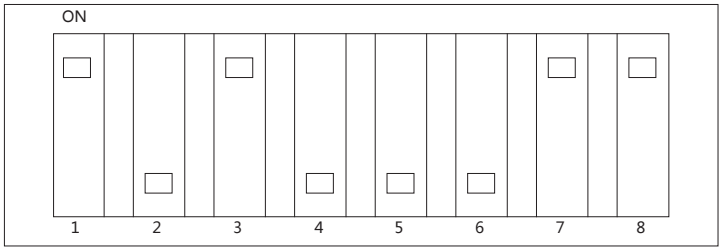
This ID code is 8–position binary system code. Every binary system code match to a unique FR channel and transmitting frequency. (Please to the Frequency and ID Code Matching Table). As the drawing shows, “1” is the bottom slot of ID code. “8” is the top slot. When every positon of the dial up switch direct to the sign “ON’, it means “0”, Or it means “1”.



ID code

For example, if you want to set the transmitting frequency to 420MHZ, you will find the corresponding ID code :00111010”. The ID code programming device will be like as follows,

ID code is the state of :00111010”.



ID code is the state of :00111010″

★ Frequency and ID Code Matching Table

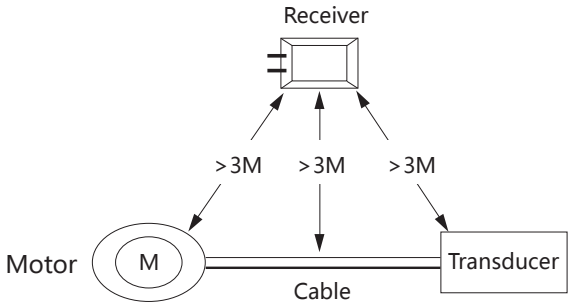
Frequency (MHZ)	ID Code	Frequency (MHZ)	ID Code	Frequency (MHZ)	ID Code	Frequency (MHZ)	ID Code	Frequency (MHZ)	ID Code
408.4	00000000	418.8	00110100	429.2	01101000	439.6	10011100	450	11010000
408.6	00000001	419	00110101	429.4	01101001	439.8	10011101	450.2	11010001
408.8	00000010	419.2	00110110	429.6	01101010	440	10011110	450.4	11010010
409	00000011	419.4	00110111	429.8	01101011	440.2	10011111	450.6	11010011
409.2	00000100	419.6	00111000	430	01101100	440.4	10100000	450.8	11010100
409.4	00000101	419.8	00111001	430.2	01101101	440.6	10100001	451	11010101
409.6	00000110	420	00111010	430.4	01101110	440.8	10100010	451.2	11010110
409.8	00000111	420.2	00111011	430.6	01101111	441	10100011	451.4	11010111
410	00001000	420.4	00111100	430.8	01110000	441.2	10100100	451.6	11011000
410.2	00001001	420.6	00111101	431	01110001	441.4	10100101	451.8	11011001
410.4	00001010	420.8	00111110	431.2	01110010	441.6	10100110	452	11011010
410.6	00001011	421	00111111	431.4	01110011	441.8	10100111	452.2	11011011
410.8	00001100	421.2	01000000	431.6	01110100	442	10101000	452.4	11011100
411	00001101	421.4	01000001	431.8	01110101	442.2	10101001	452.6	11011101
411.2	00001110	421.6	01000010	432	01110110	442.4	10101010	452.8	11011110
411.4	00001111	421.8	01000011	432.2	01110111	442.6	10101011	453	11011111
411.6	00010000	422	01000100	432.4	01111000	442.8	10101100	453.2	11100000
411.8	00010001	422.2	01000101	432.6	01111001	443	10101101	453.4	11100001
412	00010010	422.4	01000110	432.8	01111010	443.2	10101110	453.6	11100010
412.2	00010011	422.6	01000111	433	01111011	443.4	10101111	453.8	11100011
412.4	00010100	422.8	01001000	433.2	01111100	443.6	10110000	454	11100100
412.6	00010101	423	01001001	433.4	01111101	443.8	10110001	454.2	11100101
412.8	00010110	423.2	01001010	433.6	01111110	444	10110010	454.4	11100110
413	00010111	423.4	01001011	433.8	01111111	444.2	10110011	454.6	11100111
413.2	00011000	423.6	01001100	434	10000000	444.4	10110100	454.8	11101000
413.4	00011001	423.8	01001101	434.2	10000001	444.6	10110101	455	11101001
413.6	00011010	424	01001110	434.4	10000010	444.8	10110110	455.2	11101010
413.8	00011011	424.2	01001111	434.6	10000011	445	10110111	455.4	11101011
414	00011100	424.4	01010000	434.8	10000100	445.2	10111000	455.6	11101100
414.2	00011101	424.6	01010001	435	10000101	445.4	10111001	455.8	11101101
414.4	00011110	424.8	01010010	435.2	10000110	445.6	10111010	456	11101110

Frequency (MHZ)	ID Code	Frequency (MHZ)	ID Code	Frequency (MHZ)	ID Code	Frequency (MHZ)	ID Code	Frequency (MHZ)	ID Code
414.6	00011111	425	01010011	435.4	10000111	445.8	10111011	456.2	11101111
414.8	00100000	425.2	01010100	435.6	10001000	446	10011100	456.4	11110000
415	00100001	425.4	01010101	435.8	10001001	446.2	10111101	456.6	11110001
415.2	00100010	425.6	01010110	436	10001010	446.4	10111110	456.8	11110010
415.4	00100011	425.8	01010111	436.2	10001011	446.6	10111111	457	11110011
415.6	00100100	426	01011000	436.4	10001100	446.8	11000000	457.2	11110100
415.8	00100101	426.2	01011001	436.6	10001101	447	11000001	457.4	11110101
416	00100110	426.4	01011010	436.8	10001110	447.2	11000010	457.6	11110110
416.2	00100111	426.6	01011011	437	10001111	447.4	11000011	457.8	11110111
416.4	00101000	426.8	01011100	437.2	10010000	447.6	11000100	458	11111000
416.6	00101001	427	01011101	437.4	10010001	447.8	11000101	458.2	11111001
416.8	00101010	427.2	01011110	437.6	10010010	448	11000110	458.4	11111010
417	00101011	427.4	01011111	437.8	10010011	448.2	11000111	458.6	11111011
417.2	00101100	427.6	01100000	438	10010100	448.4	11001000	458.8	11111100
417.4	00101101	427.8	01100001	438.2	10010101	448.6	11001001	459	11111101
417.6	00101110	428	01100010	438.4	10010110	448.8	11001010	459.2	11111110
417.8	00101111	428.2	01100011	438.6	10010111	449	11001011	459.4	11111111
418	00110000	428.4	01100100	438.8	10011000	449.2	11001100		
418.2	00110001	428.6	01100101	439	10011001	449.4	11001101		
418.4	00110010	428.8	01100110	439.2	10011010	449.6	11001110		
418.6	00110011	429	01100111	439.4	10011011	449.8	11001111		

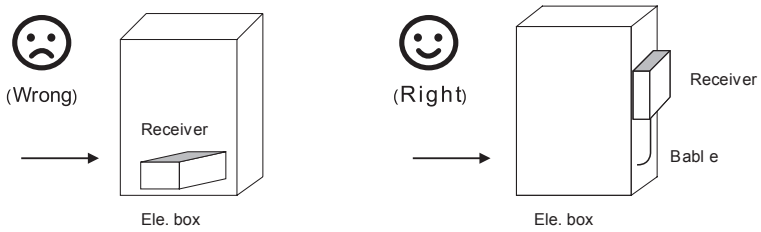
Installation instruction

★ Installation notice

- Check and confirm the control traveling crane is normal before installation.
- Turn off the power.
- For the receiver position, wherever the crane goes, it should not impact any building extruded.
- The receiver should be fixed tightly, otherwise it maybe loose and dropped.
- It should learn about the crane power and emitter' s function settings (include relay output) to avoid incorrect connection.
- The receiver position should be away from motor, transducer and cable at least 3 meters, (see following picture) to avoid unnecessary interference.

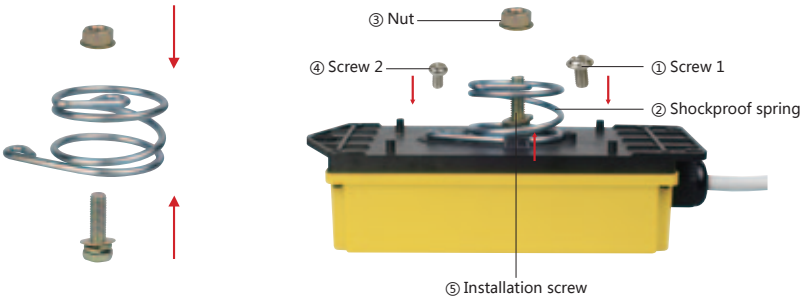


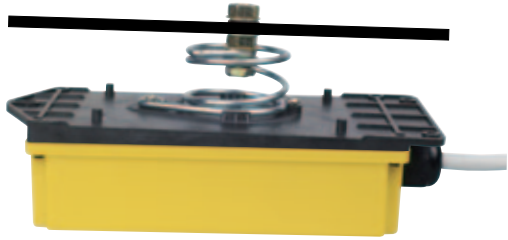
- The receiver should be at the top of the electricity box and then take the output cable into the electricity box, don’ t fix the receiver inside the box. If must be inside the box, then please install the Antenna outside the box.



★ Fasten the receiver

- Please install the receiver properly to avoid the shake





Installation of the shockproof spring

★ System test

Notice:

● please sure that all wiring is right and under good protection, all screws are tight, fix the cable between the reciever and the crane to avoid the cable be short by the crane shake. Then open the crane power supply.

● Please read the manual before installation and usage.

● Please close the main power when you install and maintain the remote control to avoid touch electricity.
The transmitter is lay at safety place, nobody can push the button to avoid accident happen.
Controlable crane should has mainpower relay, limit switch and other safety facilities.

● Please stop using when there is lightning strike or disturbance.

Non-training person don' t open the machine to avoid break it.
This manual is for user reference, please contact us for details.
We hold the right to amend the machine and manual without notice, operation manual is not confirmed to the machine, please enquiry our company.

● Test process

◆ First loosen the EMS button,method: rotate the button 1/4 circle clockwise, it will bounce automatic. Then rotate the left rotory switch to "ON" position, the center indicator will be red, later turn to blue.

Note 1: when you press the EMS button, you must redo the above operation to open the receiver.(loosen the EMS, and rotate the switch to ON position)

Note 2: don't press any button of the transmitter during the power on, or it will make the transmitter into protection.(not sending any signal)

Note 3: after the power on, the transmitter appear red 3 seconds, then turn to blue, or sparkle one time on red then one time on blue, etc two different condition, details see the manual.

◆ Under default state, the control relay of the receiver will disconnect after 10minutes starting from not any signal. If you don't need this function, I give a suggestion for you: move the relevant connecting pieces, then the control relay keep contact until receiving the EMS signal. Details operation see the manual.

◆ Make sure that the contactor is off after pressing the EMS button.

◆ Test each function of the relay to meet your requirement.

◆ Operate the emitter farthest to check the signal. If the crane action is discotinuous or blind, then the operation is very dangerous.

◆ Note: whenever keep your emitter and leave it at proper place. Make sure no one can operate it, or it will cause very serious aftereffect.

Using Notice

- Install the alkalic battery rightly, suggest to use above 1600AH battery to make the use time reach 100hours. Don’ t use NIH battery, its voltage is only 1.2V.
- Make sure the Red EMS button is loose and then turn the emitter power button to ON.
- Please pay attention to observe the indicator, it will help you to use the remote system.

◆ The explication between the indicator of the transmitter and the corresponding status

LED status	Complement	Explication	Processing method
Red light blink then close	And then operate normal (blue light is bright)	The transmitter is normal, the voltage & buttons are normal, communication good	Operation normal
Red light light 3s then warning	And then red blink one time after pressing any buttons	The transmitter is low voltage, please change the battery on time.	Please open the machine after change the battery.
	And then no action after pressing any buttons	There is any button in touch status, the transmitter pretect itself.	Please check the buttons blocked or depressed and then open the machine.
	And then normal operation (blue light is bright)	Weak signal，please ensure that there is no shielding or interferent between the transmitter and the receiver.	Weak signal， please attention to use.

- Every time you press EMS button,the emitter will send stop signal to the receiver continously, the signal keeps 3 seconds then stop sending, you must press EMS button to continue. If you turn the power to "OFF", then the EMS is invalid.
- Before close the power of the emitter, please press the red EMS button, then turn the power button to "OFF". Don't close the power directly, it won't disconnect the relay and keeping on.
- Button interlock: the emitter has the function, when you press "UP" button, then the emitter won't respond "DOWN" command.
- Change the battery: please change the battery on time when the voltage is low, you can open the battery cover, take out them and put new battery.

◆ The explication between the indicator of the transmitter and the corresponding status

LED status	Complement	Explication	Remark
AC indicatoris bright		Voltage normal	
Sin indicatoris bright		Normal signal receiving	
M blue lightis bright		The receiver is open, MAIN relay close	
M red lightis bright		The receiver is in 2 speed status.	
A indicator is bright		The receiver AUX relay close	600A,610A,620Ahave
U,D,E,W,N,S is bright		Corresponding direction relay acts	

Troubleshooting tips

◆ If the remote control is not working, please remove the failure according the following explain.

◆ When the controller can't work normally (pressing the emitter buttons, the receiver has not action), please check the failure by the following steps:

Item	Failure description	Method
1	Emitter LED light doesn't shine, Receiver has no action.	◆ Confirm if the battery power is normal. a. Check the battery directions b. Check the battery box directions c. Check the battery capacity d. Check if the tube is break or uncertain close ◆ send to repair
2	Emitter LED light is normal, but Receiver has not action.	◆ Confirm the receiver power input is normal. ◆ Check if AC power fuses and DC power fuse melt, if it is necessary, turn off the power and use the spare fuse. ◆ Confirm if the relay output fuse melt, if it is necessary, please use the spare fuse. ◆ Send to repair.

Item	Failure description	Method
3	Some actions is not working	◆ Confirm if the relay output fuse melt, if it is necessary, please use the spare fuse ◆ Comfirm if original cable control system works, if so, find the factory to repair. ◆ Send to repair.
4	The Controller Distance become near	◆ Confirm the emitter battery is abundance ◆ Confirm the receiver doesn’t shield by corresponding metal cover or net. ◆ Confirm surround has not be interfered by strong wireless. ◆ Confirm no same frequency interfered, which can use to change the channel. ◆ Send to repair.

system parameter

- 600 new double speed series

- Constant technique parameter

	Receiver			
	600S	600A	620S	620A
Work voltage	DC12V,DC24V,AC85–400V			
Connection mode	Pin insert terminal block			
Relay capacity	10A 250V			
Respond time	<100ms			
Use temperature	–20–70℃			
Antenna	outside			
Defend grade	IP66			

	The emitter			
Model	600S	600A	620S	620A
Buttons	6	6+1	6	6+1
Selection key	0	1	0	1
Shell	ABS enhanced plastics			
Buttons mode	High reliability two step button			
Antenna	Inside or outside			
Battery	2pcs AA battery			
Battery life	Continous signal sending more than 100hours			
Frequency	400–460MHz			
Power	< 10mW			
Modulation frequencies	Frequency modulation			
Range	Industry condition 100m			
Defend grade	IP66			

Notice: the environment is bad or distance more than 100m, please add the antenna.