

2016

Alpha 600 Series

Industrial Radio Remote Control System

Operation & Parts Manual

Fomotech International Corp.

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1. SAFETY INSTRUCTION

The Alpha 600 series are relatively simple to use, however, it is very important to observe the proper safety procedures before, during, and after operation. When used properly, the Alpha 600 series will enhance safety, productivity and efficiency in the workplace.

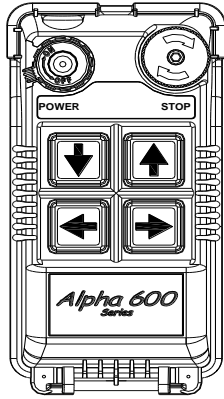
The following procedures should be strictly followed:

1. The transmitter is equipped with a specialized battery charger. Only two "AA" Ni-MH rechargeable batteries are allowed to be used in the transmitter. Please note the polarity of the batteries. Do not use other types of battery to prevent any accident
2. Be sure that the battery charger is not placed in the raining, high temperature, humid and with corroded air environment. Indoor with good ventilation is suggested.
3. Do not change the IDs on transmitter encoder and receiver decoder boards at will.
4. Check the transmitter casing and pushbuttons daily. Should any damage that could inhibit the proper operation of the transmitter be found the unit should be immediately removed from service.
5. Check the transmitter voltage whenever it is operated. Place the transmitter into battery charger when battery is running out or the voltage is low.
6. The red emergency stop button (EMS) should be checked at the beginning of each shift to ensure it is in proper working order and the "Stop" command is being received by the receiver.
7. In the event of an emergency press down the EMS button will immediately deactivates the receiver MAIN relay and the transmitter power. Then turned the power "off" from the main power source to the crane or equipment.
8. Do not use the same RF channel and ID code as any other system in use at the same facility or within 300-meter distance.
9. Ensure the waist belt is worn at all time during operation to avoid accidental damage to the transmitter.
10. Rotate the power switch to OFF position when the transmitter is not operated temporarily or the operation is finished.
11. Any repair or adjustment should be proceeding by repair technician for radio remote controls.
12. The operator should not change any electrical parts at will.

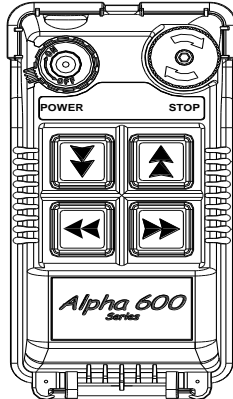
2. PUSHBUTTON CONFIGURATION

2.1 Alpha 604 Models

1. Alpha 604A -- (4) single speed pushbuttons
2. Alpha 604B -- (4) double speed pushbuttons

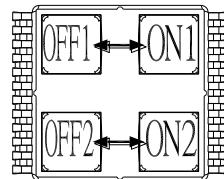
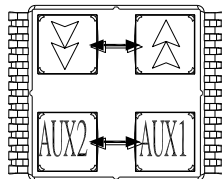
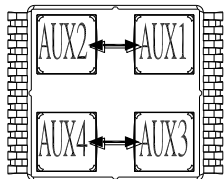
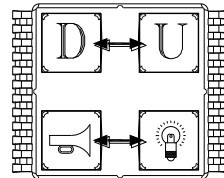
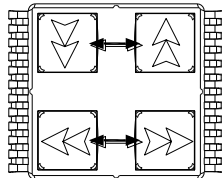
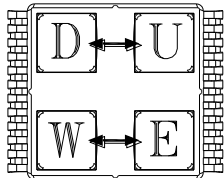


(Alpha 604A)



(Alpha 604B)

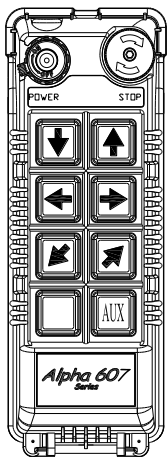
Below are some of many types of pushbutton configurations that are also available, please contact your dealer for more details.



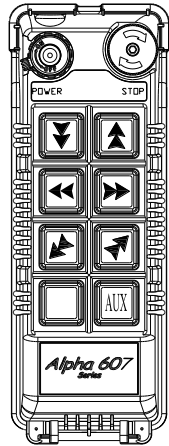
↔ Interlocked (Can also be set to non-interlocked via an external programmer unit).

2.2 Alpha 607 & 608 Models

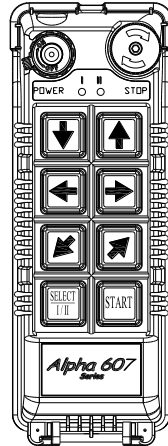
1. Alpha 607A -- (7) single speed pushbuttons
2. Alpha 607B -- (6) double speed pushbuttons + (1) single speed pushbuttons
3. Alpha 607AT -- (6) single speed pushbuttons + (1) SELECT I/II pushbutton
4. Alpha 607BT -- (6) double speed pushbuttons + (1) SELECT I/II pushbutton
5. Alpha 608A -- (8) single speed pushbuttons
6. Alpha 608B -- (6) double speed pushbuttons + (2) single speed pushbuttons



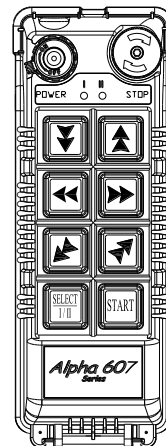
(Alpha 607A)



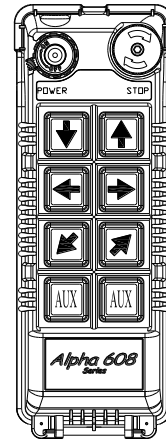
(Alpha 607B)



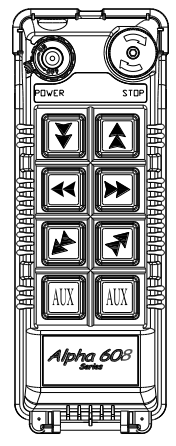
(Alpha 607AT)



(Alpha 607BT)



(Alpha 608A)

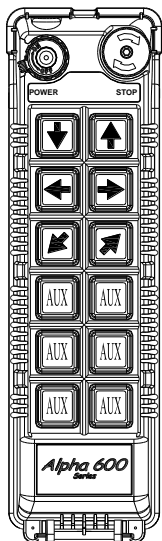


(Alpha 608B)

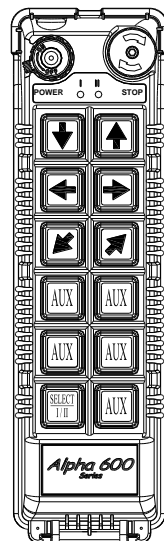
2.3 Alpha 612 Models

1. Alpha 612A → (12) one-speed pushbuttons
2. Alpha 612B → (11) one-speed pushbuttons + I/II select pushbutton*
3. Alpha 612C-1 → (6) two-speed + (6) one-speed pushbuttons
4. Alpha 612C-2 → (8) two-speed + (4) one-speed pushbuttons
5. Alpha 612D → (10) two-speed + (2) one-speed pushbuttons
6. Alpha 612E-1 → (6) two-speed + (5) one-speed pushbuttons + I/II select pushbutton*
7. Alpha 612E-2 → (8) two-speed + (3) one-speed pushbuttons + I/II select pushbutton*

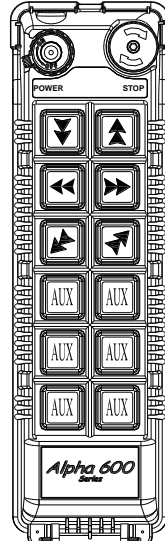
* For cranes with auxiliary hoist and trolley (changeover function).



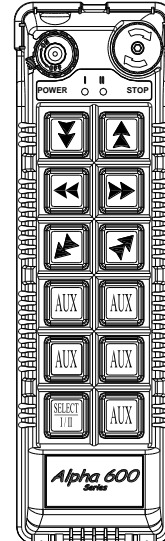
Alpha 612A



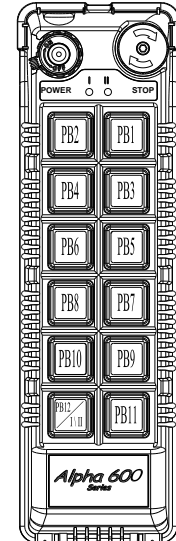
Alpha 612B



Alpha 612C-1
Alpha 612C-2
Alpha 612D



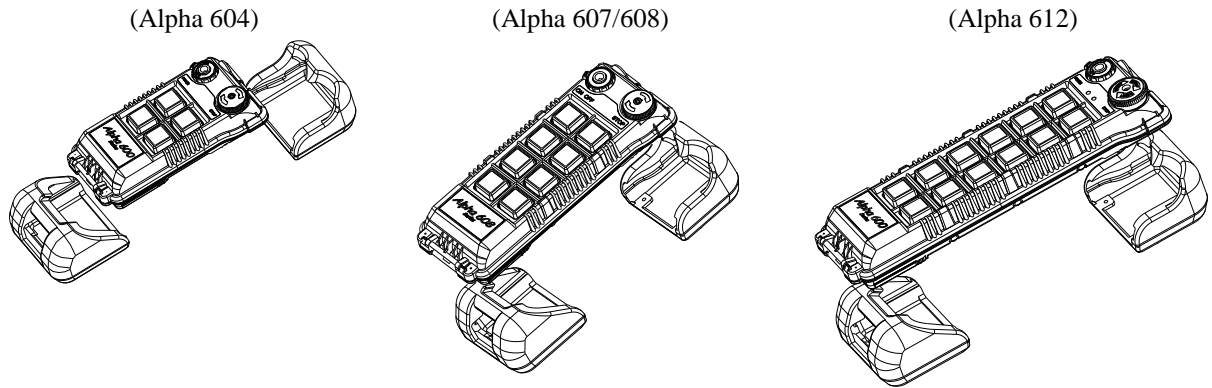
Alpha 612E-1
Alpha 612E-2



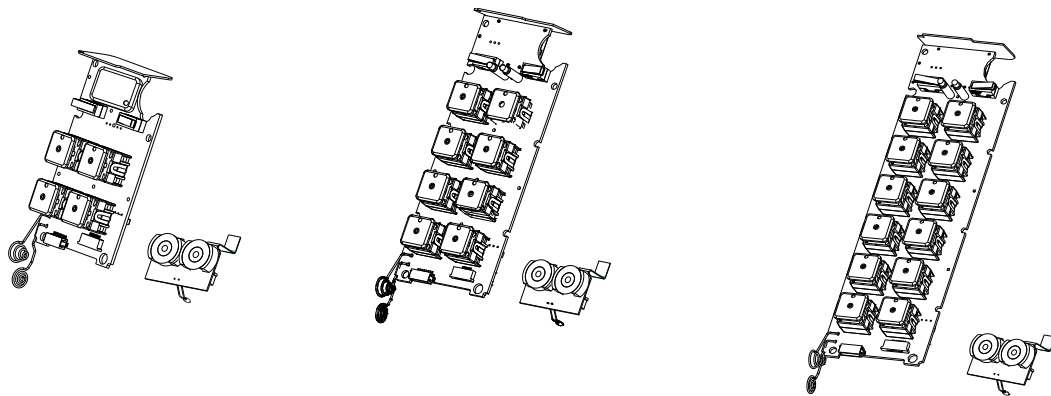
Alpha 612 button
reference

3. TRANSMITTER OUTLINE

3.1 Transmitter Outline

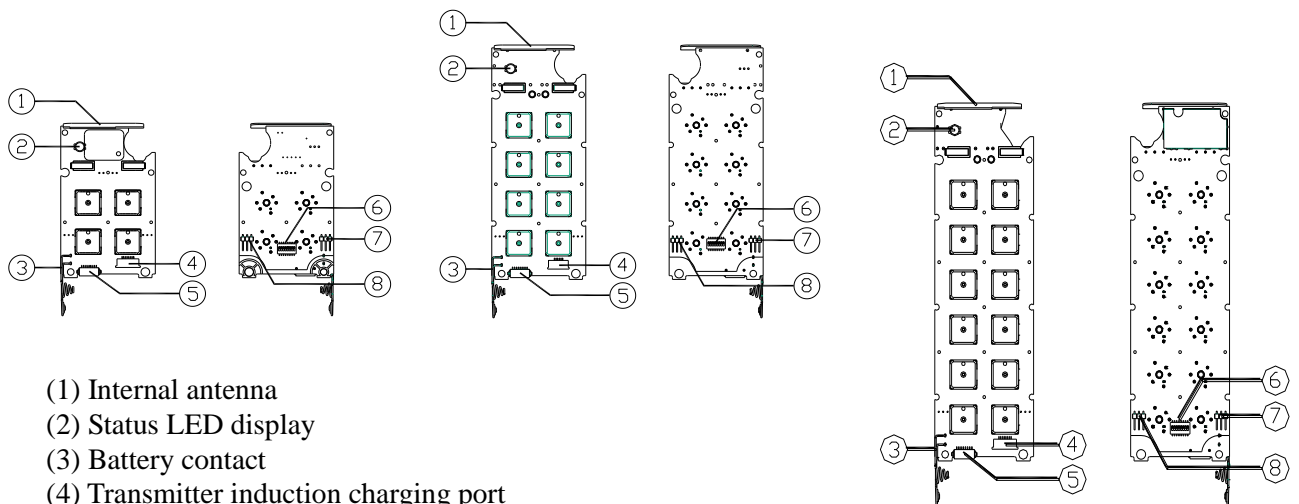


(Fig.1) Transmitter Front View



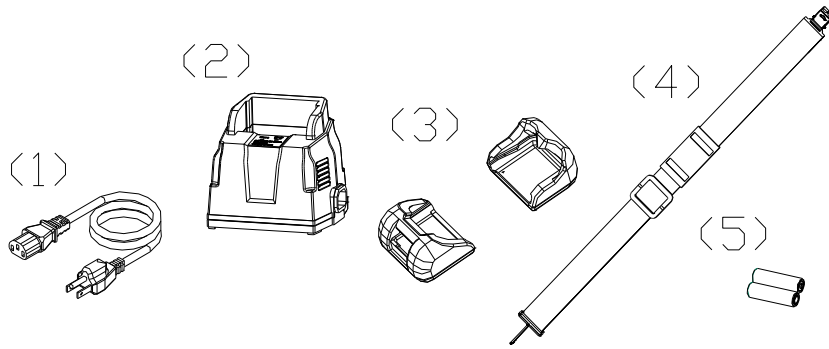
(Fig.2) Transmitter encoder board and induction charging board

(Fig.3) Transmitter Internal Assembly:



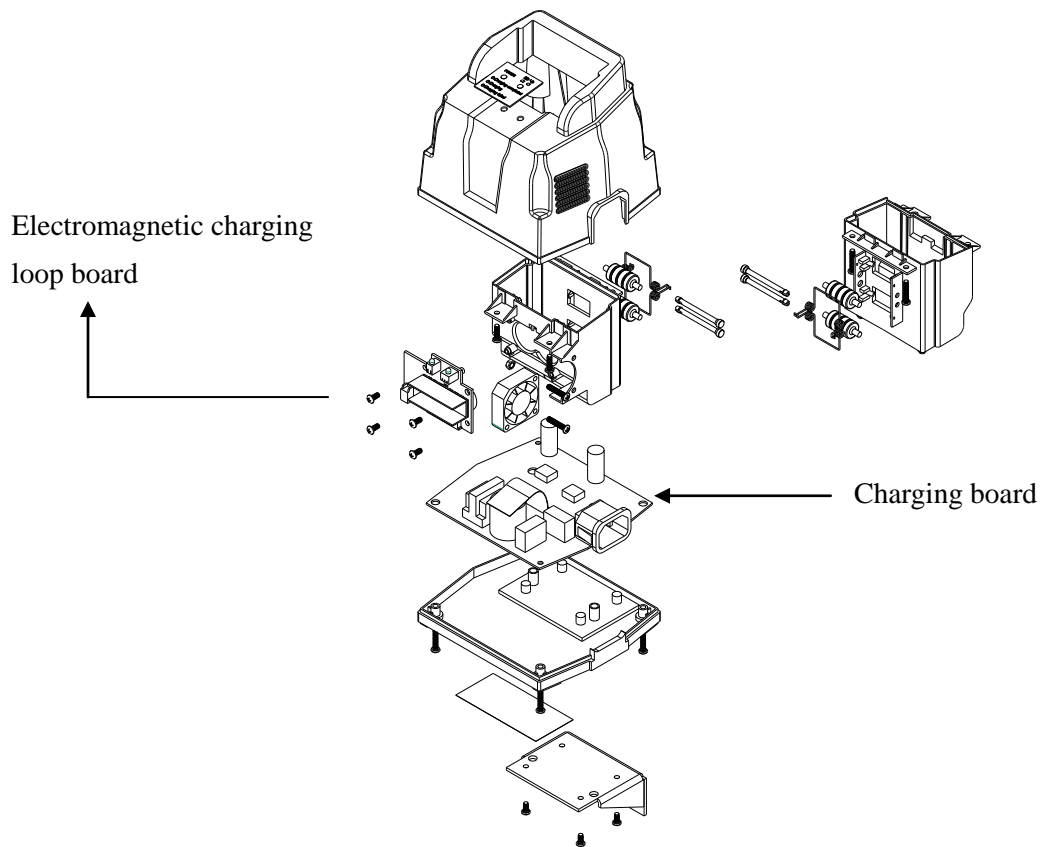
- (1) Internal antenna
- (2) Status LED display
- (3) Battery contact
- (4) Transmitter induction charging port
- (5) Programming port
- (6) Function dip-switch
- (7) JP2 setting pin
- (8) JP1 setting pin

3.2 Alpha 604/607/608/612 Spare Parts



- (1) Charging cable
- (2) Charger
- (3) Transmitter shock-absorbing rubber
- (4) Shoulder strap
- (5) Rechargeable batteries

3.3 Charger Assembly



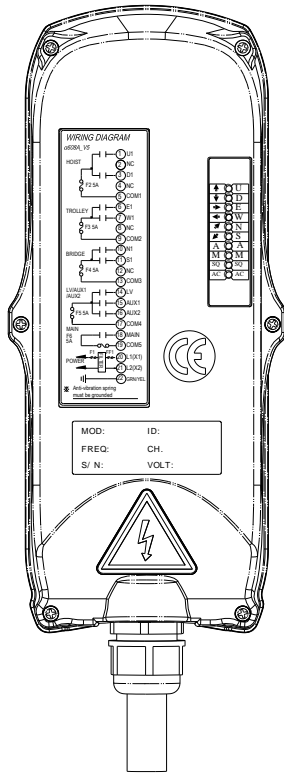
(Fig.4) Battery Charger Assembly

4. RECEIVER OUTLINE

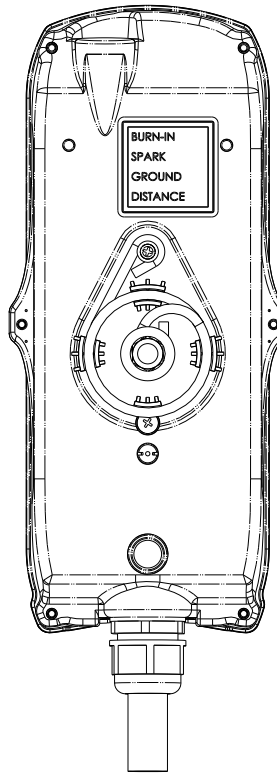
4.1 Alpha 604 ~ 608

4.1.1 Alpha 604 ~ 608 Models External Assembly

SIZE : 310mm X 134mm X 72mm



(Fig.5) Front View



(Fig.6) Back View

- | | | |
|---------------------------|-------------------------|---------------------------|
| 1) Receiver enclosure | 5) System frequency | 9) Supplied voltage |
| 2) Wiring diagram | 6) System serial number | 10) Anti-vibration spring |
| 3) Receiver LED displays* | 7) System ID code | 11) Grounding (GND) |
| 4) Type model | 8) System RF channel | |

* **A** ~ AUX Relay Contact Indicator (for Alpha 607A /608B models only).

* **M** ~ MAIN and 2nd Speed Relay Contact Indicator.

Green "on" → MAIN activated (All models).

Red "on" → 2nd speed activated (for Alpha 608B model only).

* **SQ** ~ RF Signal Indicator (Red).

"on" → RF signal detected and received.

"off" → No RF signal detected or received.

Blinking at transmitter power "off" → Other radio interference.

* **AC** ~ Power Source Indicator (red) "on" → AC input power supplied.

"off" → No AC input power.

4.1.2 Alpha 604 Internal Assembly

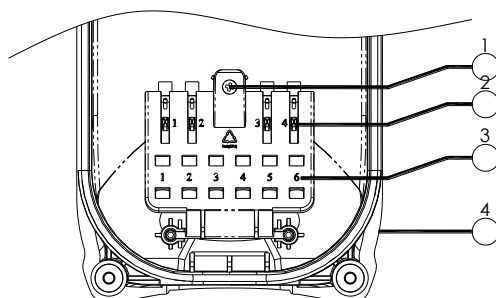
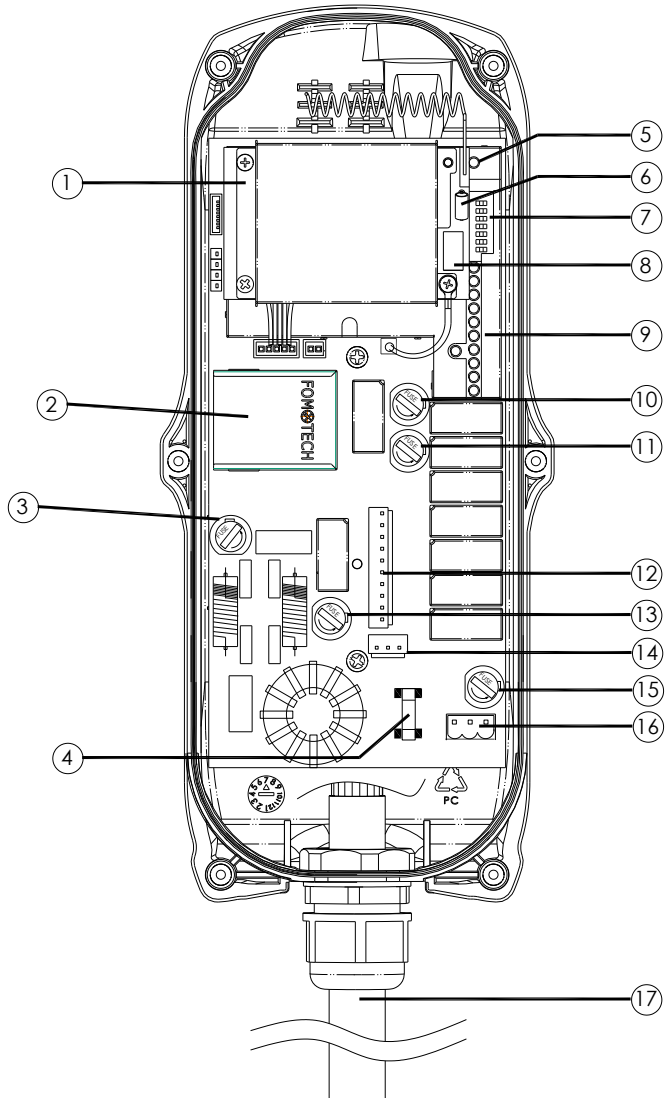
(Fig. 7) Internal Parts Assembly

- 1) Receiving RF module
- 2) Power module *
- 3) Secondary power AC fuse (F1)
- 4) Primary power AC fuse (FF1)
- 5) System status LED display*
- 6) External antenna port
- 7) ID code dip-switch
- 8) RF channel dip-switch
- 9) Contact relay LED display
- 10) Pushbutton #1 and #2 fuse (5.0A)
- 11) MAIN fuse (5.0A)
- 12) Contact output seat (CN3)
- 13) Low-voltage (LV) fuse (5.0A)
- 14) Contact output seat (CN4)
- 15) Pushbutton #3 and #4 fuse (5.0A)
- 16) AC power input seat (CN2)
- 17) Cable gland & output cable

* Power module: Including transformer or full-voltage module.

* Please refer to 4.3 α 604/ α 608/ α 612 Receiver Power Fuse List.

*Please refer to page 34 for system status LED display information.



- 1) Spare fuse & jumper compartment
- 2) Spare Jumper slots
- 3) Spare fuse slots
- 4) Receiver top casing

4.1.3 Alpha 608 Internal Assembly

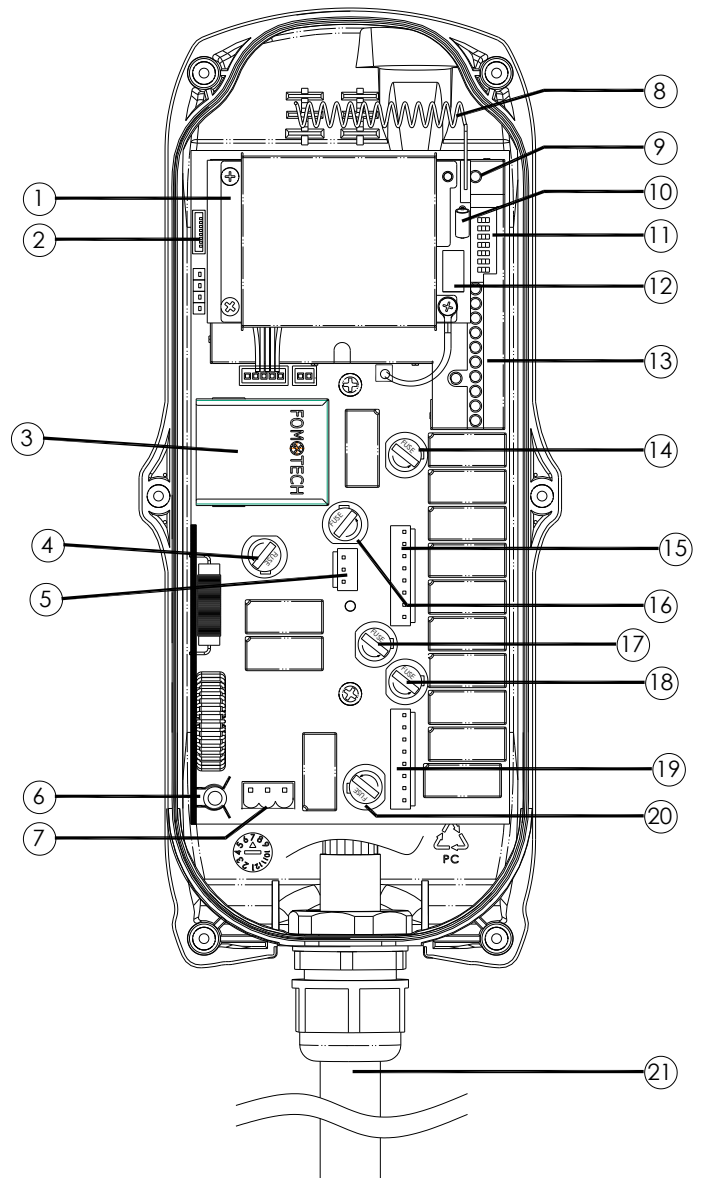
(Fig. 8) Internal Parts Assembly

- 1) Receiving RF module
- 2) External programming port
- 3) Power module
- 4) Secondary power AC fuse (F1)
- 5) Contact output seat (CN8)
- 6) Primary power AC fuse (FF1)
- 7) AC power input seat (CN2)
- 8) Internal Antenna
- 9) System Status LED display*
- 10) External antenna port
- 11) ID code dip-switch
- 12) RF channel dip-switch
- 13) Contact relay LED display
- 14) Pushbutton #1 and #2 fuse (5.0A)
- 15) Contact output seat (CN3)
- 16) MAIN contact fuse (5.0A)
- 17) Pushbutton #3 and #4 fuse (5.0A)
- 18) Pushbutton #5 and #6 fuse (5.0A)
- 19) Contact output seat (CN4)
- 20) LV & AUX fuse (5.0A)
- 21) Cable gland & output cable

* Power module: Including transformer or full-voltage module.

* Please refer to 4.3 α 604/ α 608/ α 612 Receiver Power Fuse List on Page 12.

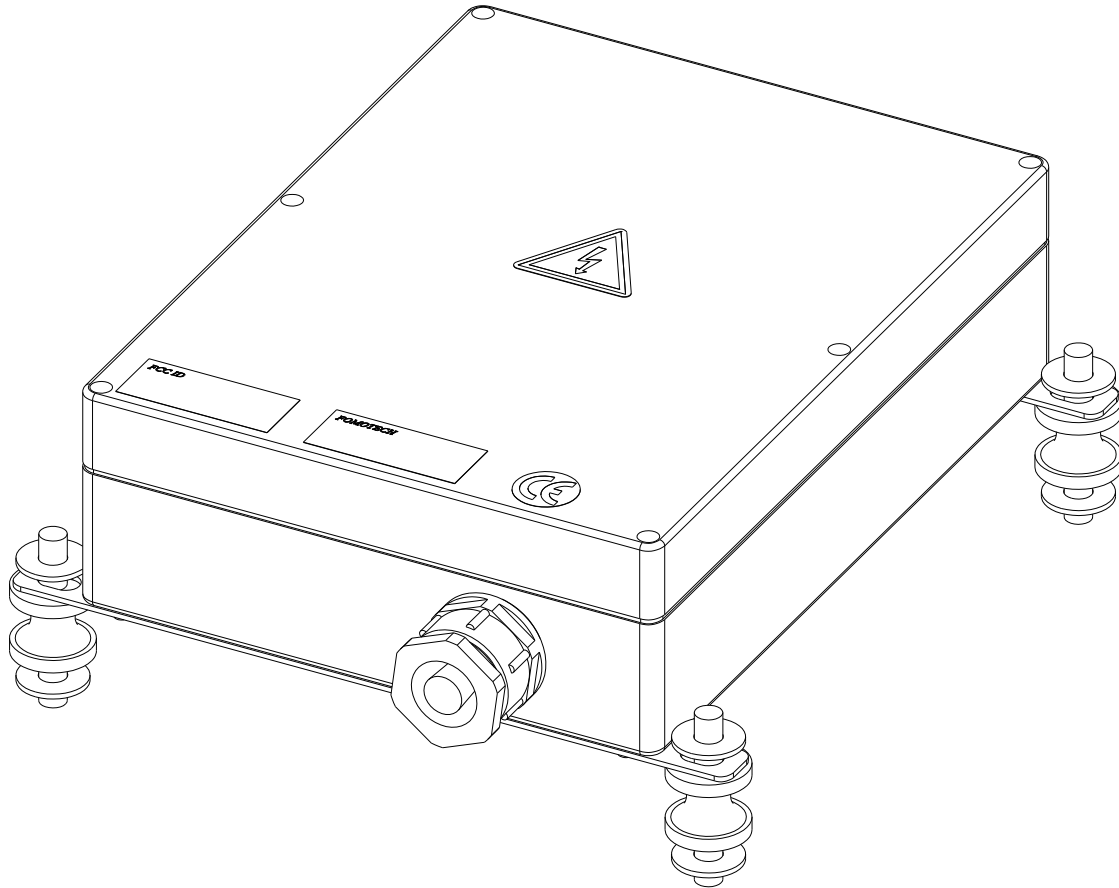
*Please refer to page 34 for system status LED display information.



4.2 Alpha 612

4.2.1 Alpha 612 External Assembly

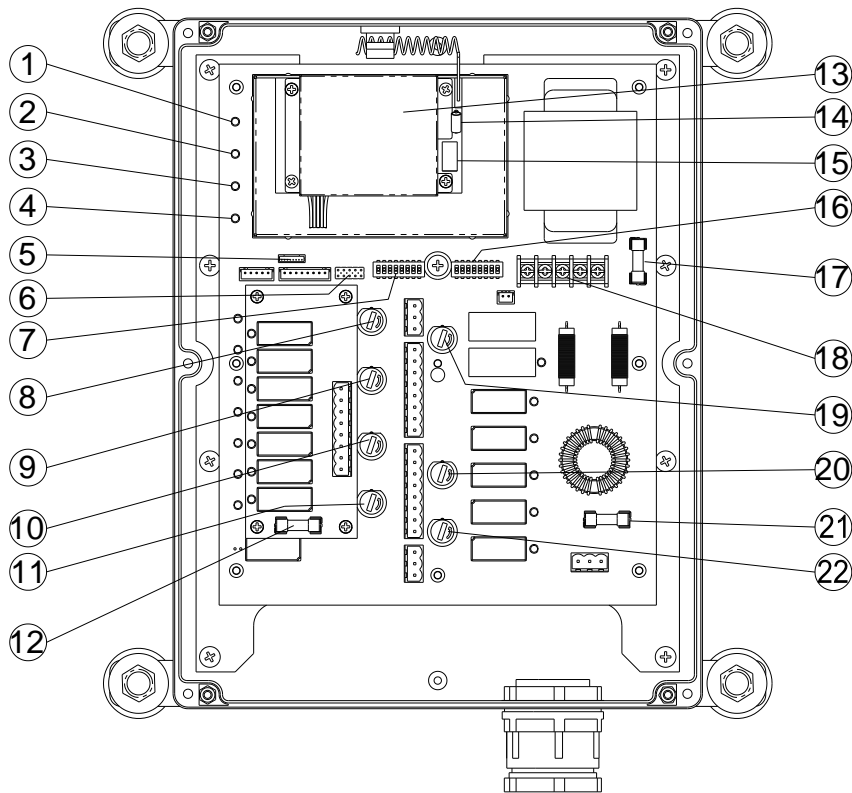
SIZE : 300mm X 230mm X 86mm



(Fig. 9) External Parts Assembly

- | | | | |
|----|-------------------------|----|---------------------------------------|
| 1) | Transparent top cover | 3) | Mounting bracket with shock absorbers |
| 2) | Light-gray colored base | 4) | Cable gland / Cord grip |

4.2.2 Alpha 612 Internal Assembly



(Fig. 10) Internal Parts Assembly

- | | |
|--|--|
| 1) Power LED display* | 12) Pushbutton #1 and #2 relay fuse (5.0A) |
| 2) SQ LED display** | 13) Receiving RF module |
| 3) Status LED display**** | 14) External antenna port |
| 4) DC power relay LED display*** | 15) RF channel dip-switch |
| 5) Programming port | 16) ID code dip-switch |
| 6) Jumper settings | 17) Secondary power fuse (0.8A) |
| 7) Function dip-switch | 18) Voltage selector seat |
| 8) Pushbutton #3 and #4 relay fuse (5.0A) | 19) MAIN relay fuse (5.0A) |
| 9) Pushbutton #5 and #6 relay fuse (5.0A) | 20) Pushbutton A4 relay fuse (5.0A) |
| 10) Pushbutton A1 and A2 relay fuse (5.0A) | 21) Primary power fuse (1.0A) |
| 11) Pushbutton A3 relay fuse (5.0A) | 22) Low-voltage (LV) relay fuse (5.0A) |

* **POWER** ~ AC Power Source Indicator "on" → AC input power supplied.
 "off" → No AC input power.

** **SQ** ~ RF Signal Indicator "on" → RF signal detected and received.
 "off" → No RF signal detected or received.

Blinking at transmitter power "off" → Other radio interference.

*** **RELAY_COM** ~ DC Power Source to Relays "on" → DC power to relays.
 "off" → No DC power to relays.

**** **STATUS** ~ Receiver System Status LED Display → Please refer to page 32.

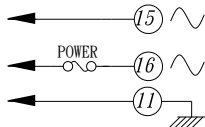
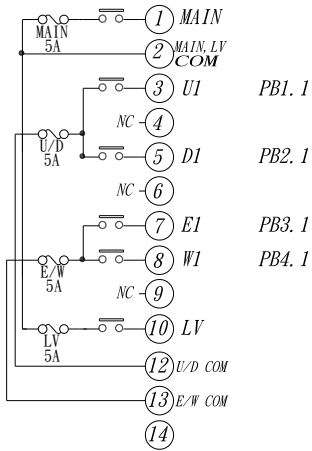
4.3 α 604/ α 608/ α 612 Receiver Power Fuse List

| Type | Parts No. | Voltage | | | | | | |
|------------------------------|-----------|-----------|------|----------|----------------|----------------|----------------|----------------------------|
| | | DC12V~24V | AC24 | AC36~48V | AC100~120 V | AC220~240 V | AC380~440 V | AC100~240V Full-Voltage |
| α 604 α 608 | FF1 | 3A | | | 1A | | 2A | |
| | F1 | 3A | 2A | 0.5A | | 1A | | |
| α 612 | FF1 | 3A | | | 1A | | | |
| | F1 | 3A | 2A | 0.8A | | | | |

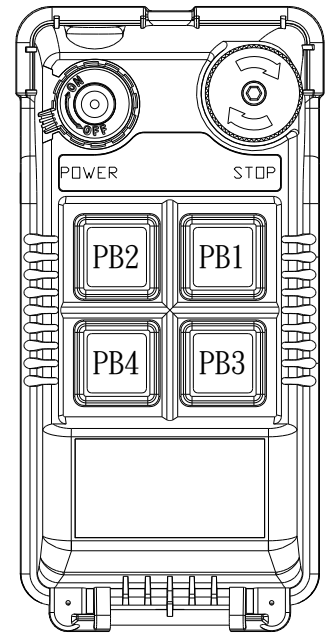
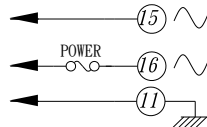
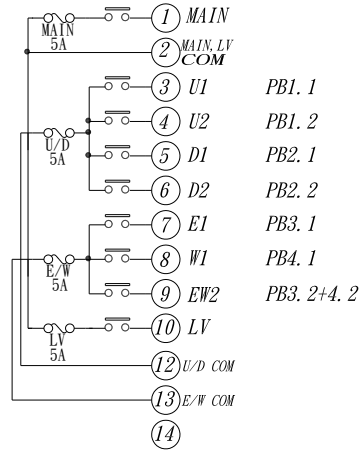
5. OUTPUT CONTACT DIAGRAMS

5.1 Alpha 604 Models

(Alpha 604A)

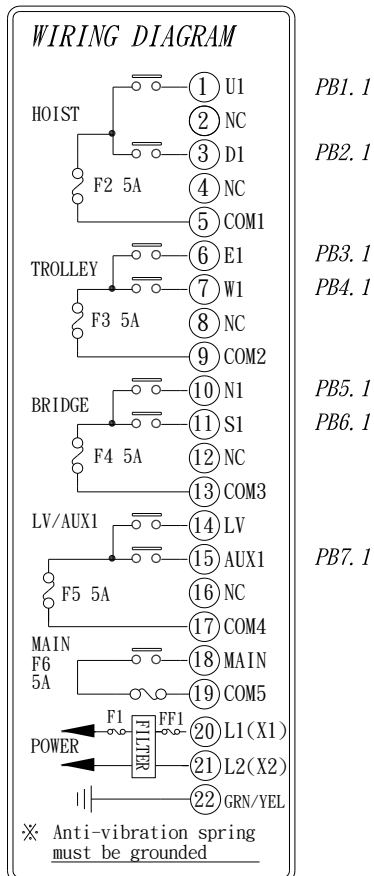


(Alpha 604B)

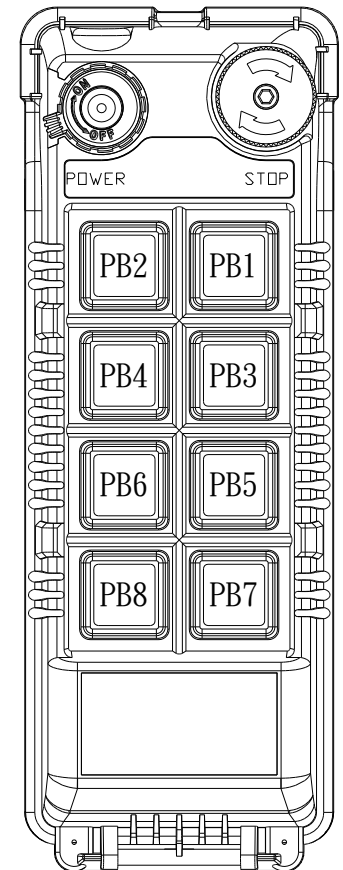
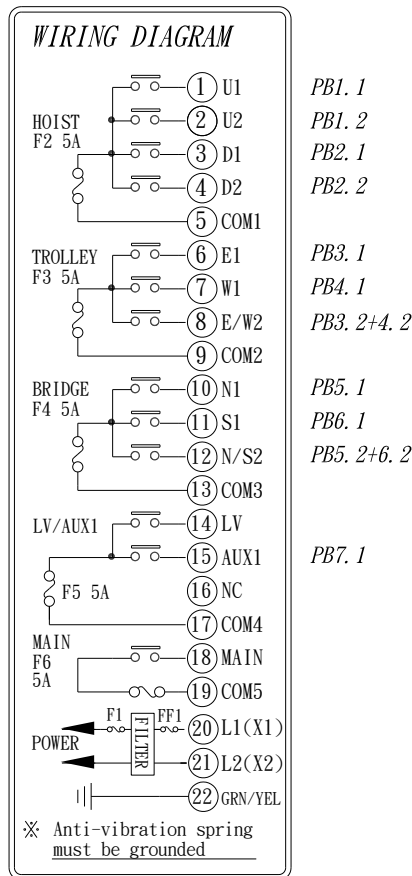


5.2 Alpha 607 Models

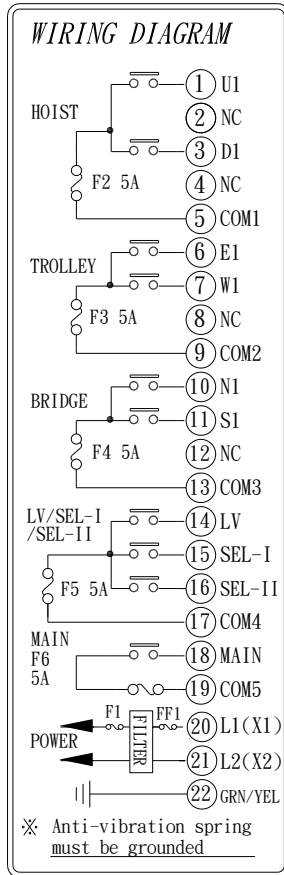
(Alpha 607A)



(Alpha 607B)



(Alpha 607AT)



PB1. 1

PB2. 1

PB3. 1

PB4. 1

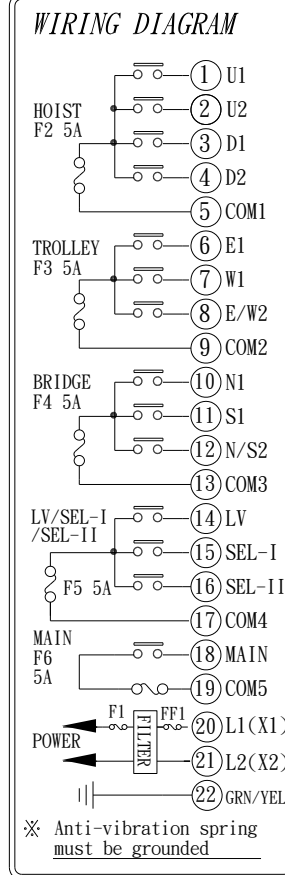
PB5. 1

PB6. 1

PB8. 1

PB8. 2

(Alpha 607BT)



PB1. 1

PB1. 2

PB2. 1

PB2. 2

PB3. 1

PB4. 1

PB3. 2+4. 2

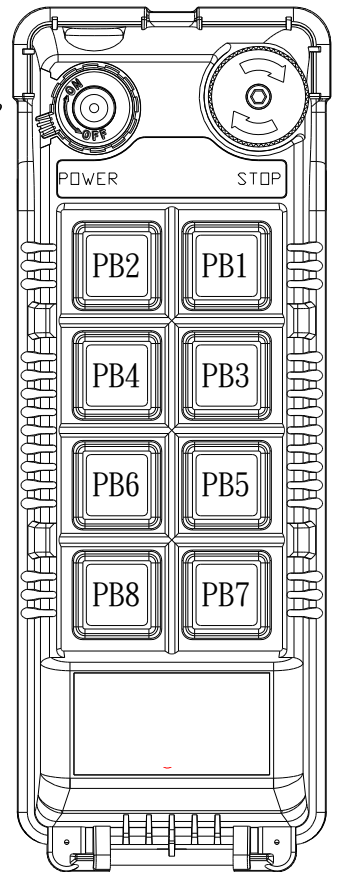
PB5. 1

PB6. 1

PB5. 2+6. 2

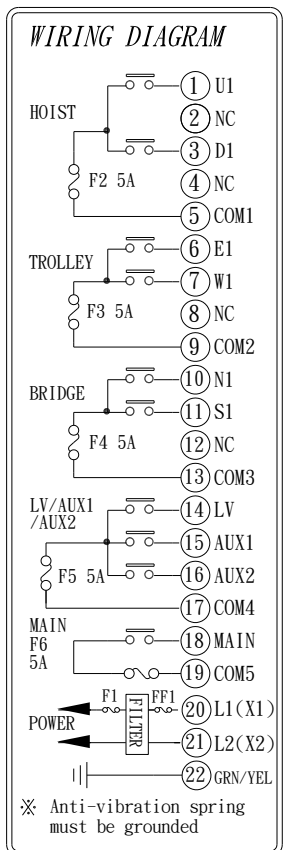
PB8. 1

PB8. 2



5.3 Alpha 608 Models

(Alpha 608A)



PB1. 1

PB2. 1

PB3. 1

PB4. 1

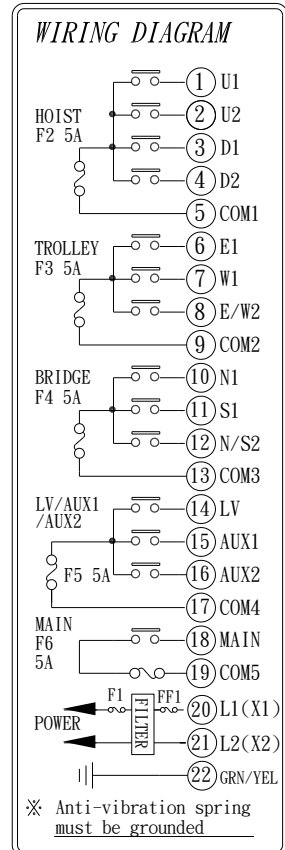
PB5. 1

PB6. 1

PB7. 1

PB8. 1

(Alpha 608B)



PB1. 1

PB1. 2

PB2. 1

PB2. 2

PB3. 1

PB4. 1

PB3. 2+4. 2

PB5. 1

PB6. 1

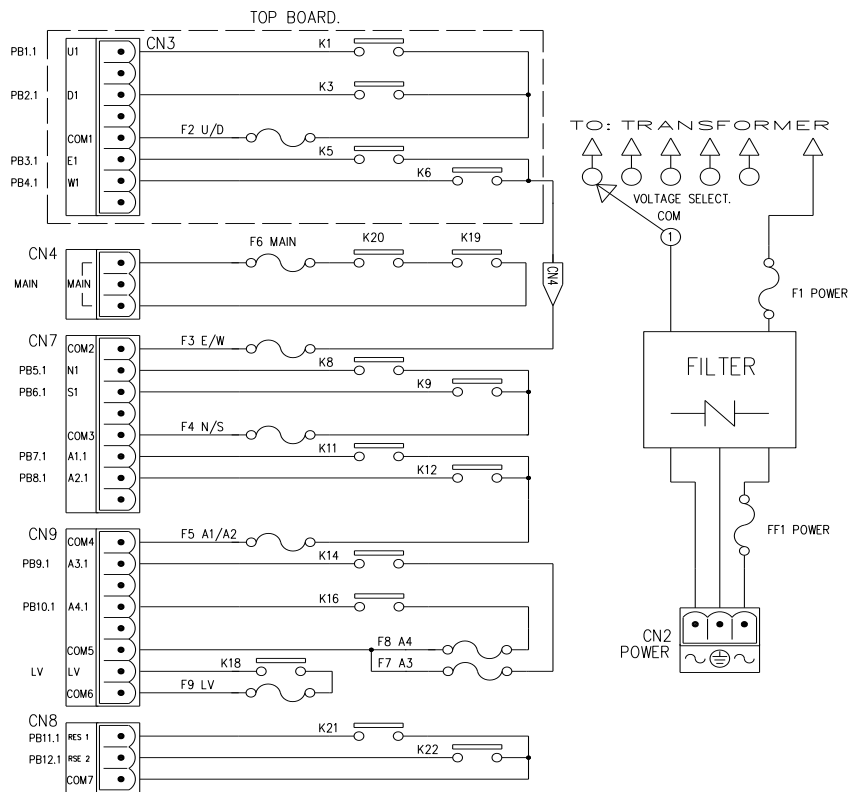
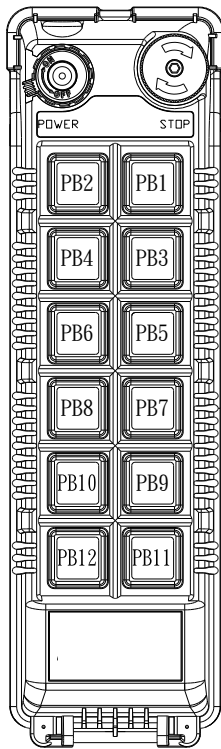
PB5. 2+6. 2

PB8. 1

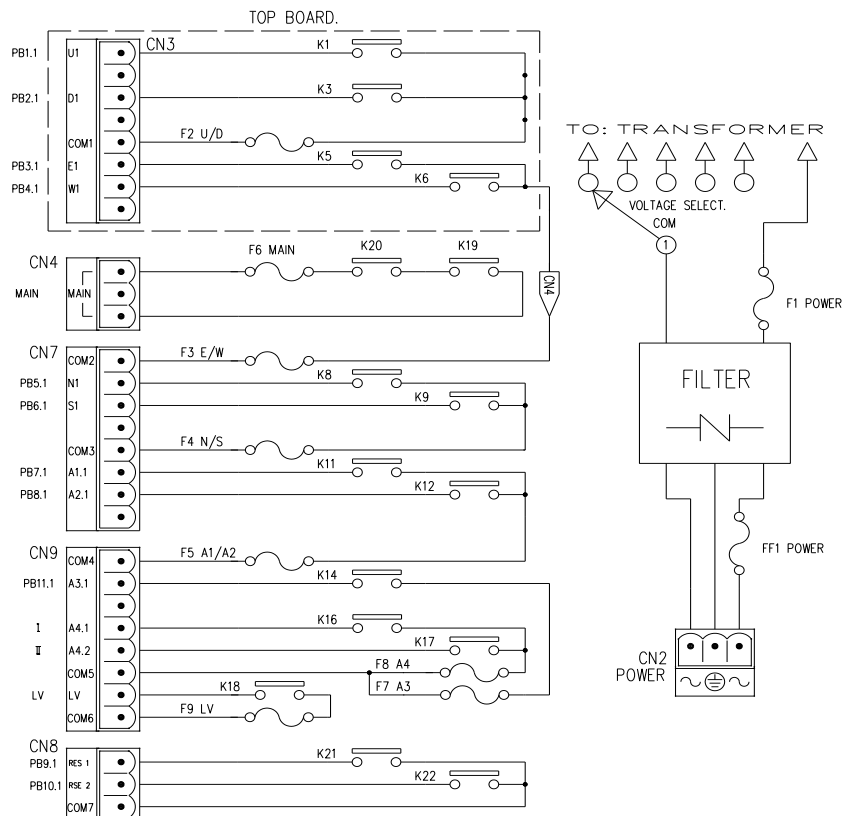
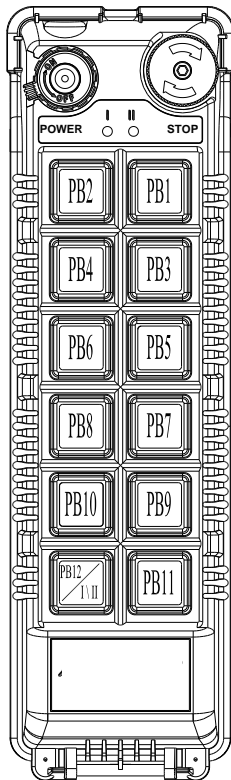
PB8. 2

5.4 Alpha 612 Models

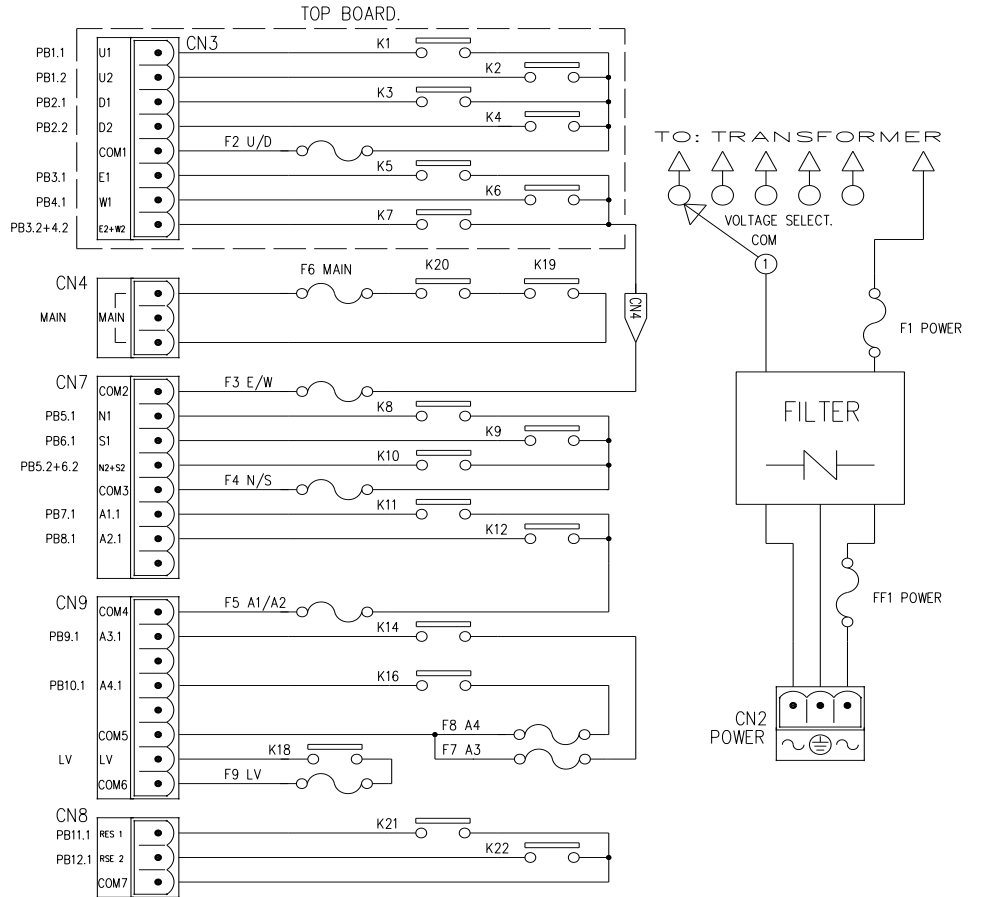
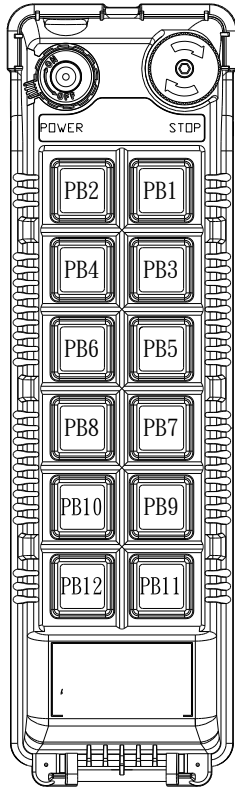
(Alpha 612A)



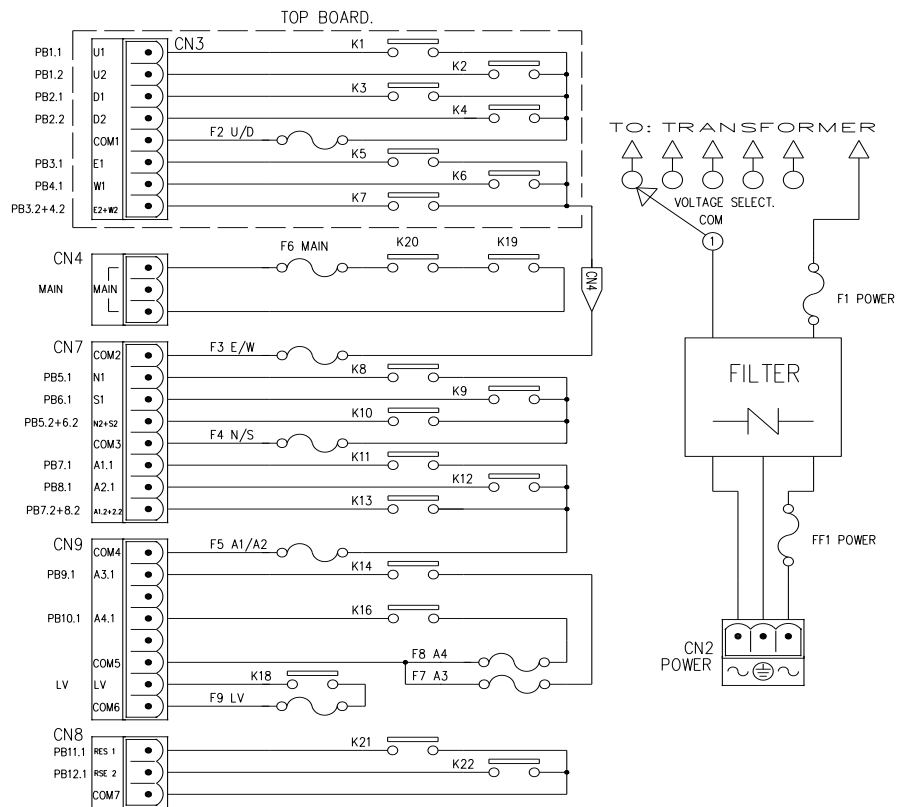
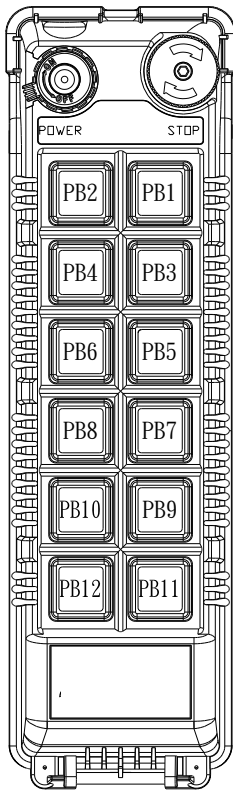
(Alpha 612B)



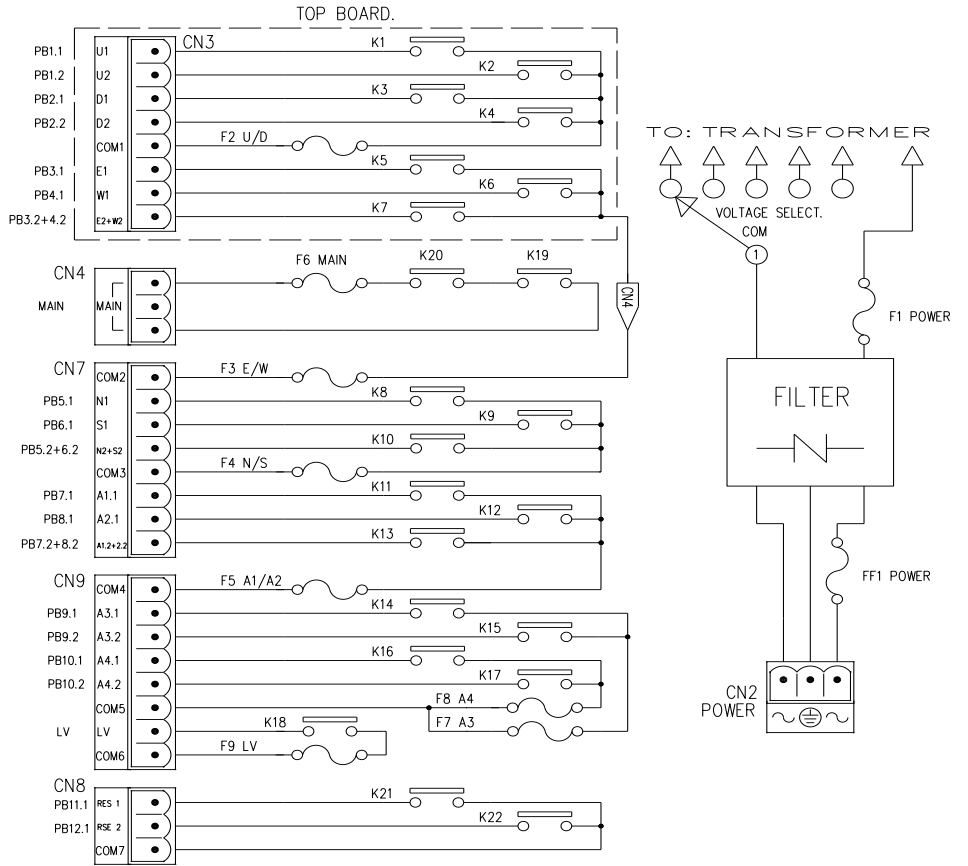
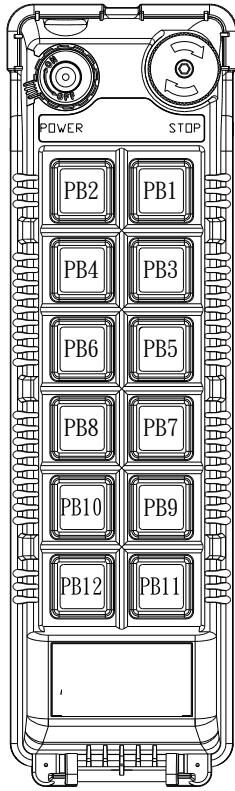
(Alpha 612C-1)



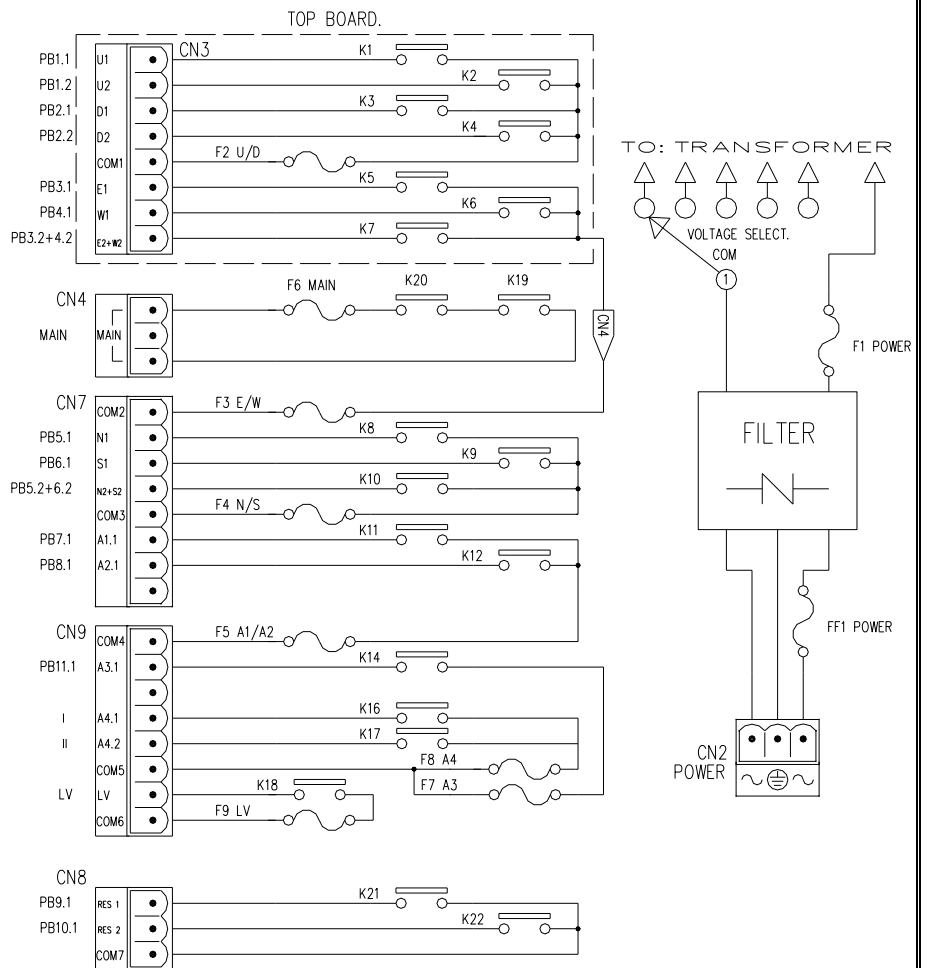
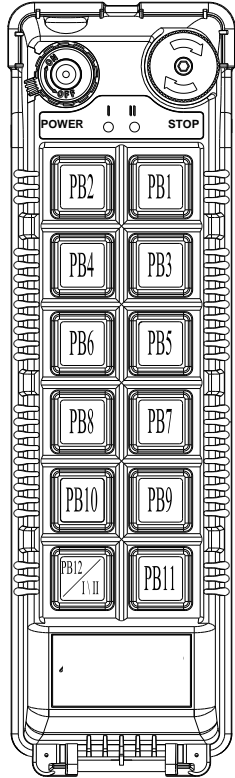
(Alpha612C-2)



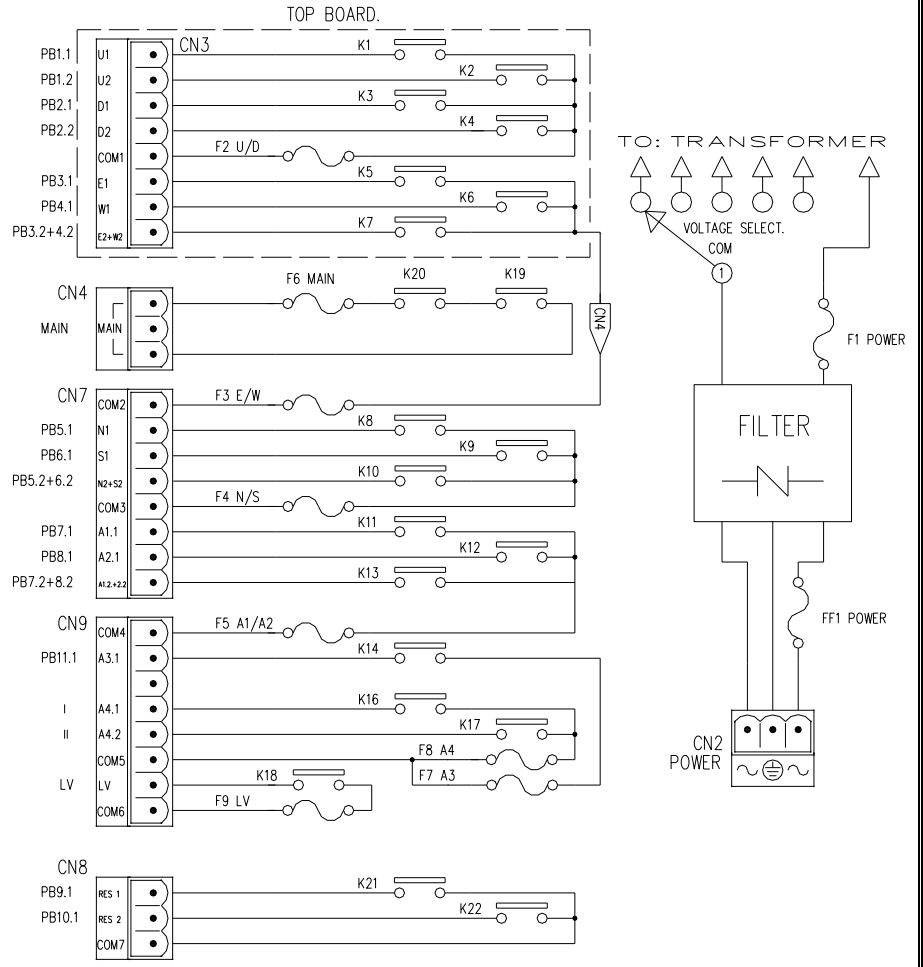
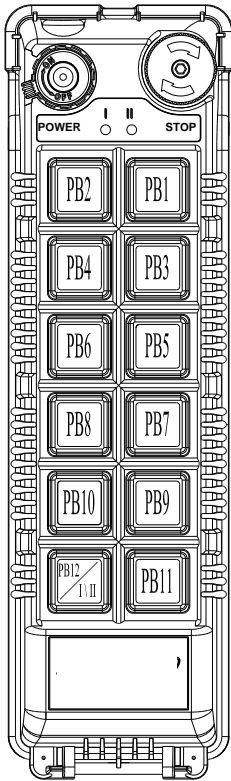
(Alpha 612D)



(Alpha 612E-1)



(Alpha 612E-2)



6. TRANSMITTER SETTINGS

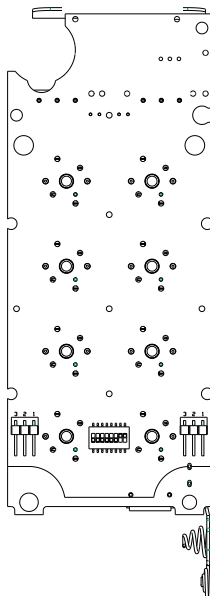
6.1 How to Set ID Codes

6.1.1 Set by programming tool

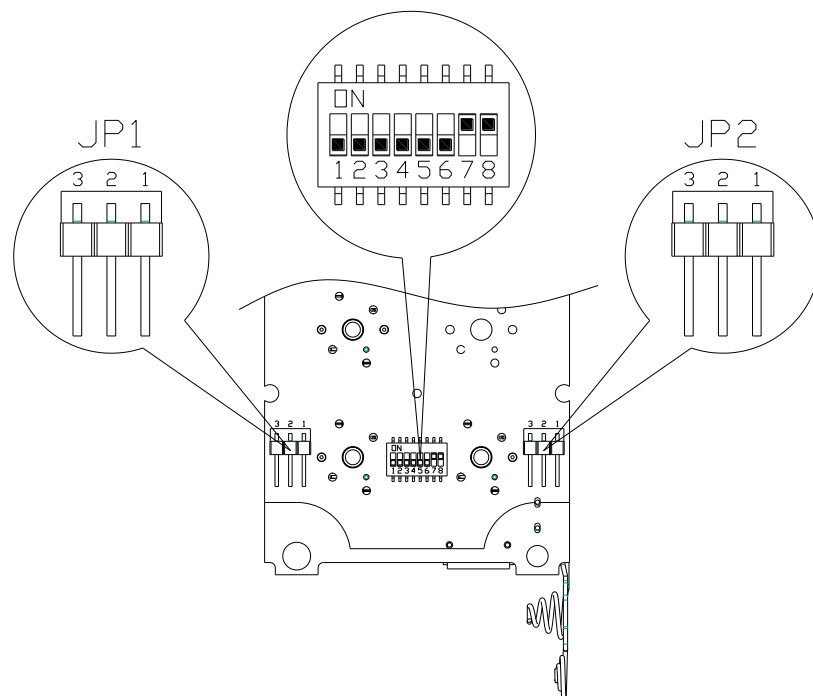
6.1.2 Set by encoder board JP1, 1st / 2nd pin and dip-switch

Setting Steps:

- (1) Rotate the transmitter power to OFF position
- (2) Remove the transmitter shock-absorbing rubber
- (3) Place the transmitter pushbutton side downward and unscrew the transmitter bottom casing.
- (4) Set the transmitter ID code with the dip-switch on the encoder board and put jumper on the 1st and 2nd pin of JP1.
- (5) Make sure the batteries are installed properly.
- (6) Rotate the transmitter power switch to ON position.
- (7) Green status LED ON for 0.1 sec, OFF for 0.1 sec, flash for 1 sec. (5 times)
- (8) Green status LED steady ON indicates the setting is completed. If the LED status light is changed to red, the setting is failed. Please repeat the above setting steps until the setting is successful.
- (9) After setting is completed and successful, remove short boot from the 1st and 2nd pin of JP1.
- (10) Rotate transmitter power switch to OFF position.



(Fig. 11) Back view



(Fig. 12) Position of dip-switch & jumpers

Top slot ON → “1”; bottom slot → “0”. The setting above is 00000011.

6.2 Transmitter Channel Settings

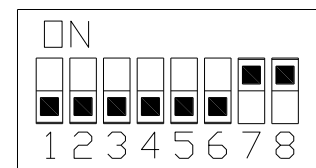
Transmitter channel settings (Select the channel you would like to operate. Do not exceed the channel limit)

6.2.1 Set by programming tool

6.2.2 Set by encoder board 2nd & 3rd pin of JP1 and dip-switch

To set the frequency on JP1 of TX board, put jumper on 2nd & 3rd pin of JP1. Set the frequency needed by changing the dip-switch setting. Repeat the previous steps to set another frequency.

Example : Set channel as 03→(0000011) → Correct setting



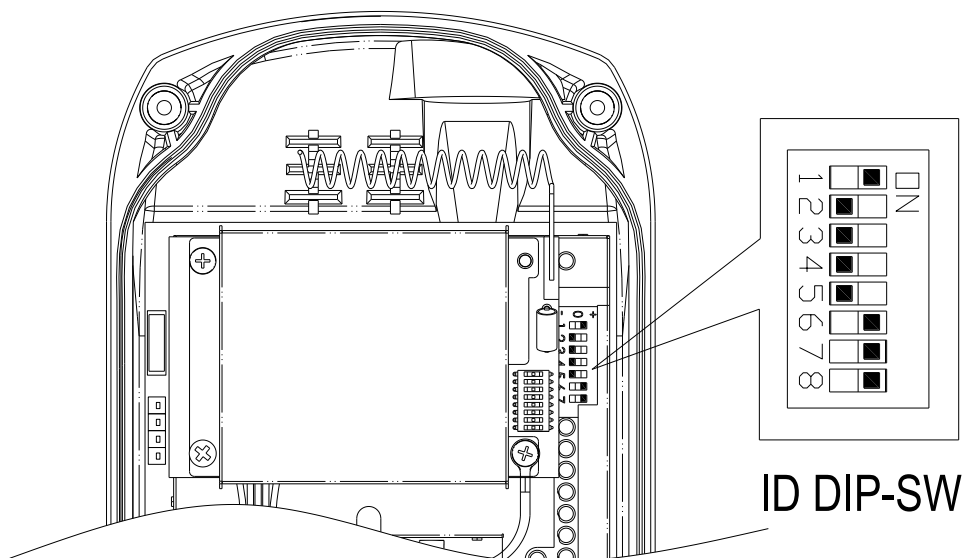
7. RECEIVER SETTINGS

7.1 How to set a604/607/608/612 Receiver ID Codes

7.1.1 How to set a604/607/608 Receiver ID Codes

Top slot → “1”

Bottom slot → “0”



Set the ID codes needed with the dip-switch on the decoder board. For example: the ID codes set above → 10000111.

7.1.2 How to set α612 Receiver ID Codes

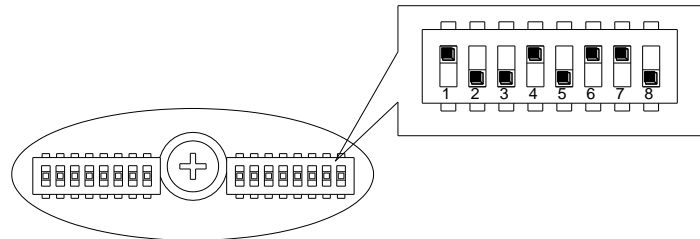
Please refer to Fig. 18 Internal Parts Assembly (Page 11) for 8-position ID code dip-switch to set receiver ID code.

Top slot → “1”; bottom slot → “0”

Set the ID codes needed on the decoder board dip-switch.

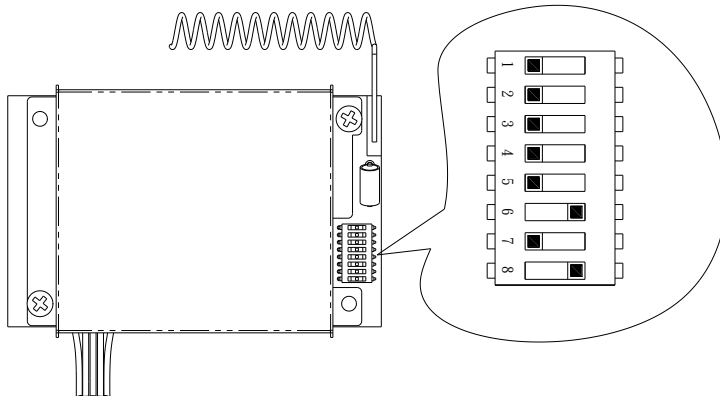
For example: the ID codes → 10010110

(“1” value adds up must to be “4”)



7.2 Receiver RF Channel Settings

There are 68 sets of user-adjustable receiving RF channels that can be set manually via an 8-position dip-switch located to the right of the receiving RF module. Change the receiving RF channel simply by resetting the 8-position dip-switch. For the location of the receiving RF module, please refer to fig. 7, 8, and 10 on page 8, 9, and 11.



Top slot → “1”; bottom slot → “0”

For example : the channel dip-switch set above → 00101, channel 05.

7.3 Receiver Function Settings

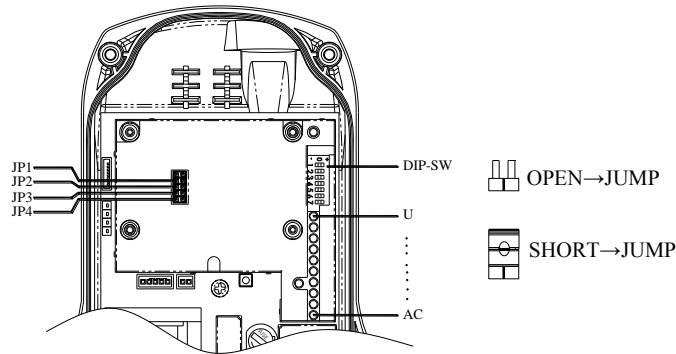
7.3.1 α 604/607/608 Receiver Function Settings

7.3.1.1 Set by programming tool

7.3.1.2. Adjust Jumper setting function by decoder board

Receiver function settings:

- Select any pushbutton or ON/OFF power switch to start the system. The MAIN relay will be activated when system is started. (After the receiver power is started and emergency stop button is elevated)
- The MAIN relay auto shutdown time can be set as 3 minutes or depends on customer's single request. (Remark 1)
- When transmitter voltage is low, relays for the receiver MAIN and LV (Remark 1) will be auto shutdown after one minute.



(Fig. 13) Alpha 607, 608 models

Jumper Set table: in-plant setting (default).

| | | |
|-----------------|-------|--|
| JP1 (Mode 0) | Open | The 7 th pushbutton (AUX) start (when MAIN is off) |
| | Short | Power switch start (when MAIN is off) |
| JP1 (Mode 1) | | Power switch start |
| JP2 | Open | No auto shutdown time on Main relay |
| | Short | The receiver MAIN will be deactivated after consecutive 5 minutes of standby time. |
| JP3 | Open | When the transmitter voltage is low, LV relay activates/deactivates every second. |
| | Short | * 4 pushbuttons: When either relay of pushbutton 1~4 is activated, LV relay will also be activated. * 8 pushbuttons: When either relay of pushbutton 1~6 is activated, LV relay will also be activated. * 12 pushbuttons: When either relay of pushbutton 1~8 is activated, LV relay will also be activated. |
| JP4 | Open | 7 th AUX: "Normal" pushbutton setting |
| | Short | 7 th AUX: "Toggle" pushbutton setting |

"start" means: MAIN relay unlatches and then latches.

※ Open → no Jumper

Short → put Jumper

Remark 1 : The setting of auto shutdown time can be done by manufacturer or distributor. Setting range:
0~30 minutes. (In-plant setting: 5 minutes)

Remark 2 : When the transmitter voltage is low, LV relay will be activated and siren or lights will be ON.
(One second of interval)

Remark 3 : Every time when you change jumper settings you must first turn the receiver power off and then turn it back on so that the new settings can be stored in memory.

7.3.2 α 612 Receiver Function Settings

7.3.2.1 Set by programming tool

7.3.2.2. Adjust Jumper setting function by decoder board

Receiver function settings:

Jumper Set table: In-plant setting (default).

| | | |
|-----------------|-------|--|
| JP1 | Open | The 9th pushbutton (AUX) start (when MAIN is off) |
| | Short | Power switch start (when MAIN is off) |
| JP2 (Mode 0) | Open | No auto shutdown time on Main relay |
| | Short | The receiver MAIN will be deactivated after consecutive 5 minutes of standby time. |
| JP3 | Open | When the transmitter voltage is low, LV relay activates/deactivates every second. |
| | Short | When either relay of pushbutton 1~8 is activated, LV relay will also be activated. |

“start” means: MAIN relay unlatches and then latches.

※ *Open* → *No jumper*

Short → *Put Jumper*

Remark 1 : The setting of auto shutdown time can be done by manufacturer or distributor. Setting range:
0~30 minutes. (In-plant setting: 5 minutes)

Remark 2 : When the transmitter voltage is low, LV relay will be activated and siren or lights will be ON.
(One second of interval)

Remark 3 : Every time when you change jumper settings you must first turn the receiver power off and then turn it back on so that the new settings can be stored in memory.

7.3.3 Alpha 612 Models Dip-Switch Function Table

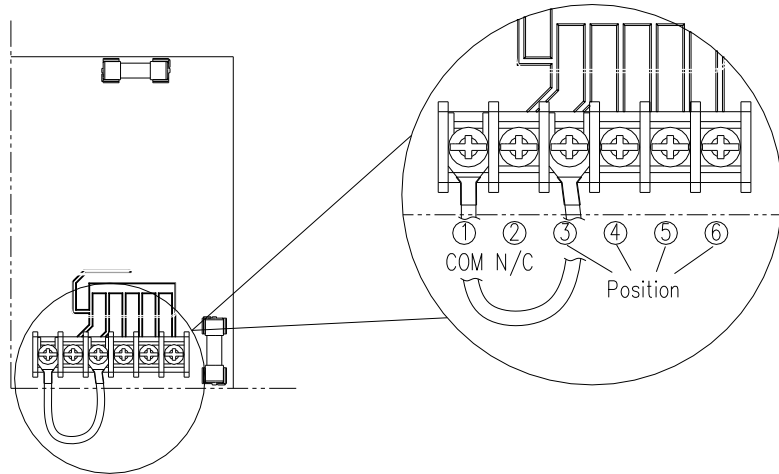
| Model | Pushbutton | Dip-Switch Setting | | Description |
|-------|----------------------------------|--------------------|--|---|
| 612A | 1 & 2 3 & 4 5 & 6 | DIP 1 | → 1 Not Interlocked | |
| | | | → 0 Interlocked | |
| | 7 & 8 | DIP 2 | → 1 Not Interlocked | |
| | | | → 0 Interlocked | |
| | 7 & 8 | DIP 3 | → 1 Latching/toggle relay contact | DIP2 Set at “1” |
| | | | → 0 Momentary relay contact | |
| | 9 & 10 | DIP 4 | → 1 Not Interlocked | |
| | | | → 0 Interlocked | |
| 612B | 9 | DIP 5 | → 1 Latching/toggle relay contact | DIP4 Set at “1” |
| | | | → 0 Momentary relay contact | |
| | 10 | DIP 6 | → 1 Latching/toggle relay contact | DIP4 Set at “1” |
| | | | → 0 Momentary relay contact | |
| 612B | 7 & 8 | DIP 1 | → 1 Not Interlocked | |
| | | | → 0 Interlocked | |
| | 7 | DIP 2 | → 1 Latching/toggle relay contact | DIP4 Set at “1” |
| | | | → 0 Momentary relay contact | |
| | 8 | DIP 3 | → 1 Latching/toggle relay contact | DIP4 Set at “1” |
| | | | → 0 Momentary relay contact | |
| | 9 | DIP 4 | → 1 Latching/toggle relay contact | |
| | | | → 0 Momentary relay contact | |
| 612C | 1 & 2 (2 nd speed) | DIP 1 | → 1 Both 1 st and 2 nd speed contact relay interlocked when pressed to 2 nd speed | Both 1 st and 2 nd speed contact relays activated |
| | | | → 0 Both 1 st and 2 nd speed contact relay activated when pressed to 2 nd speed | Only 2 nd speed contact relay activated |
| | 9 | DIP 2,3 | → 00 Momentary relay contact | |

| | | | | |
|-----------------------------|----------------------------------|-----------|--|---|
| | | DIP 2,3 | → 01 Latching/toggle relay contact | |
| | | DIP 2,3 | → 10 Activate the 3 rd speed | |
| | 10 | DIP 4 | → 1 Latching/toggle relay contact | |
| | | | → 0 Momentary relay contact | |
| 612D | 1 & 2 (2 nd speed) | DIP 1 | → 1 Both 1 st and 2 nd speed contact relay interlocked when pressed to 2 nd speed | Both 1 st and 2 nd speed contact relays activated |
| | | | → 0 Both 1 st and 2 nd speed contact relay activated when pressed to 2 nd speed | Only 2 nd speed contact relay activated |
| | --- | DIP 2,3,4 | →0 Momentary relay contact | DIP2&3 Must set to "0" all the time (In-plant set at "0") |
| 612E | 1 & 2 (2 nd speed) | DIP 1 | → 1 Both 1 st and 2 nd speed contact relay interlocked when pressed to 2 nd speed | Both 1 st and 2 nd speed contact relays activated |
| | | | → 0 Both 1 st and 2 nd speed contact relay activated when pressed to 2 nd speed | Only 2 nd speed contact relay activated |
| | 7 & 8 | DIP 2 | → 1 Not Interlocked | |
| | | | → 0 Interlocked | |
| | 7 | DIP 3 | → 1 Latching/toggle relay contact | DIP2 Set at "1" |
| → 0 Momentary relay contact | | | | |
| 612 A/B/C/D/E | 11 | DIP 7 | → 1 Latching/toggle relay contact | |
| | | | → 0 Momentary relay contact | |
| | 12 | DIP 8 | → 1 Latching/toggle relay contact | |
| | | | → 0 Momentary relay contact | |

※ In-plant all set at "0"

7.3.4 Alpha 612 Receiver Voltage Settings

1. Select the voltage of the place where the receiver is installed.
2. Select the position of the “Y” terminal base on the label marked on the transformer.
If the default voltage setting is different from the place where the receiver is installed, please change the setting base on below steps:
 - 2.1 Please first refer to below figure. Keep the “COM” end of the wire in the position as it is, remove the “Y” terminal from the other end of the wire, then screw the position originally with “Y” terminal tightly.
 - 2.2 Select the voltage needed base on the label of the transformer. Unscrew the position selected, put the “Y” terminal into the position selected and screw it tightly.



Transformer type no. : K-2367

- Position ③ AC 110V → AC 100V ~ AC 125V
- Position ④ AC 240V → AC 200V ~ AC 240V

Transformer type no. : K-2368

- Position ⑤ AC 380V → AC 350V ~ AC 380V
- Position ⑥ AC 460V → AC 400V ~ AC 460V

Transformer type no. : SSB-2665

- Position ③ AC 24 V
- Position ④ AC 36 V
- Position ⑤ AC 42 V
- Position ⑥ AC 48 V

3. Please make sure that the wire and the 5 screws are securely screwed.

7.4 Frequency (RF) Channels Table

| Band 301MHz | Dip-Switch Setting | Channel |
|-------------|--------------------|---------|
| 301.105 MHz | 00000001 | 01 |
| 301.130 MHz | 00000010 | 02 |
| 301.155 MHz | 00000011 | 03 |
| 301.180 MHz | 00000100 | 04 |
| 301.205 MHz | 00000101 | 05 |
| 301.230 MHz | 00000110 | 06 |
| 301.255 MHz | 00000111 | 07 |
| 301.280 MHz | 00001000 | 08 |
| 301.305 MHz | 00001001 | 09 |
| 301.330 MHz | 00001010 | 10 |
| 301.355 MHz | 00001011 | 11 |
| 301.380 MHz | 00001100 | 12 |
| 301.405 MHz | 00001101 | 13 |
| 301.430 MHz | 00001110 | 14 |
| 301.455 MHz | 00001111 | 15 |
| 301.480 MHz | 00010000 | 16 |
| 301.505 MHz | 00010001 | 17 |
| 301.530 MHz | 00010010 | 18 |
| 301.555 MHz | 00010011 | 19 |
| 301.580 MHz | 00010100 | 20 |
| 301.605 MHz | 00010101 | 21 |
| 301.630 MHz | 00010110 | 22 |
| 301.655 MHz | 00010111 | 23 |
| 301.680 MHz | 00011000 | 24 |
| 301.705 MHz | 00011001 | 25 |
| 301.730 MHz | 00011010 | 26 |
| 301.755 MHz | 00011011 | 27 |
| 301.780 MHz | 00011100 | 28 |
| 301.805 MHz | 00011101 | 29 |
| 301.830 MHz | 00011110 | 30 |
| 301.855 MHz | 00011111 | 31 |
| 301.880 MHz | 00100000 | 32 |
| 301.905 MHz | 00100001 | 33 |
| 301.930 MHz | 00100010 | 34 |

| Band 301MHz | Dip-Switch Setting | Channel |
|-------------|--------------------|---------|
| 301.955 MHz | 00100011 | 35 |
| 301.980 MHz | 00100100 | 36 |
| 302.005 MHz | 00100101 | 37 |
| 302.030 MHz | 00100110 | 38 |
| 302.055 MHz | 00100111 | 39 |
| 302.080 MHz | 00101000 | 40 |
| 302.105 MHz | 00101001 | 41 |
| 302.130 MHz | 00101010 | 42 |
| 302.155 MHz | 00101011 | 43 |
| 302.180 MHz | 00101100 | 44 |
| 302.205 MHz | 00101101 | 45 |
| 302.230 MHz | 00101110 | 46 |
| 302.255 MHz | 00101111 | 47 |
| 302.280 MHz | 00110000 | 48 |
| 302.305 MHz | 00110001 | 49 |
| 302.330 MHz | 00110010 | 50 |
| 302.355 MHz | 00110011 | 51 |
| 302.380 MHz | 00110100 | 52 |
| 302.405 MHz | 00110101 | 53 |
| 302.430 MHz | 00110110 | 54 |
| 302.455 MHz | 00110111 | 55 |
| 302.480 MHz | 00111000 | 56 |
| 302.505 MHz | 00111001 | 57 |
| 302.530 MHz | 00111010 | 58 |
| 302.555 MHz | 00111011 | 59 |
| 302.580 MHz | 00111100 | 60 |
| 302.605 MHz | 00111101 | 61 |
| 302.630 MHz | 00111110 | 62 |
| 302.655 MHz | 00111111 | 63 |
| 302.680 MHz | 01000000 | 64 |
| 302.705 MHz | 01000001 | 65 |
| 302.730 MHz | 01000010 | 66 |
| 302.755 MHz | 01000011 | 67 |
| 302.780 MHz | 01000100 | 68 |

| Band 433MHz | Dip-Switch Setting | Channel |
|--------------------|---------------------------|----------------|
| 433.075 MHz | 00000001 | 01 |
| 433.100 MHz | 00000010 | 02 |
| 433.125 MHz | 00000011 | 03 |
| 433.150 MHz | 00000100 | 04 |
| 433.175 MHz | 00000101 | 05 |
| 433.200 MHz | 00000110 | 06 |
| 433.225 MHz | 00000111 | 07 |
| 433.250 MHz | 00001000 | 08 |
| 433.275 MHz | 00001001 | 09 |
| 433.300 MHz | 00001010 | 10 |
| 433.325 MHz | 00001011 | 11 |
| 433.350 MHz | 00001100 | 12 |
| 433.375 MHz | 00001101 | 13 |
| 433.400 MHz | 00001110 | 14 |
| 433.425 MHz | 00001111 | 15 |
| 433.450 MHz | 00010000 | 16 |
| 433.475 MHz | 00010001 | 17 |
| 434.000 MHz | 00010010 | 18 |
| 434.025 MHz | 00010011 | 19 |
| 434.050 MHz | 00010100 | 20 |
| 434.075 MHz | 00010101 | 21 |
| 434.100 MHz | 00010110 | 22 |
| 434.125 MHz | 00010111 | 23 |
| 434.150 MHz | 00011000 | 24 |
| 434.175 MHz | 00011001 | 25 |
| 434.200 MHz | 00011010 | 26 |
| 434.225 MHz | 00011011 | 27 |
| 434.250 MHz | 00011100 | 28 |
| 434.275 MHz | 00011101 | 29 |
| 434.300 MHz | 00011110 | 30 |
| 434.325 MHz | 00011111 | 31 |
| 434.350 MHz | 00100000 | 32 |
| 434.375 MHz | 00100001 | 33 |
| 434.400 MHz | 00100010 | 34 |

| Band 433MHz | Dip-Switch Setting | Channel |
|--------------------|---------------------------|----------------|
| 434.425 MHz | 00100011 | 35 |
| 434.450 MHz | 00100100 | 36 |
| 434.475 MHz | 00100101 | 37 |
| 434.500 MHz | 00100110 | 38 |
| 434.525 MHz | 00100111 | 39 |
| 434.550 MHz | 00101000 | 40 |
| 434.575 MHz | 00101001 | 41 |
| 434.600 MHz | 00101010 | 42 |
| 434.625 MHz | 00101011 | 43 |
| 434.650 MHz | 00101100 | 44 |
| 434.675 MHz | 00101101 | 45 |
| 434.700 MHz | 00101110 | 46 |
| 434.725 MHz | 00101111 | 47 |
| 434.750 MHz | 00110000 | 48 |
| 434.775 MHz | 00110001 | 49 |
| 433.325 MHz | 00110010 | 50 |
| 433.350 MHz | 00110011 | 51 |
| 433.375 MHz | 00110100 | 52 |
| 433.400 MHz | 00110101 | 53 |
| 433.425 MHz | 00110110 | 54 |
| 433.450 MHz | 00110111 | 55 |
| 433.475 MHz | 00111000 | 56 |
| 433.500 MHz | 00111001 | 57 |
| 433.525 MHz | 00111010 | 58 |
| 433.550 MHz | 00111011 | 59 |
| 433.575 MHz | 00111100 | 60 |
| 433.600 MHz | 00111101 | 61 |
| 433.625 MHz | 00111110 | 62 |
| 433.650 MHz | 00111111 | 63 |
| 433.675 MHz | 01000000 | 64 |
| 433.700 MHz | 01000001 | 65 |
| 433.725 MHz | 01000010 | 66 |
| 433.750 MHz | 01000011 | 67 |
| 433.775 MHz | 01000100 | 68 |

8. TRANSMITTER OPERATION & STATUS LIGHT

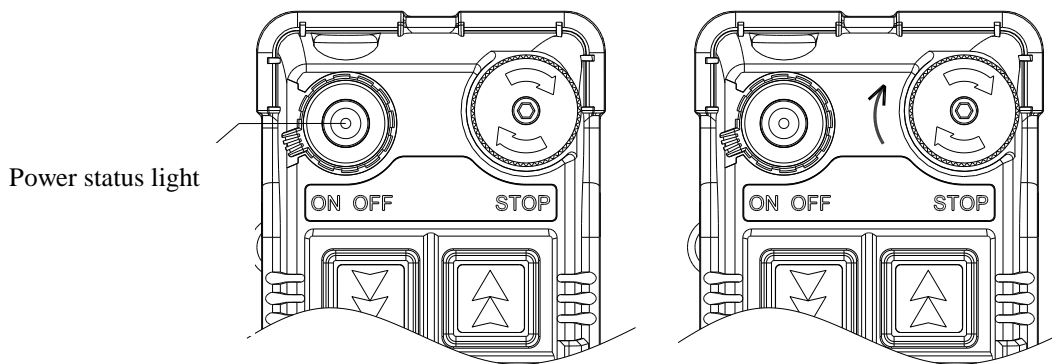
8.1 Transmitter Operating Steps

1. Make sure the two “AA” NiMH rechargeable batteries are installed correctly. Please note the polarity of the batteries.
2. **Status lights** _To operate the transmitter, please rotate the power key on the top-left corner clockwise to “on” position. The status LED (green and red) will be steady “on” for 2 seconds and then “off”. If the transmitter Status LED displays a red blinking light that is “on” → 0.1 second and “off” → 1.9 seconds, or no light at all, this indicates the transmitter with batteries needs to be recharged. For battery charging or replacement, please refer to instruction next page.
3. When any function pushbutton is depressed, the transmitter Status LED displays a red blinking light that is “on”→ 0.1 second and “off”→ 1.9 seconds. If the voltage is low, the transmitter Status LED will be “on”→0.1 second and “off”→1.9 seconds, this indicates the transmitter with batteries needs to be recharged. Continuous operation will cause the transmitter battery power exhausting and cannot operate at all.
4. **EMS & Restarting** _ In case of an emergency, press down the red emergency stop button (EMS) will immediately deactivates the transmitter and receiver MAIN relay. (do not rotate the power switch to OFF first)

Shutting Off the Transmitter(POS) _ (Mode 0) To disconnect the transmitter power just turn the power key to “off” position. When the power key is switched from “on” to “off”, the transmitter will also send a “Stop” command to the receiver for 3 seconds, the red status light flashes 3 times and at the same time deactivate the MAIN relay.

Shutting Off the Transmitter(POS) _ (Mode 1) To disconnect the transmitter power just turn the power key to “off” position. When the power key is switched from “on” to “off”, the transmitter will also send a “Stop” command to the receiver for 3 seconds and at the same time deactivate the MAIN relay.

5. The emergency stop button is a right-rotate momentary spring-return type. To turn on the transmitter and activate the MAIN relay, please elevate the emergency stop button again and rotate the transmitter power key to “ON” position.
6. Note that the transmitter cannot be hit by outer force, so that malfunction can be prevented.
7. The operating temperature is $-10 \sim +70^{\circ}\text{C} (\pm 10^{\circ}\text{C})$. Avoid operating the transmitter in high temperature workshop. If operating temperature is higher than $70^{\circ}\text{C} \pm 10^{\circ}\text{C}$, the auto shutdown protection installed inside CPU will shut down the transmitter and deactivate the MAIN relay.
8. To operation normally, the battery power must over 2.2V. If the voltage is lower than 2.2V, the system cannot be started and low voltage will be showed until the MAIN is completely shutdown.
9. If the power voltage is lower than 2.2V when transmitter is operated, the LV code will be “1” and low voltage status light will be shown. The transmitter will stop sending signals when voltage is lower than 2.0V.



STOP: press → lock (emergency stop)

STOP : Elevate clockwise → reset (Turn on the transmitter at any time)

8.2 Transmitter Status Light

| Type | Status | Problem | LED Indication |
|------|-------------------------------|---|--|
| 1 | Charging | Place transmitter into charger | Red light ON |
| 2 | Power on when voltage is low | BATT<2.2V | Red light flash ON_0.1/OFF_1.9 sec (until power off) |
| 3 | Setting failed or invalidated | Set data by using JUMPER & dip-switch without following rules | Red light ON_0.1/OFF_0.1 sec |
| 4 | Setting completed | JP1 or JP2 inserted | Green light ON until power off. |
| 5 | EEPROM ID error | EEPROM ID code does not match CPU data | Red light ON until power off |
| 6 | RF module abnormal | PLL UNLOCK | Red light ON_0.1/OFF_0.1 sec |
| 7 | ID even number error | Setting error | Red light ON_1/OFF_1 sec |
| 8 | Pushbutton locked | Power on pushbutton connected | Red light ON_1.9/OFF_0.1 sec (until power off) |
| 9 | Normal power on | BATT>=2.2V and all the pushbuttons are not depressed | All the lights ON_2 sec |
| 10 | STOP status | STOP button is pressed | MODE 0: Red light ON_0.5/ OFF_0.5sec, flash 30sec. MODE 1: all the lights OFF |
| 11 | Low voltage during operation | BATT<2.2V and press pushbutton | Red light flash ON_0.1/OFF_1.9sec |

| | | | |
|----|-----------------------------|---|--|
| 12 | High temperature protection | encoder board temperature higher than 80°C | Press and hold the pushbutton: Blinking blinks ON_0.05/OFF_0.15 second All pushbutton released: All lights are off |
| 13 | FSI mode | Activate MSS/FSI function: Depress FAN+SAFETY button and hold for more than 2 seconds. | Blinking red light, green light ON_0.1/OFF_0.1 second |
| 14 | Normal operation | Press pushbutton | Green light flash ON_0.1/OFF_1.9 sec |

Remark:

Under high temperature protection, all pushbuttons depressed are sending empty commands and all relays are off. When the high temperature protection is functioning, keep the transmitter away from high temperature environment and shut the power off. The function of high temperature protection can be deactivated only when the transmitter temperature is back to normal and restarted.

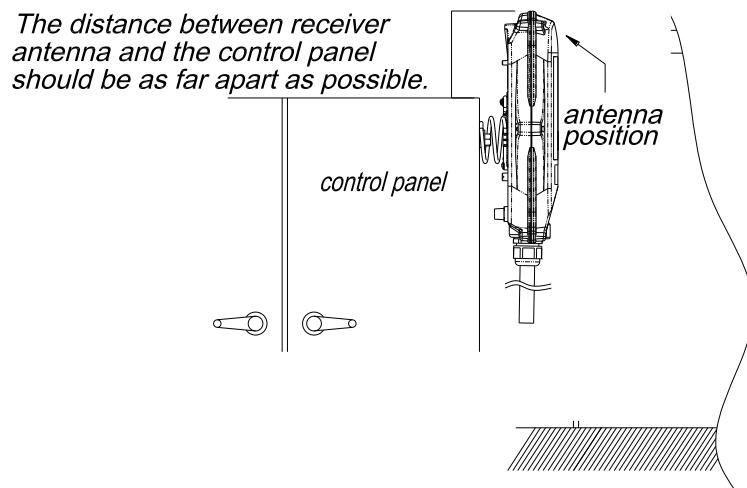
9. RECEIVER INSTALLATION

9.1 Preparation for Installation

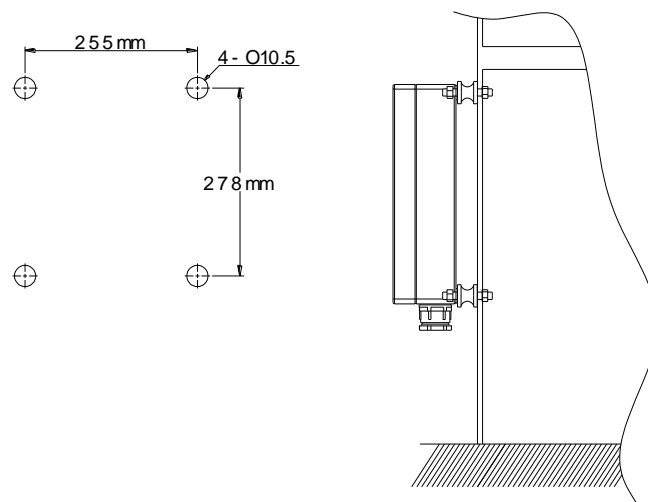
1. Required Tools for Receiver Installation:
 - (1) Flat Head Screwdriver (-)
 - (2) Phillips Head Screwdriver (+)
 - (3) Multi-Meter
 - (4) 14mm Wrench x 2
 - (5) Power Drill with φ 10.5mm Drill-Bit
2. Check to ensure that your receiver is not set to the same RF channel and ID code as any other systems in operation at the same facility or within 300-meter distance.
3. Prior to installation, make sure that the crane or equipment itself is working properly.
4. Use a multi-meter to check the voltage source available and ensure the receiver voltage setting matches your power source.
5. Prior to installation, switch off the main power source to the crane or equipment.

9.2 Step By Step Installation

1. For better reception, the location selected should have the antenna visible from all areas where the transmitter is to be used.
2. The location selected should not be exposed to high levels of electrical noise. Mounting the receiver next to an unshielded variable frequency control (inverter) may cause minor interference. Always locate the receiver unit as far away from inverter controls as possible.
3. Ensure the selected location has adequate space to accommodate the receiver enclosure.
4. Make sure the receiver unit is in upright position (vertical).
5. The distance between the antenna and the control panel should be as far apart as possible (refer to the fig.14 & 15 on page 30).
6. If a crane or equipment's runway is longer than 100 meters, an external antenna should be added. The Alpha 608 receiver housing has provisions for an external factory installed antenna available as an option, contact your dealer for price and delivery.
7. Drill a hole on the control panel (10.5mm).
8. Tightened the bolt nuts provided.
9. **If the control panel has a plastic surface, extended grounding wire should be used.**
10. For system wiring, please refer to the output contact diagrams from page 13.
11. Ensure all wiring is correct and safely secured and all screws are fastened.



(Fig. 14) Alpha 604, 607, 608 Models

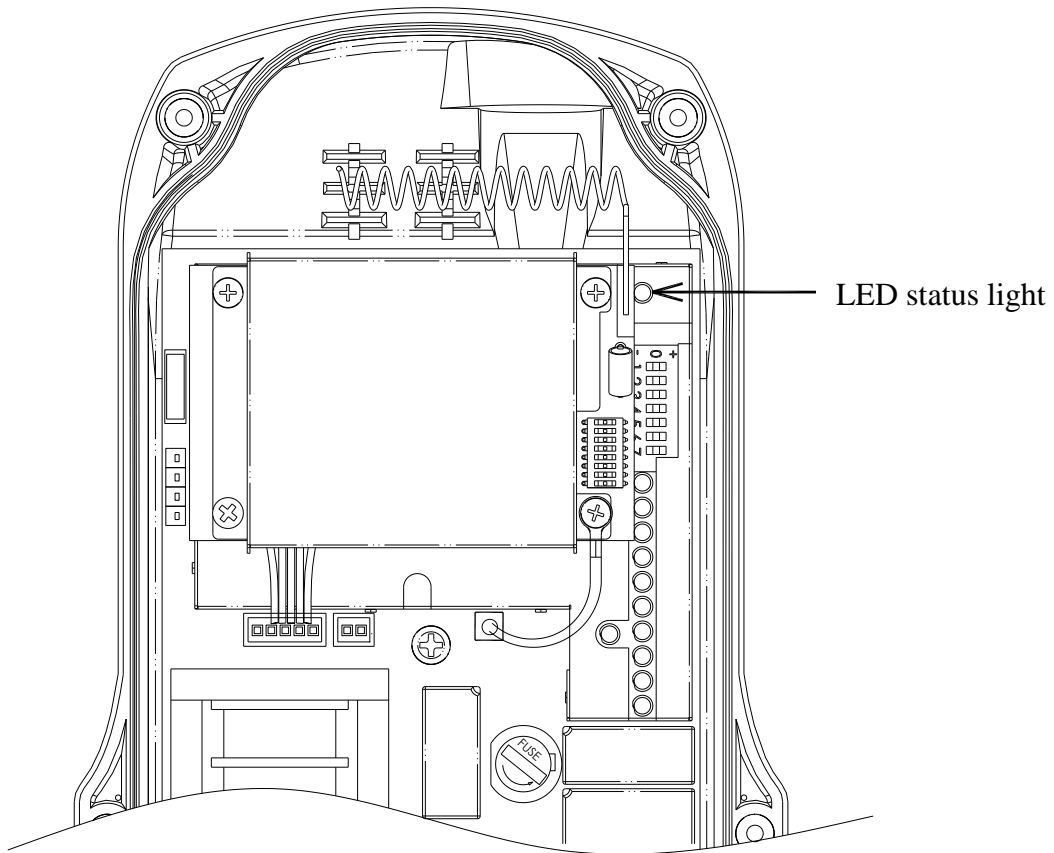


(Fig. 15) Alpha 612 Models

9.3 System Testing

1. Connect the power source to the receiver and test the MAIN relay output by pressing the red emergency stop button (EMS) and observe that it properly opens and closes the main line disconnect contactor.
2. Test the operation of each function to ensure it corresponds to the transmitter direction labels and/or the pendant it is replacing.
3. Test the limit switches on the hoist and/or crane and verify they are working properly.
4. If your new remote control is replacing an existing pendant, make sure it is completely disconnected to prevent unwanted control commands, i.e. snick circuits.
5. If your new remote control is replacing an existing pendant make sure it is stored in a safe location where it will not interfere with remote operation (get torn off).

9.4 Receiver system Status LED Display



Receiver system Status LED Display

| Type | Led Indication | Problem and Solution |
|------|--------------------------------------|---|
| 1 | Constant red light. | EEPROM error – reprogramming required. |
| | | Incorrect receiver ID code setting (see note below). |
| 2 | ON → 1.0 second OFF → 1.0 second | ID code not matched on both the transmitter and receiver unit, please readjust accordingly. |
| 3 | Dim or no light. | Under-voltage, check the main power-supply. |
| 4 | ON → 2.0 seconds OFF → 0.1 second | MAIN contact relay jammed or defective. |
| 5 | ON → 0.1 second OFF → 2.0 seconds | System normal with transmitter pushbutton either in neutral or in transmitter power “off” position. |
| 6 | ON → 0.1 second OFF → 0.1second | System normal with transmitter pushbutton in non-neutral position (pushbutton depressed). |

Note: Please refer to section 7.1 on page 20 for correct ID code setting.

9.4.1 Alpha 612 Receiver System Status LED Display

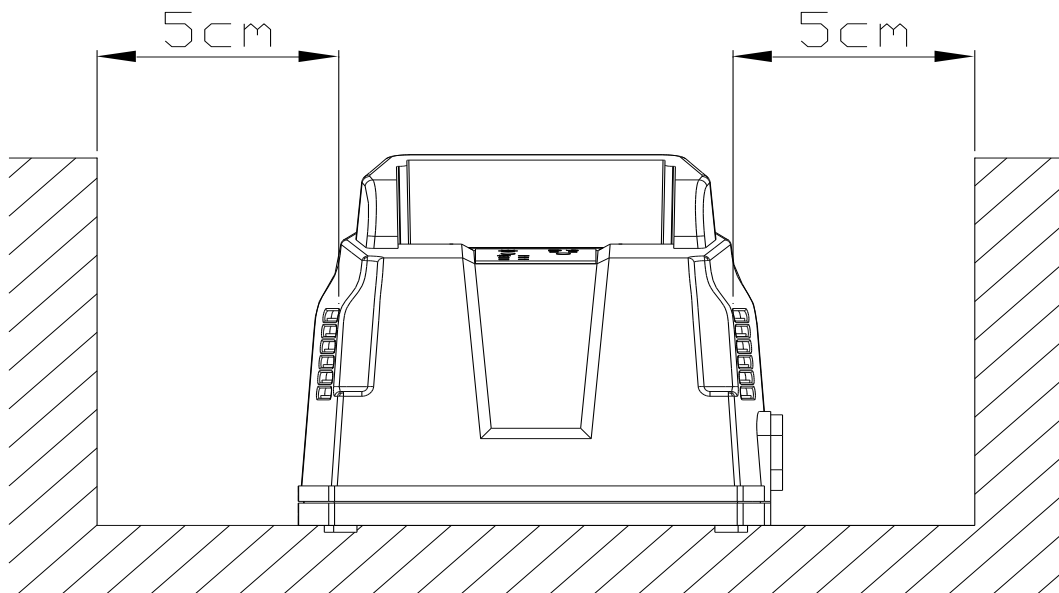
| Led Indication | | Reason | Solution |
|------------------------|-------|---|-------------------------|
| Power LED display | ON | Normal-voltage | |
| | OFF | Under-voltage | |
| SQ, Status LED display | ON | Transmitted signals detected and received | |
| | OFF | No transmitting signal detected | |
| | BLINK | 1.Transmitter standby | Turn on the transmitter |
| 2.Interference | | Turn off the transmitter | |
| Relay LED display | ON | Normal operation | |
| | OFF | Receiver defective | Repair decoder board |

10. BATTERY CHARGER

10.1 Charger Operation

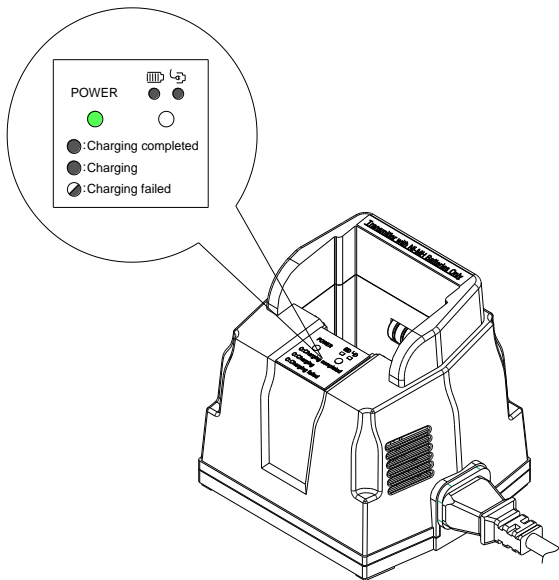
Electromagnetic Induction Charge

- The electromagnetic induction charger with undisclosed metal charging contacts on transmitter provides immediate charging simply by sliding the transmitter into the charger. No need to open the battery cover to replace batteries.
- To avoid rain, high temperature, humidity and corroding air, please place or install the battery charger indoor with good ventilation. Keep 5cm space for two sides of the charger to keep the heat out. The suggesting temperature range is 0 ~ 40°C.

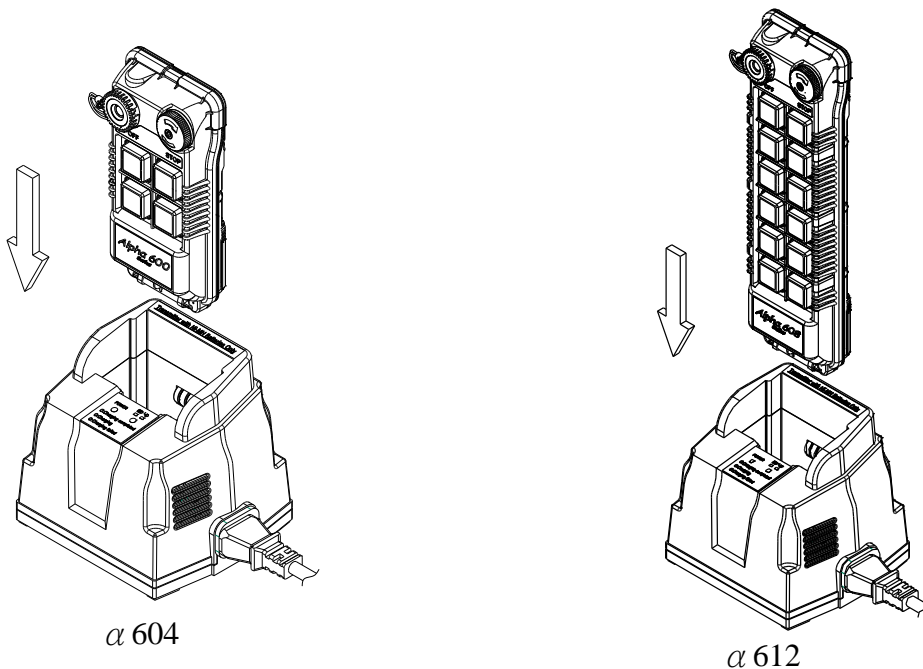


(Fig. 16) Front view

- Battery charger voltage AC100~240V 50/60Hz, power consumption 10W ◦
- Use Nickel-Metal low self-discharge Hydride (NI-MH) 2000mA, AA size*2 rechargeable batteries. Charging can be completed in 5 hours.
- Set the power switch on the OFF position whenever transmitter is not operated. Press E-STOP button and slide-in the transmitter into the charger to charge. The transmitter is suggested to be charged whenever it is not operated. The power switch should be rotated to OFF position while charging, otherwise charging cannot be proceeded.
- The charger status light shows red when transmitter is charging; transmitter status light will be off when charging is completed or failed. Please refer to below Battery Charger LED Status Light for details. After charging is completed, the charger status light shows green.
- Charger power LED: green



Slide-in transmitter into battery charger (transmitter vinyl protective cover has to be taken off)



※ Note: The rechargeable battery has to be recharged within 6 months after the manufacturing date.

10.2 Battery Charger LED Status Light

| Item | Status | Condition | Status Light |
|------|--------------------|---|----------------------------|
| 1 | Startup check | Within 2 seconds after power is on | Red + Green LED for 2 sec |
| 2 | Charging failed | No battery inside transmitter battery holder or non-rechargeable battery is used. | Red LED OFF_0.1/ON_1.9 sec |
| 3 | Charging | Charging procedure is normal | Red LED ON |
| 4 | Charging completed | Charging procedure is completed | Green LED ON |
| 5 | Standby | No transmitter in the charger | Not lit |

11. TROUBLE SHOOTING

Should the operator find the equipment not operating normally, please check the chart below for simple trouble shooting tips.

| Problem | Possible Reason | Solution |
|---|---|--|
| Transmitter does not communicate with the receiver. | Transmitter and the receiver are not on the same RF channel (SQ lamp not lit) or ID code. | Ensure the correct transmitter is in use. The labels on the receiver and the transmitter will identify the RF channel and ID code in use. |
| Transmitter does not communicate with the receiver. | Low or no transmitting power from the transmitter unit. | Turn “on” the transmitter with EMS elevated. If the status LED shows blinking red light or no light at all, then turn the power “off” and replace the two alkaline “AA” batteries. |
| No power to the receiver (AC power indicator on the receiver unit not lit). | Blown fuse or no input power connection. | Ensure power input to the receiver unit is correct. If the power indicator (AC) is still not lit, please check the receiver for any open fuse. |
| Outputs do not operate correctly. | Receiver configuration is not set properly or output wiring is incorrect. | Please refer to section 6 and 7 to ensure receiver is correctly wired and configured for your application. |
| Transmitter does not communicate with the receiver. | Transmitter is turned on with the EMS activated (pressed down). | Elevate the EMS first and then turn the power switch off and then on again. |

12. **SYSTEM SPECIFICATION**

Transmitter Unit

| | | |
|--------------------------------|---|---|
| Source Voltage | : | Ni-MH AA size x 2 battery 2.4V (no contact charging) Or AA alkaline x 2 batteries 3.0V |
| Antenna Impedance | : | Internal Antenna 50 ohms. External antenna is available. |
| Dimension | : | 604 Models : 140mm x 68mm x 30mm 607, 608 Models: 189mm x 68mm x 30mm 612 Models : 235mm x 68mm x 30mm |
| Weight | : | 604 Models : 220g (include batteries) 607, 608 Models: 280g (include batteries) 612 Models : 350g (include batteries) |
| Enclosure Rating | : | IP-65 |
| Operating Temperature | : | -10 ~ +60°C (> 80°C high temperature protection) |
| Transmitting Power Consumption | : | < 30mA @ 3.5V (Various from encoding mode and transmitting power) |
| Continue Operating Time | : | > consecutive 100hrs @batteries full (2000mA), Band 301, 433MHz, Transmitting Power 1mW |

Transmitting RF Board Unit

| | | |
|-----------------------|---|---------------|
| Frequency Range | : | 301, 433 MHz |
| Transmitting Power | : | 0.1 mW – 10mW |
| Frequency Control | : | TCXO + PLL |
| Frequency Deviation | : | < 1ppm @ 25°C |
| Spurious Emission | : | < - 50dB |
| Emission | : | F1D |
| Antenna Impedance | : | 50 ohms |
| Operating Temperature | : | -10°C ~ +60°C |
| LV Voltage | : | 2.2V – 2.0V |

Charger Unit

| | | |
|-----------------------|---|----------------------------|
| Dimension | : | 120mm x 105mm x 105mm |
| Voltage | : | 100~240V 50/60Hz |
| Power Consumption | : | Max.10 Watt |
| Operating Temperature | : | 0°C ~ +40°C |
| Heat Ventilation | : | Temperature Control Fan |
| Charging Current | : | About 400mA @3V |
| Charging Time | : | About 3.5hrs @2000mA |
| Charging Detection | : | - Δ V + Temperature |

Receiver Unit

| | | |
|--------------------------|---|--|
| Frequency Band | : | BRXN – 301, 433 MHz |
| Channel Spacing | : | 25KHz (BRX-301, 433) |
| Frequency Control | : | Synthesizer (PLL) |
| Frequency Drift | : | < 5ppm @ -10°C ~ +70°C |
| Frequency Deviation | : | < 1ppm @ 25°C |
| Sensitivity | : | <-115dBm |
| Spurious Emission | : | - 50dB |
| Antenna Impedance | : | 50 ohms |
| Responding Time | : | 40ms (Normal) |
| Enclosure Rating | : | IP-65 |
| Source Voltage | : | α604/607/608: DC12V/24V, AC48V, AC110V/240V, AC100-240V, AC380V @50/60Hz α612: DC12V/24V, AC110V/240V, AC380-460V @50/60Hz |
| Power Consumption | : | 11VA |
| Operating Temperature | : | -10°C ~ +70°C |
| Output Contact Rating | : | 250V @ 10A |
| Output MAIN Relay Rating | : | 250V @ 6A |
| Dimension | : | 604 Models : 310mm x 134mm x 72mm 607, 608 Models: 310mm x 134mm x 72mm 612 Models : 300mm x 230mm x 86mm |
| Weight | : | 604 Models : 1,625g (include output cable) 607, 608 Models: 2,000g (include output cable) 612 Models : 3,400g (include output cable) |

13. PARTS LIST

Transmitter

| | Part No. |
|--|-----------------|
| 1. Transmitting RF module | TX600 |
| 2. Encoder board (Alpha 607A) | BEN607A |
| Encoder board (Alpha 607B) | BEN607B |
| Encoder board (Alpha 607AT) | BEN607AT |
| Encoder board (Alpha 607BT) | BEN607BT |
| Encoder board (Alpha 608A) | BEN608A |
| Encoder board (Alpha 608B) | BEN608B |
| 3. A608 electromagnetic induction board | ELE600 |
| 4. Transmitter enclosure (A607 & Alpha 608) | BCT607 |
| 5. Battery cover | BC600 |
| 6. 2-step pushbutton | B50001 |
| 1-step pushbutton | B50002 |
| 7. Pushbutton rubber fixing holder | BCH608 |
| 8. Pushbutton rubber boot (Alpha 607 & 608) | PRB02 |
| 9. Transmitter shock-absorbing rubber (Alpha 607 & 608) | SAR02 |
| 10. Transmitter vinyl protective cover (Alpha 607 & 608) | VPC02 |
| 11. EMS pushbutton | B50003 |
| 12. EMS red cap (all models) | EMS01 |
| 13. A600 waist strap | WS01 |
| 14. Rechargeable battery | RCB01 |
| 15. A600 pushbutton direction label | DL01 |

Receiver

| | |
|--|--------------|
| 1. Decoder board (Alpha 607A) | BDE607A |
| Decoder board (Alpha 607B) | BDE607B |
| Decoder board (Alpha 607AT) | BDE607AT |
| Decoder board (Alpha 607BT) | BDE607BT |
| Decoder board (Alpha 608A) | BDE608A |
| Decoder board (Alpha 608B) | BDE608B |
| 2. 433MHz receiver RF module (All models) | BRX433 |
| 3. Receiver enclosure (Alpha 607, 608) | BCR607 |
| 4. Receiver mounting spring (Alpha 607, 608) | RMS600 |
| 5. Regular Output Contact Relay-blue (All Models) | BDE607BT |
| 6. Safety MAIN Contact Relay-DC12V (All Models) | BDE608A |
| 7. Transformer (12/24VDC – Alpha 600-612) | T24VDC |
| Transformer (24VAC – Alpha 600-608) | T24VAC |
| Transformer (48VAC – Alpha 600-608) | T48VAC |
| Transformer (110/120VAC – Alpha 600-608) | T120VAC |
| Transformer (220/230VAC – Alpha 600-608) | T230VAC |
| Transformer (380VAC – Alpha 600-608) | T380VAC |
| Transformer (220/230VAC – Alpha 600-608) | T230VAC |
| 8. Full voltage module (100-240VAC-Alpha 600-608) | FV100-240VAC |
| 9. 2-meter Output Cable with 5 Common Circuits Cable (24C*2m V3.5, Alpha 607, 608) | OC607 |
| 10. Optional External 301 MHz Antenna (All Models) | ANT301 |
| 11. Optional External 433 MHz Antenna (All Models) | ANT433 |

Charger/USB programming parts

| | |
|---|--------|
| 1. Charging board (All models) | CHPCB |
| 2. Electromagnetic board (All models) | ELEPCB |
| 3. USB programming board (All Models) | USBPCB |
| 4. Charger casing (All Models) | CHC |
| 5. USB connecting cable (1m – All models) | USBC |