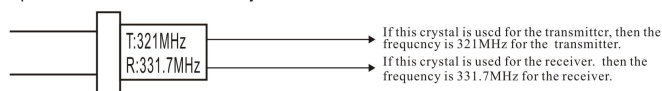


The frequencies shown on the same Crystal for the transmitter and receiver will be different as below:



8. Replacing the Fuse

Press the fuse cover and turn counter-clockwise with flat screwdriver to open up the fuse cover, then remove the old fuse. Insert the new correct fuse into the cover first, place this fuse along with cover into the fuse holder base, and press the fuse cover and turn clockwise with flat screwdriver.

9. LED Malfunction Alert

A. TX red LED is flashing quickly when any function pushbutton is pressed, then the problem could be:

- (a) One of the pushbutton is jammed.
 - (b) The EMS mushroom has not been released.
 - (c) The system is not properly powered on according to the instructions.
- If a problem on the above is found, please contact the distributor for repair.

B. TX LED will flash slowly if the memory of the transmitter is defective. Please contact the distributor for repair.

C. RX Error LED will flash slowly if the memory of the receiver is defective. Please contact the distributor for repair.

10. Troubleshooting

A. If TX LED remains in red, please remove the batteries and insert again.

B. If the RX does not respond at all, please turn off the power supply for 20 seconds and then turn it on again to the receiver.

F21-E1, E1B, 4D, 4S, 4SB, 2D, 2S User's Manual

1. Warranty

Warranty

Lcc's Hi-Tech Enterprises Co., Ltd. guarantees that this product meets its published specifications at the time of shipment from the factory. Under proper installation it should work as expected.

Warranty Period

This equipment is warranted against defects in material and manufacturing for a period of one year from the date of shipment. During the warranty period, TELECRANE is responsible for necessary repairs as long as the product can be proven to be defective.

For warranty service or repair this product must be returned to a service facility designated by TELECRANE. Buyer will pay shipping charges to TELECRANE while TELECRANE will pay return shipping charges.

Excluded Items

This warranty does not include consumable parts such as batteries, fuses, buttons, relays. Also this warranty does not cover defects caused by improper installation, improper or insufficient maintenance, unauthorized modification, improper operation, ignorance of environmental specifications, or improper software or interfacing.

Remarks

©No other warranty is expressed or implied, except for the above mentioned.

©The remedies provided herein are the buyer's sole and exclusive remedies.

TELECRANE shall not be liable for any direct, indirect, special, incidental or consequential damages.

2. Attention & Precaution

Attention

© Never dismantle the equipment by any unauthorized personnel, or it may be damaged.

© After finishing operation of TELECRANE, shut off main power to the crane and power to receiver, and remove transmitter key. If the transmitter's power is controlled by a rotary key switch, turn the key to "OFF" position first, then remove it.

© The crane should be equipped with main power relay, limit switch and other safety devices.

Precaution

- A. To avoid any interference, the Receiver must be away from motors, frequency converter and power cable as far as possible.
- B. The Receiver should be installed on the top of the electrical control box. Don't mount the receiver inside the electrical control box.
- C. There are 4.3 billion ID Codes, for each complete unit has an unique one prior to shipment. To avoid any interference, please manage the remote controls with different ID Codes at a working site when installing.
- D. It is not allowed to use the same series models with the same frequency in the range of 200 meters.

3. Procedures of emergency

In case of Emergency, please follow the steps below and aontact a distributor for service immediately.

- A. Press EMS button.
- B. Turn the rotary key switch to the "OFF" position and remove the magnetic key out of the transmitter.
- C. Switch off the main power of crane.
- D. Contact the distributor to find out the reason.

4. General Operation

- A. Remove the cover of battery box.
 - B. Install Fresh AA-size batteries in the battery box. Make sure if the "+" and "-" directions are correct.
 - C. Attach back the battery cover.
 - D. Turn on the power according to the "Power-On Modes"
- Note:** LED indicator will flash with red color if proper procedures are not followed.
- E. Operate transmitter by pressing each pushbutton.
 - F. After operation, perform the following procedures in sequence:(1) Press EMS mushroom, (2) rotate key counter-clock-wise to the "OFF" position, (3) remove key and keep it in a safe place, (4) remove batteries if not used for a long period.

5. Transmitter Batteries

The AA size alkaline batteries are required for the transmitter.

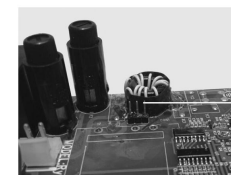
The LED will flash green when the battery power is sufficient.

The LED will flash red when the battery power is low, and it is required to replace with fresh batteries immediately.

6. Receiver Power Supply

There are two type of receiver decoder/relay board for DC and AC power supply.

- A. The voltage range for the DC power supply is DC12 ~ 24V.
- B. There are five different transformer with different voltages for the AC power supply containing AC24/48, 48/110, 48/220, 110/220 and 220/380V, each transformer has two kind of voltage which will be selected by a Jumper set at HI or LO position on the PC board as shown on the following Fig.



JUMPER is used as a voltage selector

TRANSFORMER JUMPER	AC24/48V	AC48/110V	AC48/220V	AC110/220V	AC220/380V
LO	AC24V	AC48V	AC48V	AC110V	AC220V
HI	AC48V	AC110V	AC220V	AC220V	AC380V

7.Changing the Frequency

There are two different PC board for using in two different frequency range were called VHF and UHF, For each frequency range, by changing the Crystal of the transmitter and receiver can obtain the required frequency/channel.

NOTE: Do not replace the crystal for VHF into the UHF PC board and vice versa. The indication for VHF or UHF is shown on the PC Board with a check mark "v".

INSTRUCTIONS:

- (1) Pry up the crystal unit with a flat screwdriver.
- (2) Remove the crystal unit from the system.
- (3) Use a needle nose pliers to straighten both pins of the new crystal unit.
- (4) Insert the new crystal unit vertically into the PC board.
- (5) Press the new crystal down into the socket.

- Place two AA batteries in correct direction (For F21-E2S, the release ribbon must be placed under the batteries), and lock the battery cover.
Note: Before placing the batteries, make sure the Rotary KEY is on the "OFF" position.
- Turn on the transmitter (For E2B, place the magnetic KEY into transmitter. For E2S, turn the Rotary KEY into "ON" position. For E2M, turn the EMS button clockwise), and press the "Start" pushbutton to Power-On.
- Press motion button for operation.
- To switch off the transmitter/receiver, please follow the procedure below:
 - Press STOP or EMS mushroom button.
 - Remove the KEY from transmitter.
Note: For E2S, turn the rotary key to "PULL" position and remove it from transmitter. For E2B, remove the magnetic KEY.
 - Remove the batteries when the equipment will not be used for a long time.

◆ Transmitter LED indicator

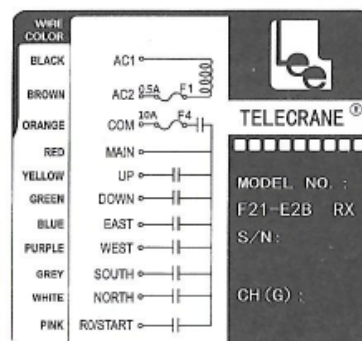
Three stages power indicator

- Green color (Full Power): Operate as usual.
- Yellow color (Middle Power): Stop operation until new batteries are replaced.
- Red color (Low Power): A Stop signal will be sent to receiver automatically to turn off receiver. To avoid the interruption during operation, check battery power frequently.

V Receiver Power

F21-E2B receiver voltage options: 24/48/110/220/380 VAC. The receiver voltage has been preset at factory, verify it before using.

VI Receiver wiring diagram



www.array.sh

I WARRANTY

* Limited Warranty

TELECRANE guarantees that this product meets its published specifications at the time of shipment from the factory. Under proper installation it should work as expected. However, TELECRANE cannot guarantee that operation in TELECRANE system is absolutely error-free, or without interruption.

* Warranty period

This equipment is warranted against defects in material and manufacturing for a period of one year from the date of shipment. During the warranty period, TELECRANE is responsible for necessary repair as long as the product can be proven to be defective. For warranty service or repair, this product must be returned to the service facility designated by TELECRANE. Buyer will pay for shipping charges to TELECRANE while TELECRANE will bear return shipping charges.

* Excluded Items

This warranty does not include consumable parts such as batteries, fuses, buttons, and relays. Also this warranty does not cover failure or damage resulting from misuse, accident, unauthorized modification, unsuitable operating environment, natural disasters, improper software setting or improper maintenance.

* Limitation of liability and remedy

If your TELECRANE product fails to work as warranted above, TELECRANE maximum liability under this limited warranty is expressly limited to the lesser of the price you have paid for the product. TELECRANE disclaims any liability as a result of any direct/indirect, special, incidental or consequential damages.

* Remarks

No other warranty is expressed or implied, except for the above mentioned. Any use of this remote control product would be regarded the same as agreed to all clauses within this user manual.

II ATTENTION

* Attention

- ▲ Please carefully read the manual before installing and operating this device.
- ▲ Due to the complex nature of this equipment, it is necessary to read the entire manual before installation.

- ▲ The equipment has been stringently tested for quality assurance before delivery from factory. However, it must not be used in extremely dangerous situations, or where damage may result.
- ▲ After operation, shut off both crane main power and receiver power, and remove transmitter key.
- ▲ After operation, by pressing "STOP" pushbutton switches off receiver unit then keeping the transmitter in a safe place when not in use to avoid any unintentionally operation.
- ▲ The crane should be equipped with main power relay, limit switch and other safety devices.
- ▲ Do not use this device during electrical storm or where there are conditions of high electrical interference.
- ▲ Make sure that the batteries are in good condition and power for receiver is correctly supplied.
- ▲ The installation and maintenance service is allowed only when the receiver power is disconnected to avoid electrical shock.
- ▲ The contents of this manual may be amended by the manufacturer without notice.
- ▲ The specification and function of remote control is subjected to change without notice by manufacturer.

* Precautions

- ▲ Operating in an industrial facility is relatively dangerous; therefore, operator must have taken the adequate trainings in using F21-E2B system.
- ▲ Besides obtaining qualification certificate for operating this remote control product, users must also be both physically and mentally in well conditions, and has sufficient knowledge with safety precaution.
- ▲ Although F21-E2B transmitters are solid made for certain level of impact and weathering resistance, but any malicious destruction or improper use might still cause high possibility of potential damage.
- ▲ When transmitter battery power is low (Red LED), a STOP signal will be sent to receiver automatically to turn off receiver. The batteries must be replaced immediately.
- ▲ If the severe interference occurred, the operation must be stopped immediately.
- ▲ Please remove the batteries when the equipment will not be used for a long time.
- ▲ Be sure to know the "Procedures of Emergency" as follows.

III PROCEDURES OF EMERGENCY

In case of an Emergency, please follow the procedure below and contact authorized distributor for service immediately.

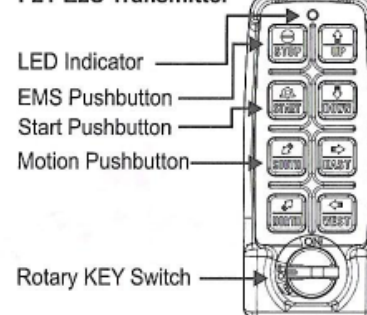
- ▲ Press "EMS" button.
- ▲ Turn the key to "OFF" position and remove it.
(For E2S, turn the rotary key to the "OFF" position and remove it. For E2B, remove the magnetic key from transmitter. For E2M, remove the battery cap).

- ▲ Switch off crane main power.
- ▲ Contact authorized distributor for inspection.

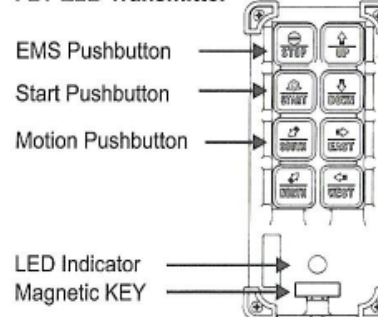
IV HOW TO START

* F21-E2B transmitter & receiver overview

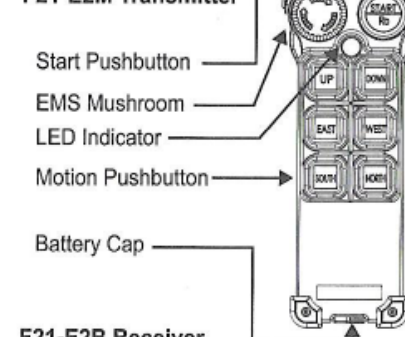
F21-E2S Transmitter



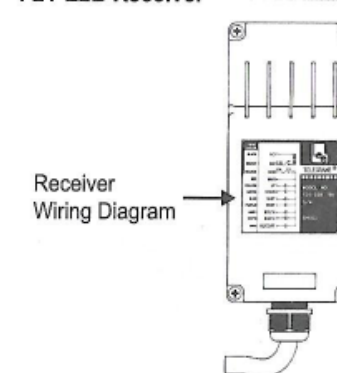
F21-E2B Transmitter



F21-E2M Transmitter



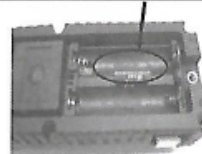
F21-E2B Receiver



* Operation

1. There is one e-Card installed on the transmitter and receiver respectively (The picture shown is referring to F21-E2S).

e-Card on the transmitter



e-Card on the receiver

