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1. SAFETY INSTRUCTION

The EZ Bon 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 EZ Bon series will enhance safety, productivity and efficiency in the workplace.

**The following procedures should be strictly followed:**

1. 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.

2. The transmitter voltage should be checked on a daily basis. If the voltage is low (red status light blinking or completely off), the two "AA" alkaline batteries should be replaced.

3. 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.

4. 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.

5. The transmitter power switch should be turned off after each use and should never be left in the "power on" state when the unit is unattended.

6. 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.

7. Ensure the wrist strap (EZB16, EZB56, EZB64, EZB68) or the waist belt (EZB510, EZB612) is worn at all time during operation to avoid accidental damage to the transmitter.

8. Never operate a crane or equipment with two transmitters at the same time with the same RF channel and ID code, as it will cause radio interference.

Caution!

Improper Storage of your Spare Transmitter is a Safety Hazard! During the initial installation of your remote control system the spare (second) transmitter should be tested to confirm that it is functioning properly and then the batteries must be removed and the transmitter stored in a secured place. Failure to follow this safety procedure can result in the inadvertent operation of your crane or hoist by unauthorized personnel resulting in serious injury or death!

2. PUSHBUTTON CONFIGURATION

EZB10   →   (7) single speed pushbuttons
EZB16   →   (7) single speed pushbuttons
EZB64   →   (4) single speed pushbuttons
EZB68   →   (8) single speed pushbuttons
EZB612   →   (12) single speed pushbuttons

EZ B16   EZ B64   EZ B68   EZ B612
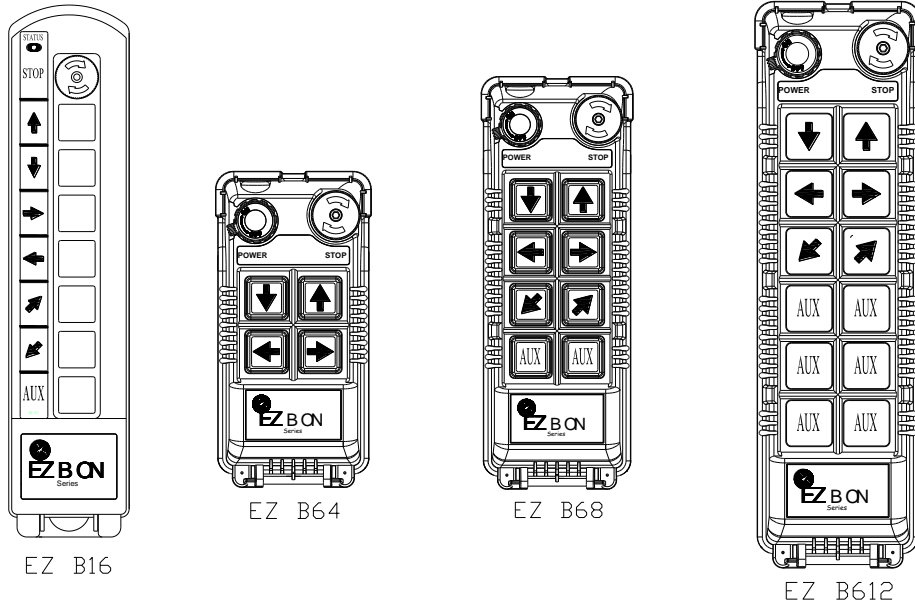
3. TRANSMITTER OUTLINE

3.1 Transmitter Outline

EZB10 Size   : 272mm x 63mm x 47mm
EZB16 Size   : 272mm x 63mm x 47mm
EZB64 Size   : 140mm x 68mm x 30mm
EZB68 Size   : 189mm x 68mm x 30mm
EZB612 Size : 235mm x 68mm x 30mm

EZ B16   EZB64   EZB68   EZB612
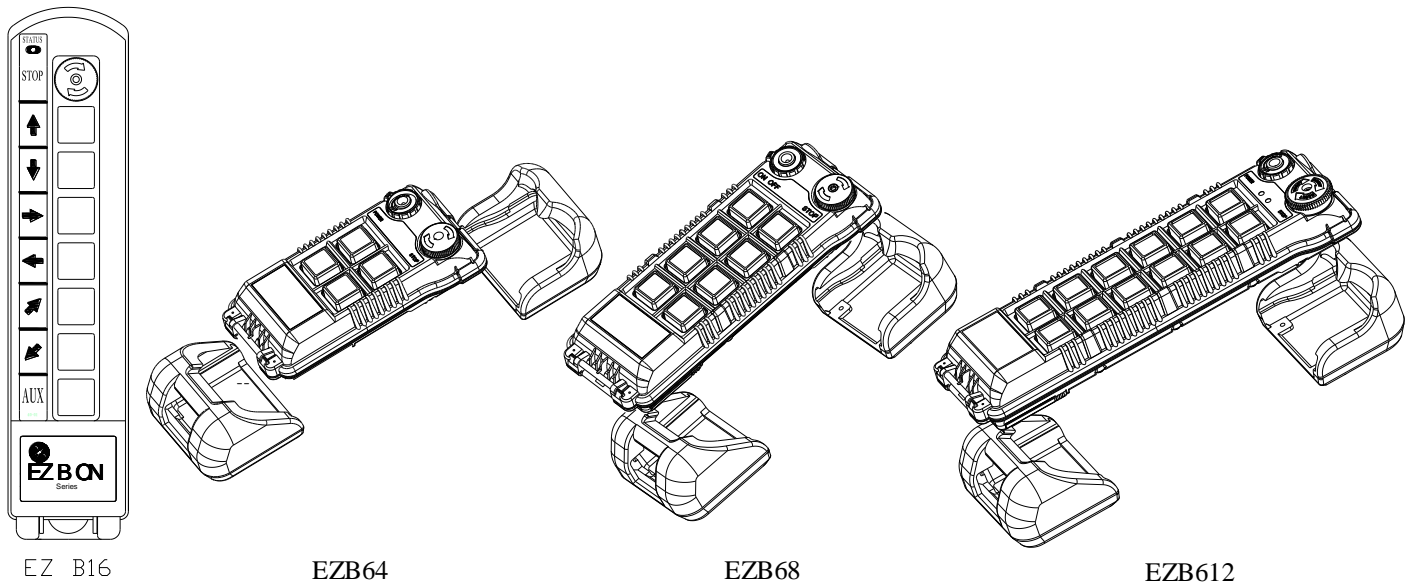
Fig.1) Transmitter Outline   4 -

3.2 TRANSMITTER INTERNAL ASSEMBLY
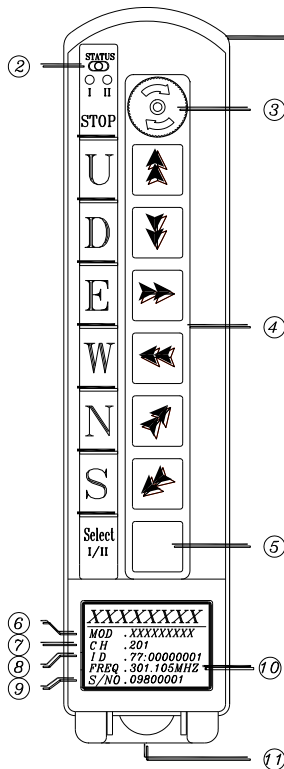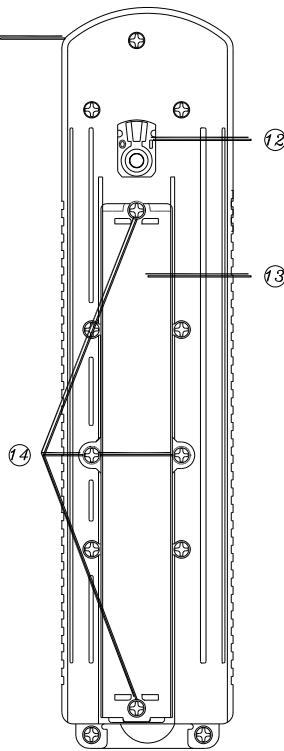
(Fig. 2) Front View   (Fig. 3) Back View   (Fig. 4) PCB Assembly
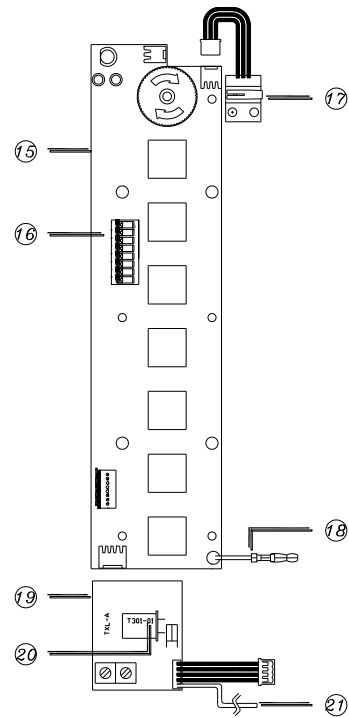
1)	Transmitter enclosure	8)	Security ID code	15)	Encoder board
2)	Status indicator	9)	Serial number	16)	ID code dip-switch
3)	Emergency stop (EMS)	10)	System frequency	17)	EMS On/Off Switch
4)	Select* / AUX**	12)	Power switch	19)	TX module
5)	Pushbutton rubber boot	11)	Strap & belt clip slot	18)	TX Grounding
6)	Model type	13)	Battery cover	20)	TX quartz crystal
7)	System channel	14)	Battery cover screws	21)	Antenna

EZB64, EZB68 & EZB612
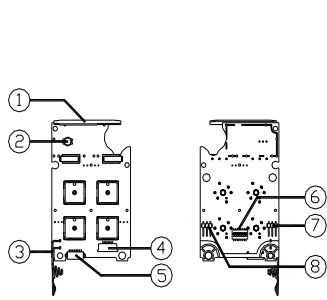
EZ64

(Fig.5) Front / Back View
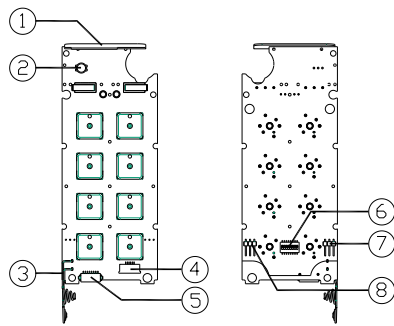
EZ68

(Fig.6) Front / Back View
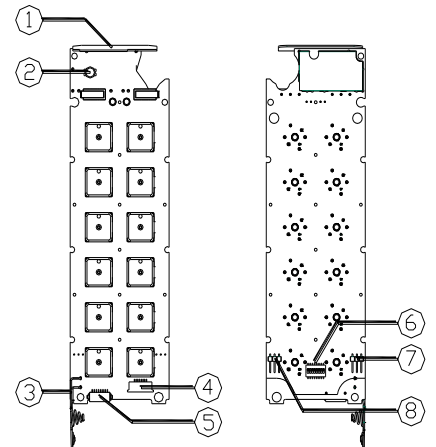
EZ612

(Fig.7) Front / Back View

1. Internal antenna
2. Status LED
3. Battery contact
4. Transmitter induction charging port

5. Programming port
6. ID code dip-switch
7. JP2 setting pin
8. JP1 setting pin

3.3 EZB64/EZB68/EZB612 Spare Parts

1. Transmitter shock-absorbing rubber
2. Shoulder strap

(1)

(2)
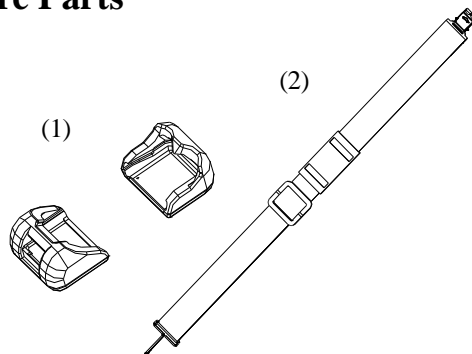
4. <mark>RECEIVER OUTLINE</mark>

4.1 TYPICAL FOR EZB10, EZB16, EZB64 & EZB68

4.1.1 EXTERNAL ASSEMBLY

SIZE：310mm x 134mm x 72mm
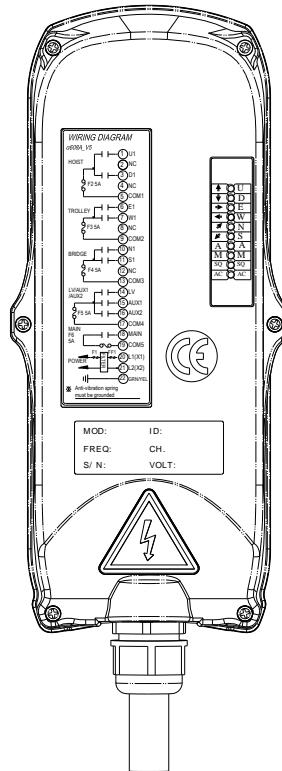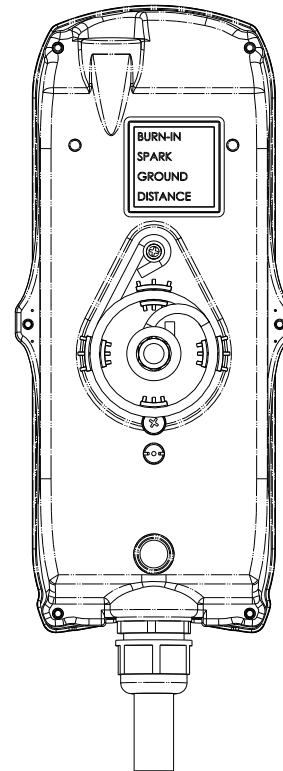
(Fig.8) Front View   (Fig.9) Back View

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 (not available for EZ Bon series).

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

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

   Red "on"   → 2nd speed activated (not available for EZ Bon series).

* **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 Internal Assembly

(Fig. 10) Internal Parts Assembly

1) Receiving RF module
2) Secondary power AC fuse (0.50A)
3) Primary power AC fuse (1.0A)
4) System status LED display*
5) External antenna port
6) ID code dip-switch
7) RF channel dip-switch
8) Contact relay LED display
9) Pushbutton #1 and #2 fuse (5.0A)
10) MAIN fuse (5.0A)
11) Contact output seat (CN3)
12) Low-voltage (LV) fuse (5.0A)
13) Contact output seat (CN4)
14) Pushbutton #3 and #4 fuse (5.0A)
15) AC power input seat (CN2)
16) Cable gland & output cable

* Please refer to page 24 for system status
LED display information.
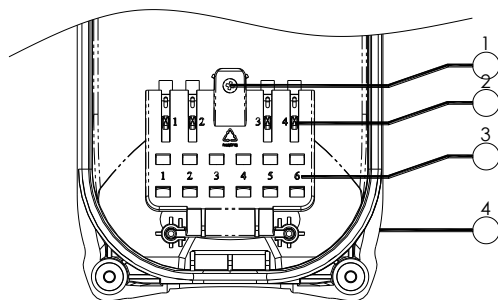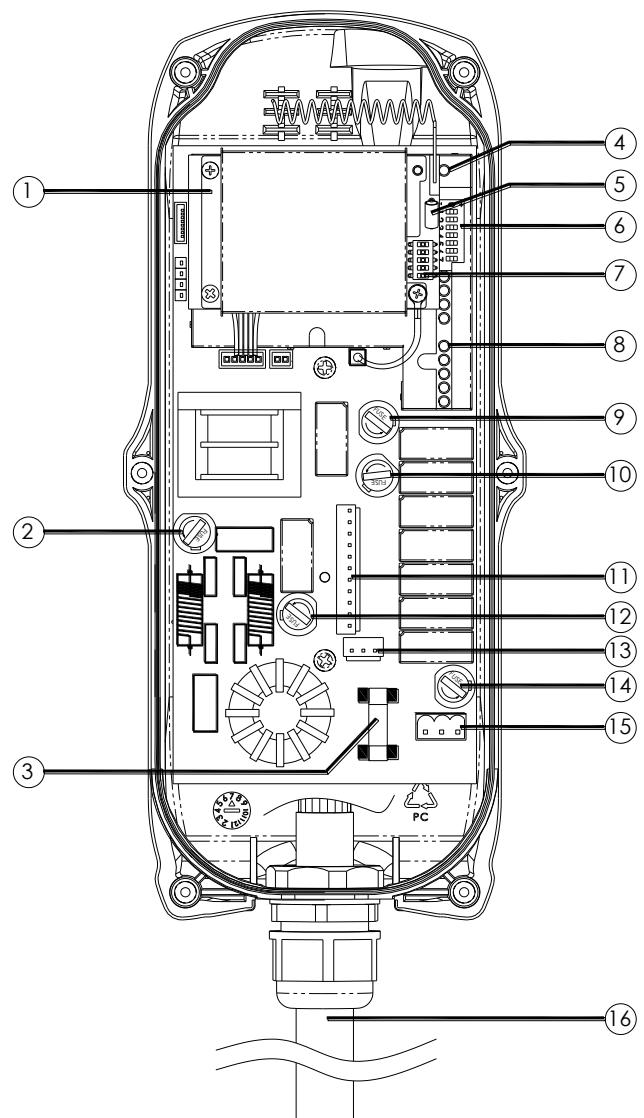
1) Spare fuse & jumper compartment
2) Spare Jumper slots
3) Spare fuse slots
4) Receiver top casing

4.2 TYPICAL FOR EZB612

4.2.1 External Assembly

SIZE：300mm x 230mm x 86mm
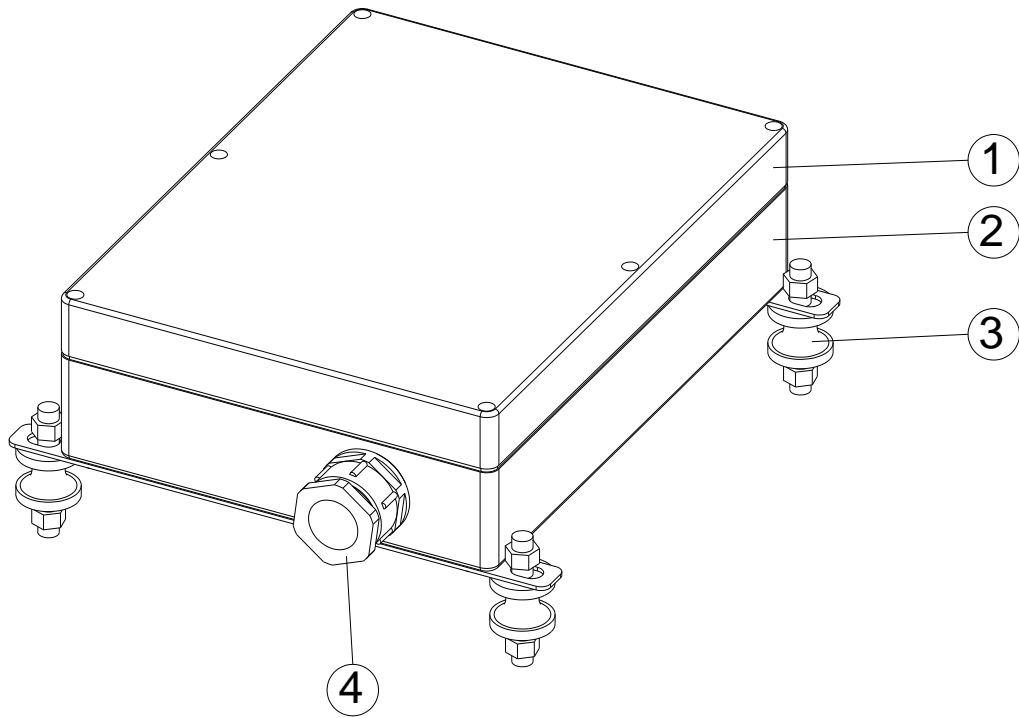
(Fig. 11) External Parts Assembly

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

4.2.2 Internal Assembly
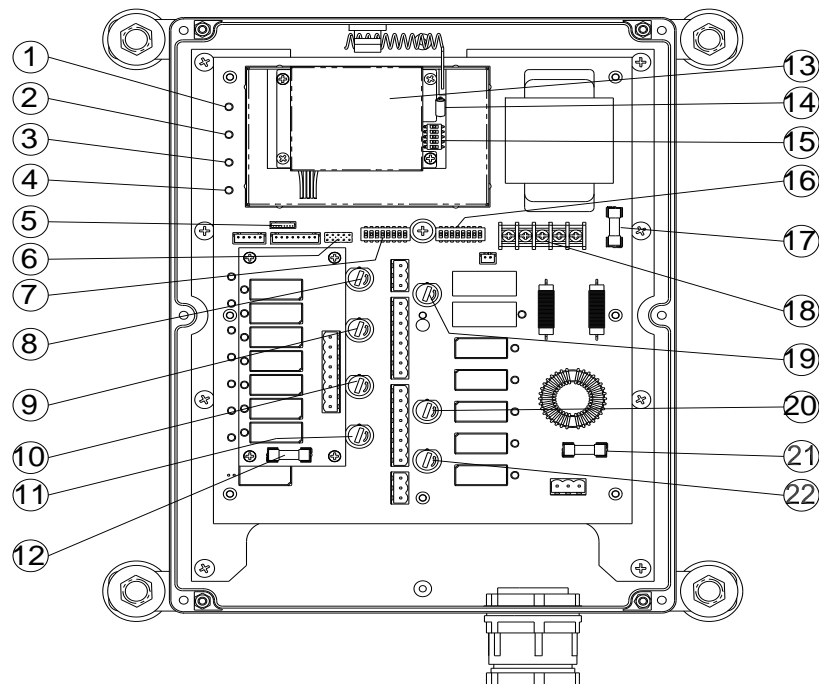
(Fig. 12) Internal Parts Assembly

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 A1and 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 24.

5.OUTPUT CONTACT DIAGRAMS

EZB16

EZB64

EZB68

EZ B612

(Alpha 612A)
same as Alpha 580A+2

WIRING DIAGRAM

EZB68   *V5*

HOIST

①	U1
②	NC
③	D1

F2 5A

| ④ | NC |
| ⑤ | COM1 |

TROLLEY

| ⑥ | E1 |
| ⑦ | W1 |

F3 5A

| ⑧ | NC |
| ⑨ | COM2 |

BRIDGE

| ⑩ | N1 |
| ⑪ | S1 |

F4 5A

| ⑫ | NC |
| ⑬ | COM3 |

LV/AUX1
/AUX2

| ⑭ | LV |
| ⑮ | AUX1 |

F5 5A

| ⑯ | AUX2 |
| ⑰ | COM4 |

MAIN
F6
5A

| ⑱ | MAIN |
| ⑲ | COM5 |

POWER   F1 FF1 FILTER

⑳	L1(X1)
㉑	L2(X2)
㉒	GRN/YEL
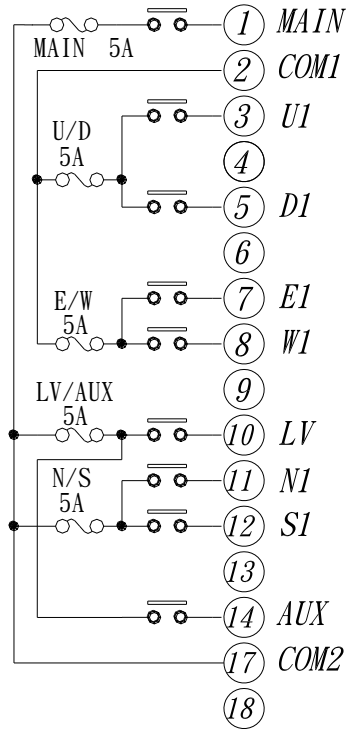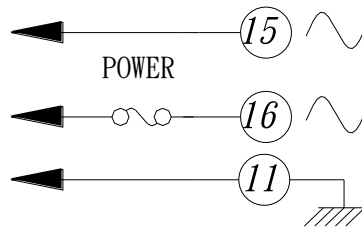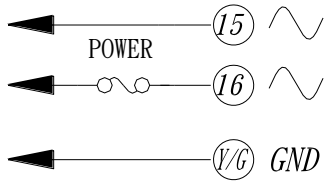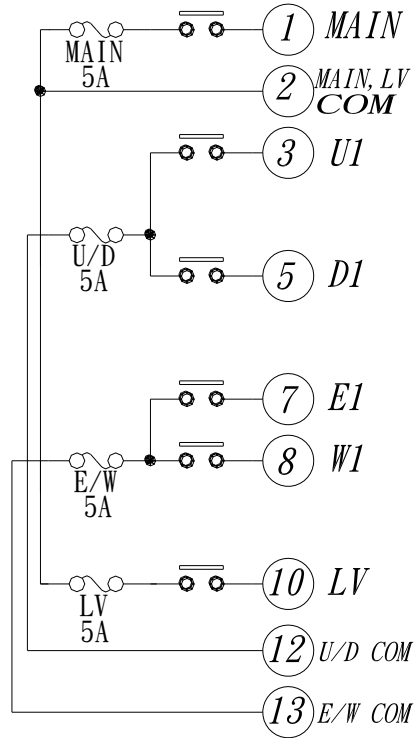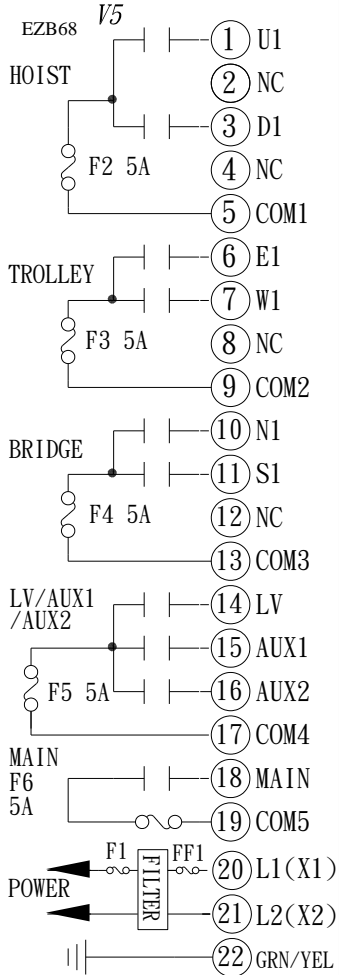
※ Anti-vibration spring
must be grounded

A580A+2   TOP BOARD.

CN3
U1
D1
COM1   F2 5A U/D
E1
W1

K1
K3
K5
K6

CN4
MAIN   F6 5A MAIN   K20   K19

CN4

CN7
COM2   F3 5A E/W
N1   K8
S1   K9
COM3   F4 5A N/S
A1.1   K11
A2.1   K12

CN9
COM4   F5 5A A1/A2
A3.1   K14
A4.1   K16
COM5   F8 5A A4
LV   K18   F7 5A A3
COM6   F9 5A LV

CN8
RES 1   K21
RSE 2   K22
COM7

TO: TRANSFORMER

VOLTAGE SELECT.
COM
①

F1 POWER

FILTER

FF1 POWER

CN2
POWER

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) Disassemble shock-absorbing rubber

(3) Put the transmitter pushbutton side downward and disassemble transmitter bottom casing.

(4) Set ID code with dip-switch and put short boot on 1st / 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 on 1, 2 pin of JP1.

(10) Rotate transmitter power switch to OFF position.
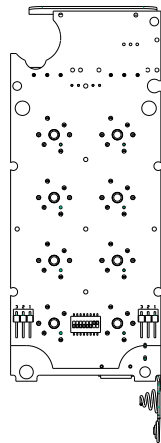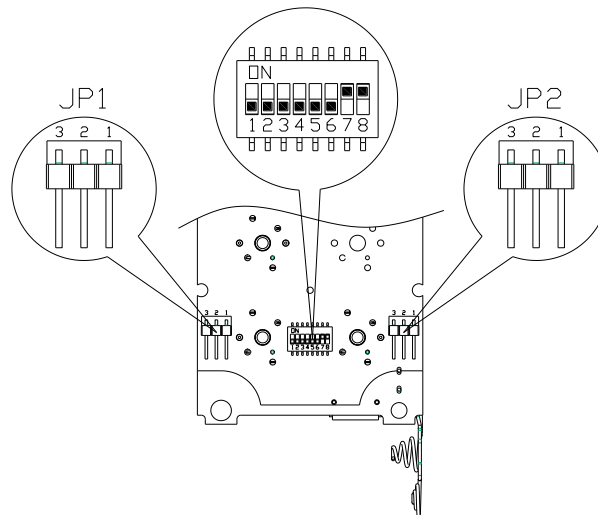
(Fig. 21) Back view   (Fig. 22) Position of dip-switch & jumpers

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

6.2 Transmitter Channel Settings – EZ B64, EZB68 & EZB612

Transmitter channel setting (select the channel you would like to operate. No exceed to channel limit.)

6.2.1 Set by programming tool

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

When setting frequency on TX board JP1, put short boot on 2nd & 3rd pin of JP1.

Change the frequency needed by changing the dip-switch setting. Repeat the previous steps to set frequency.

(Note: set the dip-switch from the 4th digit)

Example：Set channel as 03→(00000011) → Correct setting

7. <mark>RECEIVER SETTINGS</mark>

7.1 How to Set EZB16/EZB64/EZB68 & EZB612 Receiver ID Codes

How to Set EZB16/ EZB64/EZB68 Receiver ID Codes
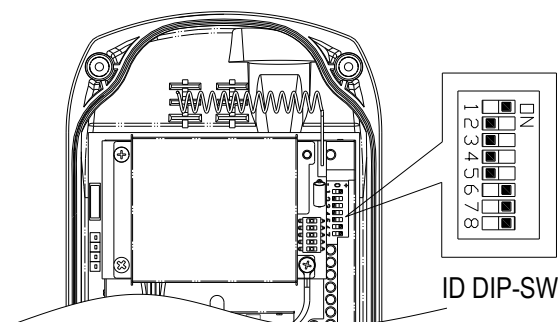
ID DIP-SW

Top slot → "1"   Bottom slot → "0"

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

How to set EZB612 Receiver ID Code

Please refer to Fig.20 receiver internal parts assembly (Page12) for receiver ID code setting on ID code 8-position dip-switch.

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"**）
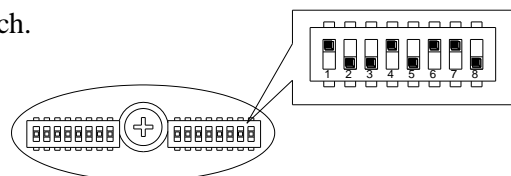
7.2 Receiver RF Channel Setting

There are 68 sets of user-adjustable receiving RF channels that can be set manually via a 8-position dip-switch located to the right of the receiving RF module. Change the receiving RF channel simply by resetting these 5-position dip-switch.   For the location of the receiving RF module, please refer to fig. 18 and 20 on page 9 & 11.

Top slot → "1"；bottom slot → "0"

For example：the channel dip-switch set above → 00000101, channel 05.
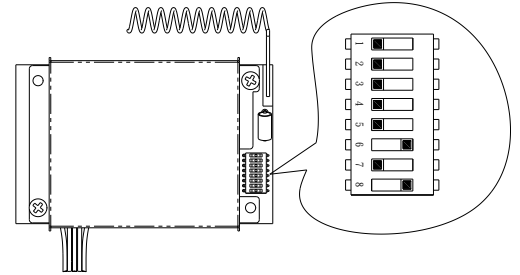
7.3 Receiver Function Setting

7.3.1 EZB10/EZB16/EZB64/EZB68 Receiver Function Setting

1. Set by programming tool
2. Adjust Jumper setting function by decoder board

Receiver function setting:

A. 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)

B. The MAIN relay auto shutdown time can be set as 3 minutes or depends on customer's single request. (Remark 1)

C. When transmitter voltage is low, relays for the receiver MAIN and LV (Remark 1) will be auto shutdown after one minute.
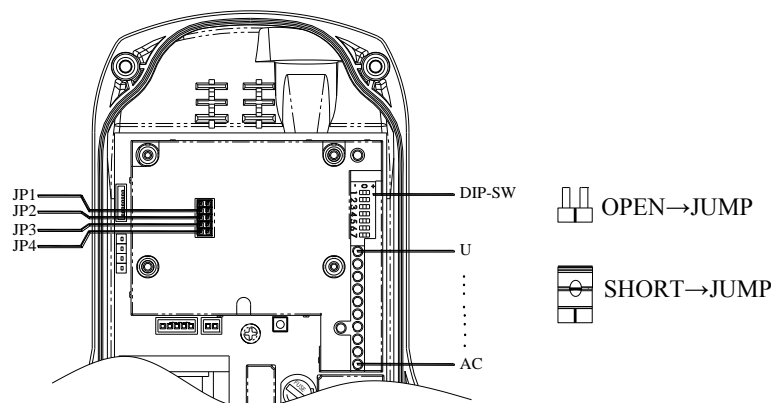
(Fig. 23)EZB16, EZB64 & EZB68 models

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

JP1	Open	Power key to activate relay MAIN relay (After turning "on" the transmitter power and pressing the emergency Stop button)
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	No auto shutdown time on MAIN and LV relays
	Short	After one minute of transmitter LV, the MAIN and LV relays will be deactivated.
JP4	Open	7th AUX: "Normal" pushbutton setting
	Short	7th AUX: "Toggle" pushbutton setting

※ *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 EZB612 Receiver Function Setting

1. Set by programming tool

2. Adjust Jumper setting function by decoder board

Receiver function setting:

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

JP1	Open	Power key to activate relay MAIN relay (After turning "on" the transmitter power and pressing the emergency stop button)
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	No auto shutdown time on MAIN and LV relays
	Short	After one minute of transmitter LV, the MAIN and LV relays will be deactivated.

※ *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 EZB612 Models Dip-Switch Function Table

※ In-plant all set at "0"

EZB612 dip-switch function table

Model	Pushbutton	Dip-Switch Setting			Description
EZB612	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	

7.3.4 EZB612 Receiver Voltage Settings

1. Select the voltage for 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.
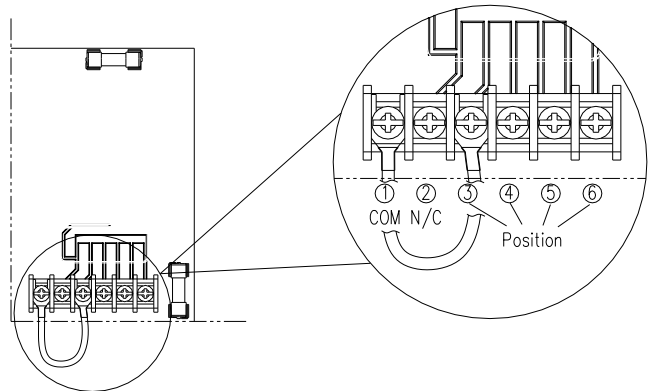
Transformer type no.：   **K-2367**
  • Position ③ AC 110V   → AC 100V ~ AC 125V
  • Position ④ AC 240V   → AC 200V ~ AC 240V

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 25 V
  • Position ④ AC 36 V
  • Position ⑤ AC 42 V
  • Position ⑥ AC 50 V

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

7.4 Frequency (RF) Channels Table

Band 433MHz	Dip-Switch Setting	Channel	Band 433MHz	Dip-Switch Setting	Channel
433.075 MHz	00000001	01	434.425 MHz	00100011	35
433.100 MHz	00000010	02	434.450 MHz	00100100	36
433.125 MHz	00000011	03	434.475 MHz	00100101	37
433.150 MHz	00000100	04	434.500 MHz	00100110	38
433.175 MHz	00000101	05	434.525 MHz	00100111	39
433.200 MHz	00000110	06	434.550 MHz	00101000	40
433.225 MHz	00000111	07	434.575 MHz	00101001	41
433.250 MHz	00001000	08	434.600 MHz	00101010	42
433.275 MHz	00001001	09	434.625 MHz	00101011	43
433.300 MHz	00001010	10	434.650 MHz	00101100	44
433.825 MHz	00001011	11	434.675 MHz	00101101	45
433.850 MHz	00001100	12	434.700 MHz	00101110	46
433.875 MHz	00001101	13	434.725 MHz	00101111	47
433.900 MHz	00001110	14	434.750 MHz	00110000	48
433.925 MHz	00001111	15	434.775 MHz	00110001	49
433.950 MHz	00010000	16	433.325 MHz	00110010	50
433.975 MHz	00010001	17	433.350 MHz	00110011	51
434.000 MHz	00010010	18	433.375 MHz	00110100	52
434.025 MHz	00010011	19	433.400 MHz	00110101	53
434.050 MHz	00010100	20	433.425 MHz	00110110	54
434.075 MHz	00010101	21	433.450 MHz	00110111	55
434.100 MHz	00010110	22	433.475 MHz	00111000	56
434.125 MHz	00010111	23	433.500 MHz	00111001	57
434.150 MHz	00011000	24	433.525 MHz	00111010	58
434.175 MHz	00011001	25	433.550 MHz	00111011	59
434.200 MHz	00011010	26	433.575 MHz	00111100	60
434.225 MHz	00011011	27	433.600 MHz	00111101	61
434.250 MHz	00011100	28	433.625 MHz	00111110	62
434.275 MHz	00011101	29	433.650 MHz	00111111	63
434.300 MHz	00011110	30	433.675 MHz	01000000	64
434.325 MHz	00011111	31	433.700 MHz	01000001	65
434.350 MHz	00100000	32	433.725 MHz	01000010	66
434.375 MHz	00100001	33	433.750 MHz	01000011	67
434.400 MHz	00100010	34	433.775 MHz	01000100	68

8. TRANSMITTER OPERATION & STATUS LIGHT

8.1 Transmitter Operating Steps

1. **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.

2. 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.

3. **EMS & Restarting** _ In case of an emergency, press down the red emergency stop button (EMS) will immediately deactivates the transmitter and receiver MAIN relay. The transmitter Status LED will be blinking "on"→0.5 second and "off"→0.5 second for 30 seconds (Mode 0). Then turn off the transmitter power.

4. 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.

5. Note that the transmitter cannot be hit by outer force, so that malfunction can be prevented.

6. The operating temperature is -10 ~ +60℃. Avoid operating the transmitter in high temperature workshop. If operating temperature is higher than 80℃,the auto shutdown protection installed inside CPU will shut down the transmitter and deactivate the MAIN relay.

7. To operation normally, the battery power has to be over 2.2V. If the voltage is lower than 2.2V, the system cannot be started and low voltage status will be shown until the MAIN is completely shutdown.

8. If the power voltage is lowered 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.
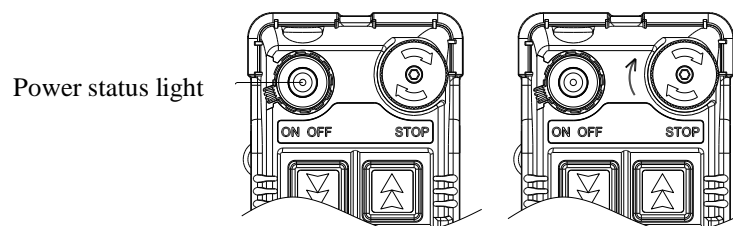
Power status light

STOP: press → lock (emergency stop)   START: Elevate clockwise → reset (Turn on the transmitter at any time)

8.2 Transmitter Status Light

| Type	Status	Solution	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 invalided	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	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	Normal operation	Press pushbutton	Green light flash ON_0.1/OFF_1.9 sec

9. <mark>RECEIVER INSTALLATION</mark>

9.1. Preparation for Installation
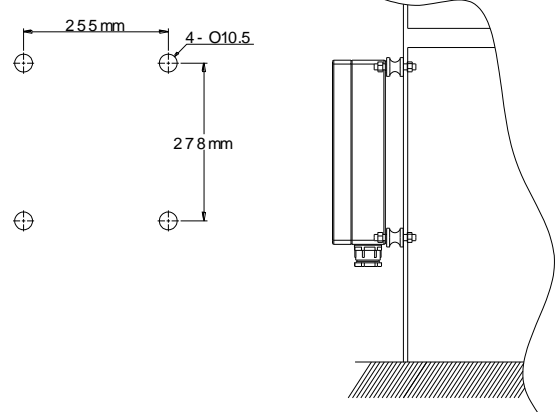
1. Required Tools for Receiver Installation:
   (1) Flat Head Screwdriver (-)
   (2) Phillips Head Screwdriver (+)
   (3) Multi-Meter
   (4) 14mm Wrench x 2
   (5) Power Drill with φ 10.5mm Drill-Bit
2. Check to ensure that your receiver is not set to the same RF channel and ID code as any other systems 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 fig.24 & 25 on page 23).
6. If a crane or equipment's runway is longer than 100 meters, an external antenna should be added. The EZB68 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 page 11-12 for the output contact diagrams.
11. Ensure all wiring is correct and safely secured and all screws are fastened.

The distance between receiver antenna and the control panel should be as far apart as possible.

antenna position

control panel

255mm

4- O10.5

278mm
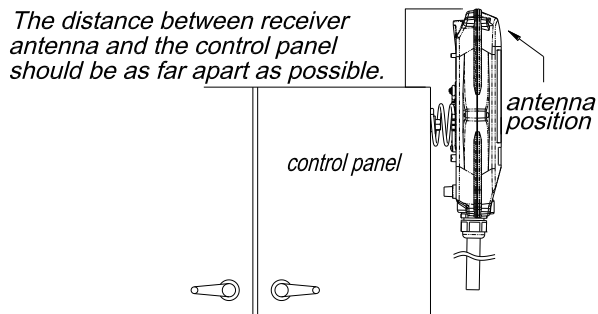
(Fig. 24) EZB10, EZB16, EZB64, EZB68   (Fig. 25) EZB612

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

LED status light
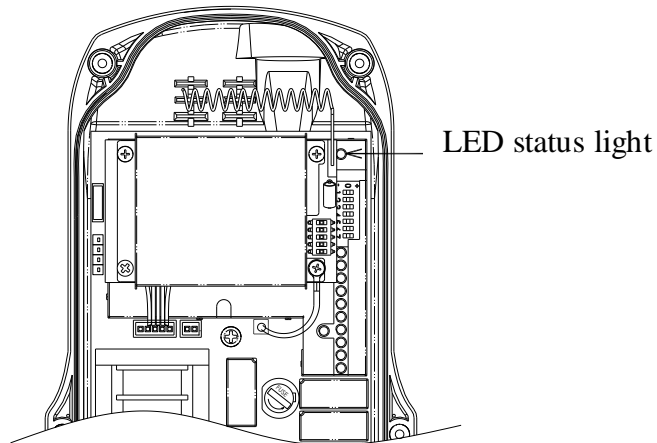
9.4.1 EZB16, EZB64 & EZB68 Receiver System Status LED Display

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 page 20 for correct ID code setting.

9.4.2 EZB612 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. 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 page 13-18 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.

11. SYSTEM SPECIFICATION

Transmitter Unit

Source Voltage	:	3.0V ("AA" alkaline batteries x 2)
Antenna Impedance	:	Internal Antenna 50 ohms. External antenna is available.
Dimension – EZB16	:	272mm x 63mm x 47mm
Dimension - EZB64	:	140mm x 68mm x 30mm
Dimension – EZB68	:	189mm x 68mm x 30mm
Dimension – EZB612	:	235mm x 68mm x 30mm
Weight – EZB16	:	439g (include batteries)
Weight – EZB64	:	240g (include batteries)
Weight – EZB68	:	300g (include batteries)
Weight – EZB612	:	350 g (include batteries)
Enclosure Rating	:	IP-65
Operating Temperature	:	-10℃ ～ +60℃ (>80℃ transmitter auto shut down)
Transmitting Power Consumption	:	< 30mA @ 3.5V (Various from encoding mode and transmitting power)

Receiver Unit

Frequency Band	:	BRX - 433 MHz
Channel Spacing	:	25KHz (BRX-433)
Frequency Control	:	Synthesizer (PLL)
Frequency Drift	:	< 5ppm @ -20℃ ～ +70℃
Frequency Deviation	:	< 1ppm @ 25℃
Sensitivity		<-115dBm
Spurious Emission	:	- 50dB
Antenna Impedance	:	50 ohms
Responding Time		40ms (Normal)
Enclosure Rating	:	IP-66
Source Voltage	:	EZB16/EZB56/EZB64/EZB68: DC12-24V, AC48, AC100V-440V @50/60Hz
		EZB510/EZB612: AC25-50V, AC110-240V, AC380-460V @50/60Hz
Power Consumption		11VA
Operating Temperature	:	-10℃ ～ +70℃
Output Contact Rating		250V @ 10A
Dimension – EZB16/EZB64/EZB68	:	310mm x 134mm x 72mm
Dimension–EZB612	:	300mm x 230mm x 86mm
Weight – EZB64 Models	:	1,625g (include output cable)
Weight – EZB16/68	:	2,000g (include output cable)
Weight – EZB612	:	3,400g (include output cable)

12. <mark>PARTS LIST</mark>

Transmitter	Part No.
1. Encoder board (EZB16)	BEN16
Encoder board (EZB64)	BEN64
Encoder board (EZB68)	BEN68
Encoder board (EZB612)	BEN612
2. A608 electromagnetic induction board	ELE600
3. Transmitter enclosure (EZB16)	BCT1500
Transmitter enclosure (EZB64)	BCT64
Transmitter enclosure (EZB68)	BCT68
Transmitter enclosure (EZB612)	BCT612
4. Battery cover	BC600
5. 2-step pushbutton	B50001
1-step pushbutton	B50002
6. Pushbutton rubber fixing holder	BCH608
7. Pushbutton rubber boot (EZB16)	PRB02
11. EMS pushbutton	B50003
12. EMS red cap (all models)	EMS01
13. EZ Bon waist strap	WS01
14. EZ Bon pushbutton direction label	DL01

Receiver	
1. Decoder board (EZB16)	BDE16
Decoder board (EZB64)	BDE64
Decoder board (EZB68)	BDE68
Decoder board (EZB612)	BDE612
2. 433MHz receiver RF module (All models)	BRX433
3. Receiver enclosure (EZB16/ EZB64/EZB68)	BCR607
Receiver enclosure (EZB612)	BCR612
4. Receiver mounting spring (EZB16/ EZB64/EZB68)	RMS560
Receiver Shock Absorbers + Mounting Hardware (EZB612)	RSA580
5. Regular Output Contact Relay-blue (All Models)	BDE68BT
6. Safety MAIN Contact Relay-DC12V (All Models)	BDE68A
7. Transformer (12/24VDC –EZB64/EZB68)	T24VDC
Transformer (24VAC –EZB64/EZB68)	T24VAC
Transformer (48VAC –EZB64/EZB68)	T48VAC
Transformer (110/120VAC –EZB64/EZB68)	T120VAC
Transformer (220/230VAC –EZB64/EZB68)	T230VAC
Transformer (380VAC –EZB64/EZB68)	T380VAC
Transformer (220/230VAC –EZB64/EZB68)	T230VAC
8. 2-meter Output Cable with 2 Common Circuits Cable (EZB10/EZB16)	OC1500
2-meter Output Cable with 3 Common Circuits Cable (EZB64)	OC603
2-meter Output Cable with 5 Common Circuits Cable (EZB68)	OC605
9. Optional External 433 MHz Antenna (All Models)	ANT433