TABLE OF CONTENTS

2. INSTRUCTION

The Alpha 4000 series are highly durable, reliable and safe industrial radio remote control systems. The versatile features of the Alpha 4000 series permit their use in many different remote control applications. The systems can be used to control factory cranes, monorail systems, multiple hoists, trolleys, mining equipment, building construction equipment, automatic control systems, and many others.

The system incorporates numerous safety circuits that guaranty maximum security and ensure the system is resistant to outside interference. The major features of the Alpha 4000 series are as follow:

1. Alpha 4000 systems have the automatic shut-off function, when encountering strong radio interference, and when the transmitter/operator is out of receiving range. The receiver will start the automatic shutdown function in 0.55 seconds.

2. The system is equipped with highly evolved software that has error checking and correcting capabilities to ensure 100% error-free transmission, decoding, and control of all output relays. This highly evolved software includes CRC (Cyclical Redundancy Check) and Hamming Codes (Error Recovery) programming.

3. The transmitter encoder and receiver decoder both utilize advanced microprocessor control. The availability of 65,536 sets of unique ID codes will ensure that only commands from the matching control transmitter can be carried out without any interference from other radio systems.

4. The system also utilizes advanced microprocessor control (watch dog) for data comparison and crosschecking between the two decoding microprocessors. When fault are detected via this central microprocessor, for maximum safety, the entire system will be shutdown immediately to avoid possibility of any accidents occurring.

5. The Alpha 4000 series is equipped with numerous self-diagnosing functions:

   - MODE 1 (safe mode): Transmitter continuous sending signal to receiver for a period of time. (Transmitting time options: 40 seconds, 1 minutes, 3 minutes, 5 minutes, 10 minutes, 15 minutes, 30 minutes, 60 minutes or lasting) When set transmitter continuous transmitting time at 40 seconds, if user has not depressed the transmitter buttons in 40 seconds, the transmitter will be automatic "off". When the transmitter power is turned off, the receiver MAIN is also deactivated (open).
   - MODE 0 (power-saving mode): Only when depressing transmitter buttons, transmitter send signal to receiver.

Alpha 4000 series includes one receiver, transmitter and battery charger. The major features as follows:

1. The transmitter casings are molded using industrial strength composite materials which are impervious to dust, water, oil, acids, alkaline, heat and sunlight as well as being resistant to deformation due to long term use in harsh environments. The pushbuttons are also constructed from industrial strength composite materials with minimum of up to one million press cycles.

2. Sensor-type battery charging. Metal and open type contact of battery charger provides waterproof and strong construction of transmitter that fits every kind of environment. It also enables transmitter to charge simply by putting it on battery charger.
3. The receiver manufactured by metal material to avoid strong radio interference and protect the internal circuits.
4. Receiver internal circuits and modules are replaceable, such as RX modules card, decoder card, output relay card and power supply card.
5. The system utilizes PLL synthesized RF transmission. It allows the user to select from 63 sets of frequency channels best suited for the environment. The frequency channel is selected via simple dip-switch settings inside the transmitter and receiver unit.
6. The transmitter and receiver both can be designed function at chip card.
7. Base on the system type selected, you may create all kinds of combination with the software to fit different working environment.

3. SAFETY INSTRUCTION

The following instructions should be strictly followed:

1. Make a daily check of the transmitter casing, pushbuttons and pushbutton rubber boot. Should it appear that anything could inhibit the proper operation of the transmitter unit, it should be immediately removed from service.

2. Do not heat the battery or throw it into the fire. Do not touch the gold marking, for instance, chip card, relay board, RX module and decoder board socket.

3. The transmitter voltage should be checked on a daily basis. If the voltage is low, the battery pack should be recharged or replaced.

4. The emergency stop button (EMS) should be checked at the beginning of each shift to ensure they are in the proper working order.

5. In the event of an emergency, push down the emergency stop button immediately to deactivate the receiver main relay. Then turned the power "off" from the main power source of the equipment.

6. The transmitter power key should be pulled "off" after each use and should never leave the transmitter in the power "on" position when the unit is unattended.

7. Never operate a crane or equipment with two (2) transmitter units at the same time with the same frequency channel and ID code.

8. Do not use the same frequency channel and ID code as any other unit in use at the same facility or within distance of 300 meters.

9. Ensure the waist belt and the shoulder strap is worn at all time during operation to avoid accidental damages to the transmitter box.

10. Should the transmitters and receivers need to be repaired or adjusted, please refer all the services to the qualified service personel. (Do not change parts like transistors, quartz… by yourselves.)

4. INTRODUCTIONS

4.1 System Types

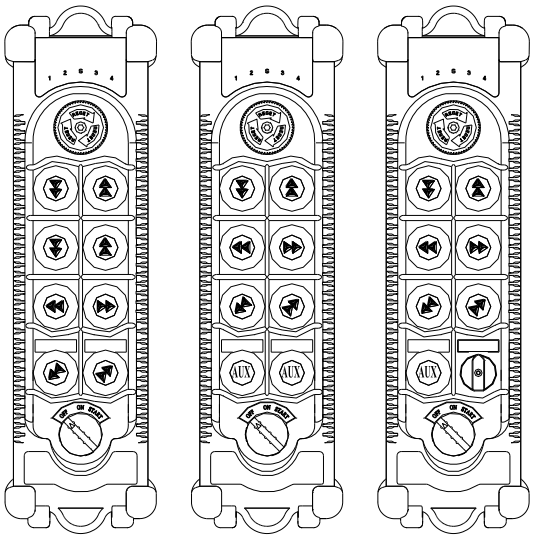
4.1.1 8-pushbutton types：

(1) 4008-2 : 8 double speed pushbuttons

(2) 4008-3 : 6 double speed pushbuttons + 2 single speed pushbuttons

(3) 4008-3S : 6 double speed pushbuttons + 1 single speed pushbutton + 1 selector switch*

* Selector switch: 2-stage or 3-stage selector switch



4008-2 4008-3 4008-3S

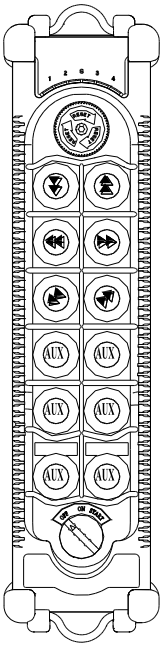
4.1.2 12-pushbutton types：

(1) 4012-2 : 6 double speed pushbuttons + 6 single speed pushbuttons

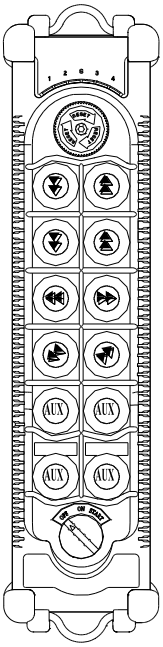
(2) 4012-3 : 8 double speed pushbuttons + 4 single speed pushbuttons

(3) 4012-3S : 8 double speed pushbuttons + 3 single speed pushbuttons + 1 selector switch*

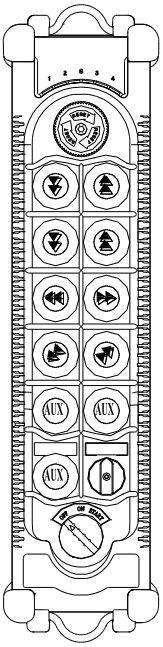
* Selector switch: 2-stage or 3-stage selector switch



4012-2



4012-3



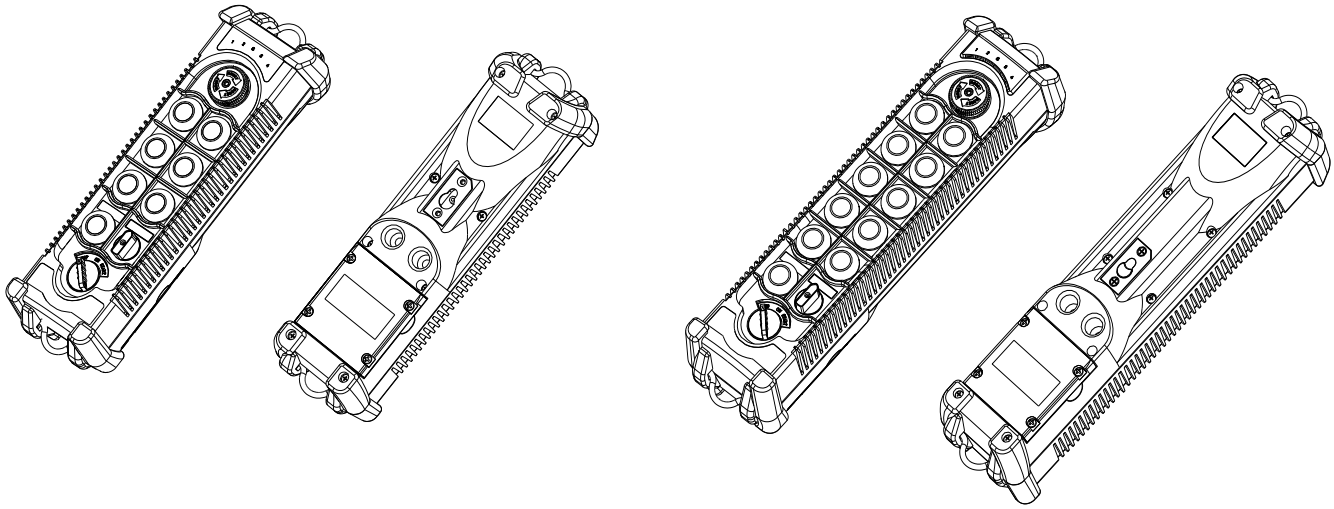
4012-3S

4.2 Transmitter Outline

4.2.1 Transmitter Outline

8 pushbuttons: 231mm × 65mm × 52mm

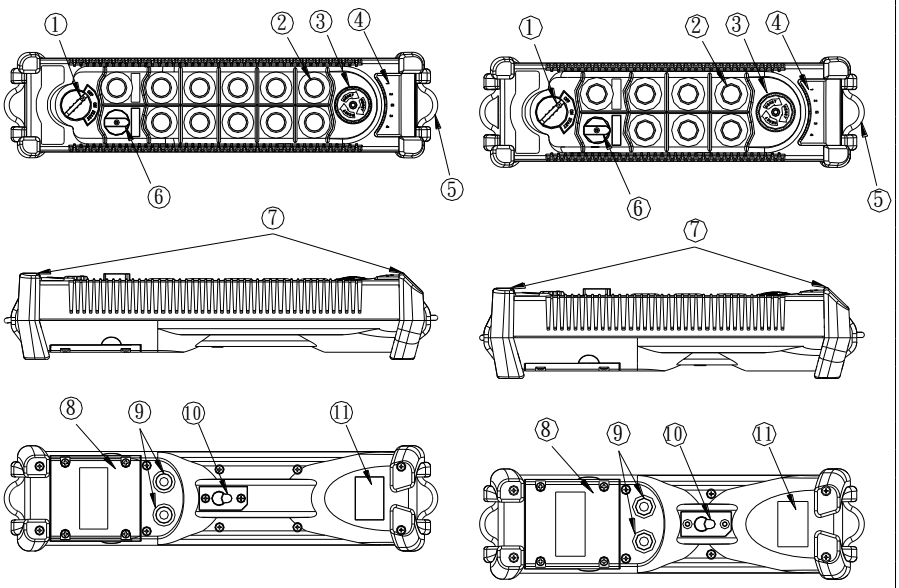
12 pushbuttons: 272mm × 65mm × 52mm



(Fig. 1) Transmitter Top / Bottom View

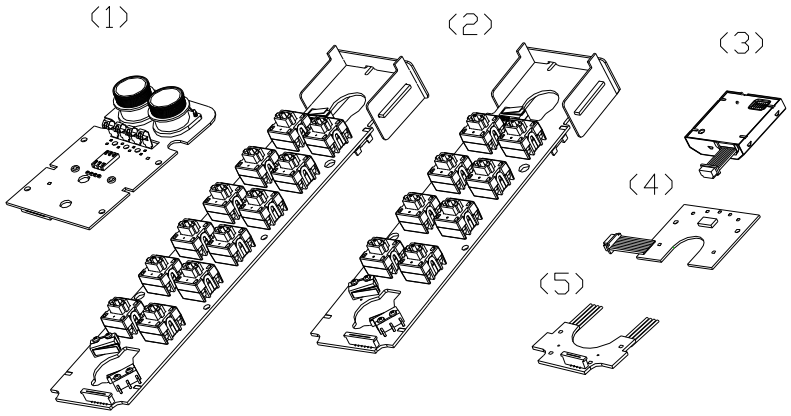
4.2.2 Transmitter External Descriptions

1. On / Off switch
2. Function key
3. Emergency stop button (EMS)
4. Status LED display
5. Shoulder strap holder
6. Selector switch
7. Anti-hit rubber
8. Lithium battery
9. Battery charging slot
10. Battery charging fixed position
11. System information



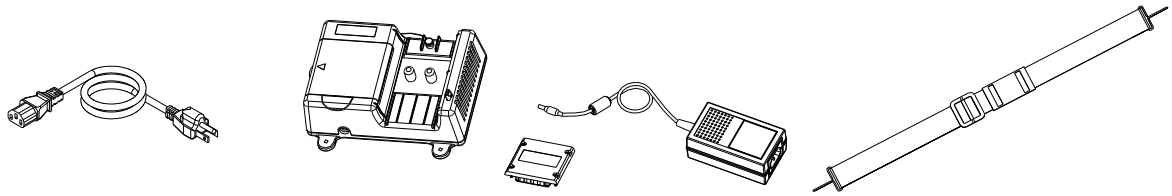
(Fig. 2) Transmitter External Views

4.2.3 Transmitter Interior Descriptions



(Fig. 3) (1) Recharging chip card (2) Encoder Board (3) TX module (4) LED card (5) 3-stage select switch board

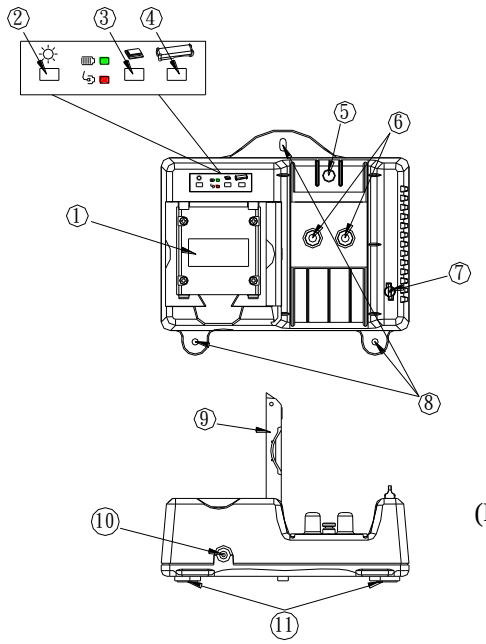
4.2.4 Rechargeable Battery、Battery Charger and Shoulder Strap Outline



(1) (2) (3) (4) (5)

(Fig. 4) (1) Cable (2) Battery Charger (3) Rechargeable Battery (4) Adapter (5) Shoulder Strap Outline

4.2.5 Battery Charger External Descriptions



(1) Battery charger

(2) Power LED display

(3) Battery charger LED display

(4) Transmitter charger LED display

(5) Transmitter charger mounting contact

(6) Transmitter charger contact

(7) Transmitter charger slot cleaning tool

(8) Battery charger mounting hole

(9) Battery charger cover

(10) Power socket

(11) Anti-slippery pads

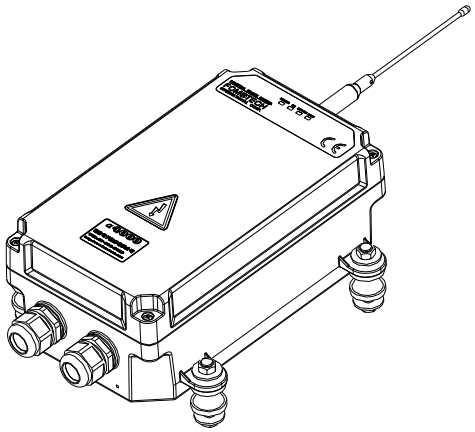
(Fig. 5) Battery Charger External Descriptions

4.3 Receiver Introduction

4.3.1 Receiver Outline

300mm × 171mm × 115mm

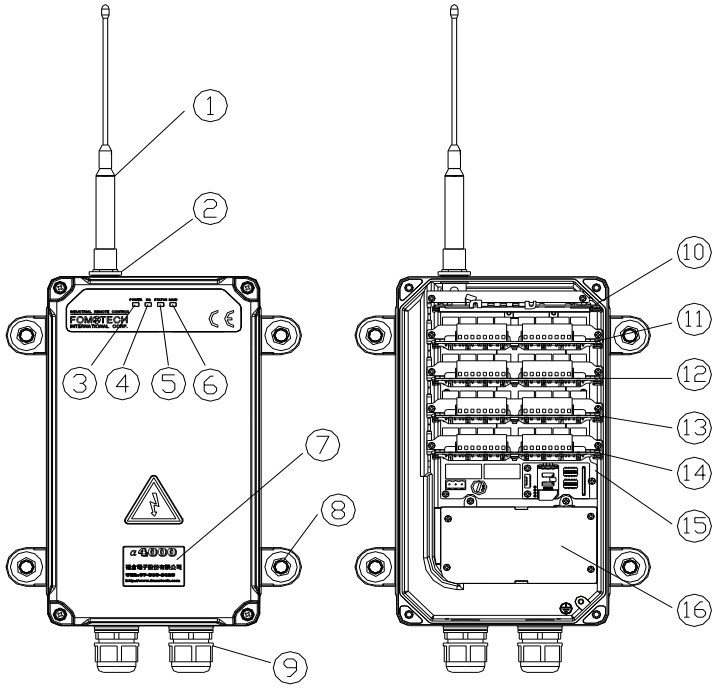
(Antenna and Plug-in Socket Excluded)



(Fig. 6) Receiver Outline

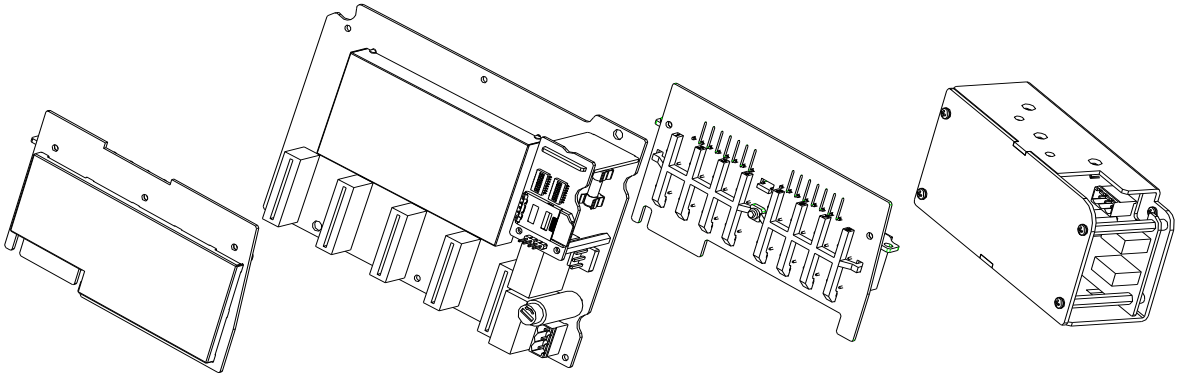
4.3.2 Receiver External Descriptions

1. Antenna
2. Antenna port
3. AC power display
4. SQ Status Display
5. Status display
6. Main relay display
7. System information plate
8. Shock absorber*4
9. Cable gland*2
10. RX module card
11. Output relay card I
12. Output relay card II
13. Output relay card III
14. Output relay card IV
15. Decoder card
16. Power supply card



(Fig.7) Receiver External View

4.3.4 (1) RX Module Card (2) Decoder Card (3) Output Relay Card (4) Power Supply Card



(Fig.8)

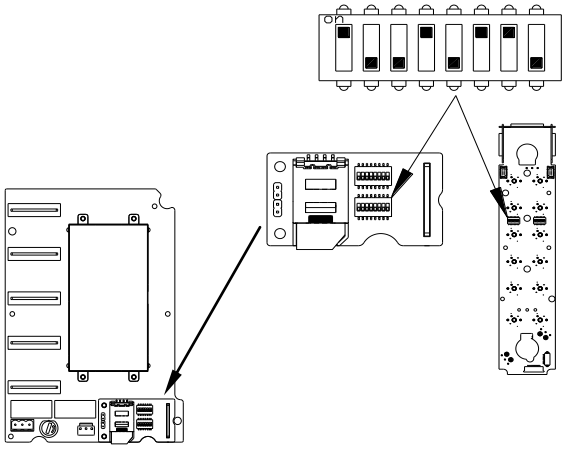
5. SYSTEM CONFIGURATIONS

5.1 Security ID Code Settings

Transmitter ID code can be readjusted via an 8-position dip-switch located on the encoder board. Receiver ID code also can be readjusted via an 8-position dip-switch located on the chip card of the decoder card. (Refer to Fig.9)

Example: ID code → 10010110

Top location: "1"
Bottom location: "0"



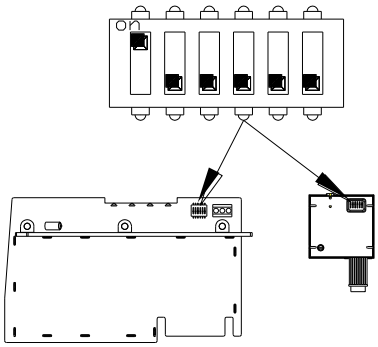
(Fig.9) Dip Switch

5.2 Frequency (RF) Channel Settings

Both transmitter and receiver frequency channel can be readjusted via a 6-position frequency dip-switch located on the TX module and RX module. (Refer to Fig.10). When the frequency dip-switch ID is not pre-set, (000000) the channel has to be set by SIM card. If the dip-switch is set as below drawing, i.e. channel 01 (100000) / 433.075MHz, then the SIM card setting will be replaced by frequency dip-switch setting.

Example: Channel 01 (100000) / Frequency 433.075MHZ

Top location: "1"
Bottom location: "0"



(Fig. 10) Frequency Dip Switch

5.3 Frequency (RF) Channel Table

FREQUENCY	DIP-SWITCH SETTING	CHANNEL
433.075 MHz	100000	01
433.100 MHz	010000	02
433.125 MHz	110000	03
433.150 MHz	001000	04
433.175 MHz	101000	05
433.200 MHz	011000	06
433.225 MHz	111000	07
433.250 MHz	000100	08
433.275 MHz	100100	09
433.300 MHz	010100	10
433.825 MHz	110100	11
433.850 MHz	001100	12
433.875 MHz	101100	13
433.900 MHz	011100	14
433.925 MHz	111100	15
433.950 MHz	000010	16
433.975 MHz	100010	17
434.000 MHz	010010	18
434.025 MHz	110010	19
434.050 MHz	001010	20
434.075 MHz	101010	21
434.100 MHz	011010	22
434.125 MHz	111010	23
434.150 MHz	000110	24
434.175 MHz	100110	25
434.200 MHz	010110	26
434.225 MHz	110110	27
434.250 MHz	001110	28
434.275 MHz	101110	29
434.300 MHz	011110	30
434.325 MHz	111110	31
434.350 MHz	000001	32
434.375 MHz	100001	33
434.400 MHz	010001	34
434.425 MHz	110001	35
434.450 MHz	001001	36

FREQUENCY	DIP-SWITCH SETTING	CHANNEL
434.475 MHz	101001	37
434.500 MHz	011001	38
434.525 MHz	111001	39
434.550 MHz	000101	40
434.575 MHz	100101	41
434.600 MHz	010101	42
434.625 MHz	110101	43
434.650 MHz	001101	44
434.675 MHz	101101	45
434.700 MHz	011101	46
434.725 MHz	111101	47
434.750 MHz	000011	48
434.775 MHz	100011	49
433.325 MHz	010011	50
433.350 MHz	110011	51
433.375 MHz	001011	52
433.400 MHz	101011	53
433.425 MHz	011011	54
433.450 MHz	111011	55
433.475 MHz	000111	56
433.500 MHz	100111	57
433.525 MHz	010111	58
433.550 MHz	110111	59
433.575 MHz	001111	60
433.600 MHz	101111	61
433.625 MHz	011111	62
433.650 MHz	111111	63

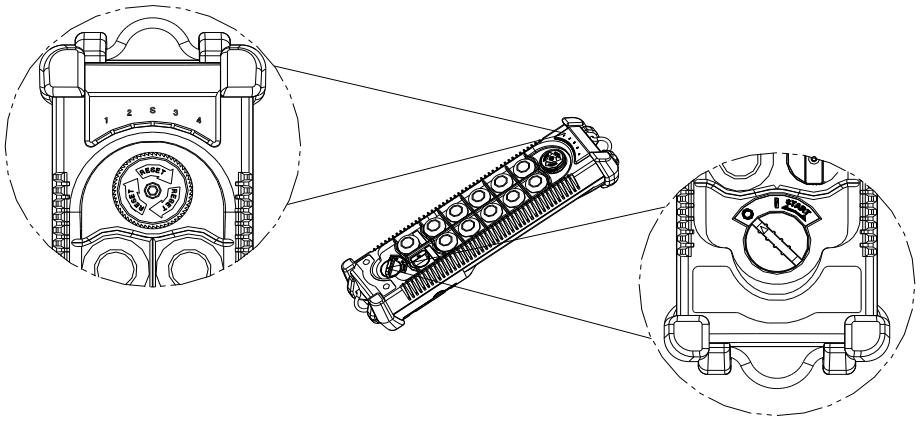
6. TRANSMITTER OPERATION

6.1 Transmitter Operation

1. Make sure that the red emergency stop button (EMS) is elevated before the transmitter power is turned on.
2. Rotate the power switch: (Off) → (On) → (Start) to turn on the transmitter. The transmitter can be used after the "power on" LED status display normally finished. Do not press any pushbutton when turn on the transmitter.

6.2 Transmitter LED Display

1. Transmitter LED Display



(Fig.11) Transmitter LED display

2. Transmitter Status LED Display:

LED STATUS DISPLAY	REASON
Green (on) → 0.1 sec. (off) → 0.9 sec.	Standby
0.2 sec. per step: Red (S) → (2+S+3) → (1+2+S+3+4) → Green (S) → (2+S+3) → (1+2+S+3+4)	Transmitter power "on"
Green (on) → 0.1 second (off) → 0.1 second	Transmitter active
Refer to Battery Power LED Display	Charging
8 blinks: Red (on) → 0.1 sec. (off) → 0.3 sec.	CPU I/O error
2 blinks: Red (on) → 0.1 sec. (off) → 0.3 sec.	Low battery power or out of battery
7 blinks: Red (on) → 0.1 sec. (off) → 0.3 sec.	EEPORM error
5 blinks: Red (on) → 0.1 sec. (off) → 0.3 sec.	No Chip card is inserted

LED STATUS DISPLAY	REASON
6 blinks: Red (on) → 0.1 sec. (off) → 0.3 sec.	Chip card defective
4 blinks: Red (on) → 0.1 sec. (off) → 0.3 sec.	TX module defective
3 blinks: Red (on) → 0.1 sec. (off) → 0.3 sec.	Jammed or defective pushbutton
Red (on) → 0.1 second (off) → 0.1 second	Emergency stop or POS function started (refer to note)
	Emergency stop with pressing pushbutton or pushbuttons jammed
Red (on) → 0.1 second (off) → 0.9 second	Transmitter low-voltage warning
0.5 sec. per step: Green (1) → (1+2) → (1+2+S) → (1+2+S+3) → (1+2+S+3+4)	Update the chip card
0.5 sec. per step: Green (4) → (3+4) → (S+3+4) → (2+S+3+4) → (1+2+S+3+4)	Copy CPU data to chip card

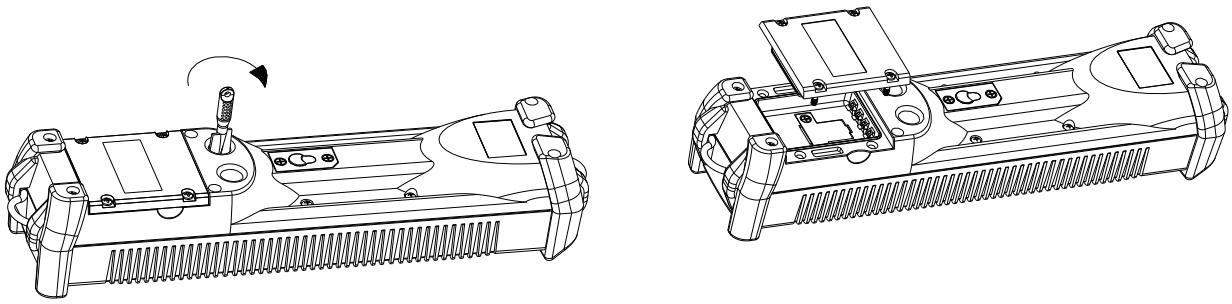
Note: POS = Power Off Stop: When set the power switch to (Off) position, transmit "Stop" codes.

3. Transmitter Maintenance

Check transmitter outline:

A. Check the transmitter enclosure and pushbutton rubber boot. If it is damaged, enclosure and pushbutton rubber boot should be replaced.
B. Always keep the battery terminals clean.
C. Check if there is simple battery charge: Turn the transmitter on and check if the LED displays "S" blinking green.

4. Loading the battery:
Remove the battery cover screws which on the back of transmitter and load the battery.



(Fig.12)

7. RECEIVER INSTALLATION

7.1 Preparation for Installation

1. Required Tools:

(1) Flat Head Screwdriver (-)

(2) 5mm Wrench X 6

(3) Multi-Meters

(4) Box end wrench or 14 ㎜ Wrench X 2

(5) Power Drill

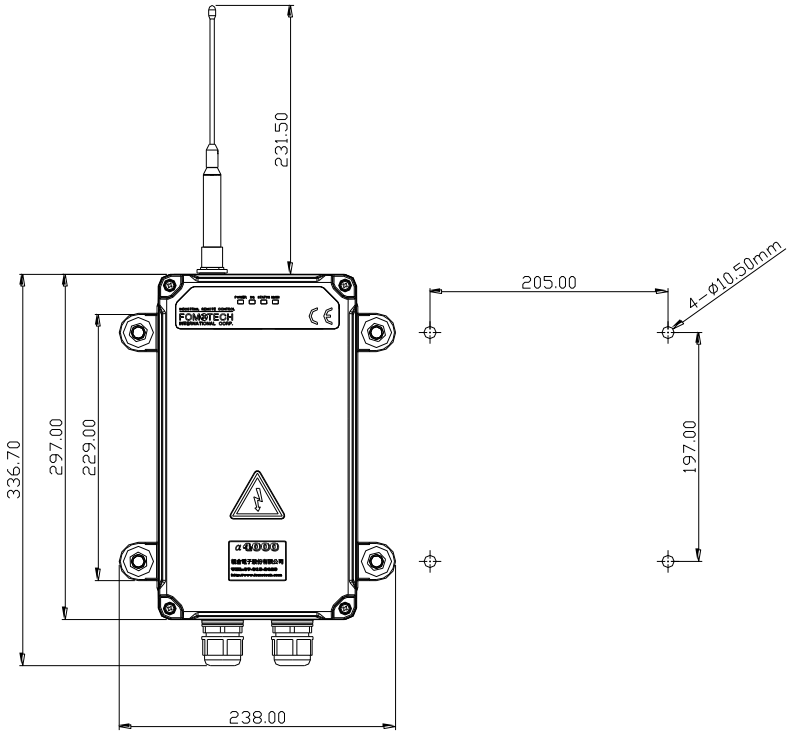
(6) Power Drill with φ10.5 ㎜ ~φ11 ㎜ Drill-Bit

(7) Long nose pliers

(8) Cutter pliers

(9) Output Cables (φ12.5 ㎜~φ19.5 ㎜) and wiring materials

2. Receiver Mounting Dimension



(Fig.13) Receiver Mounting Dimension

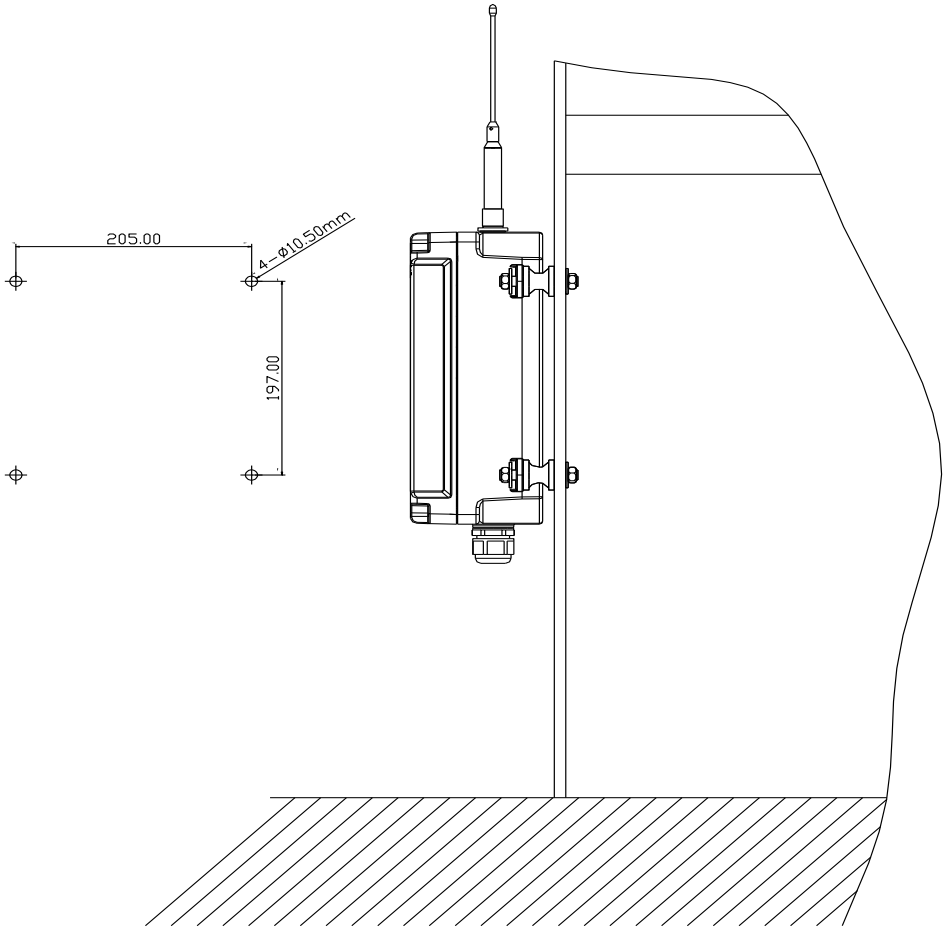
3. Ensure receiver is not set to the same frequency channel and ID code as any other units in use at the same facility or within distance of 300 meters.

4. Prior to installation, make sure that the crane or equipment itself is working properly.

5. Use the multi-meter to check the voltage source available and ensure the receiver voltage setting matches your power source. Prior to installation, switch off the main power source to the crane or equipment.

7.2 Step-by-Step Receiver Installation

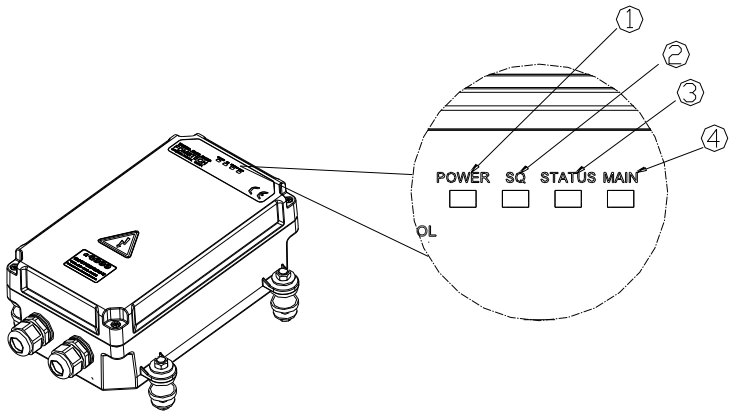
1. Select a suitable location to mount the receiver.
2. As much as possible, the location selected should be has the antenna visible from all a reas where the transmitter is to be used.
3. The location selected should not be exposed to high levels of electric noise.
4. Ensure the selected location has adequate space to accommodate the receiver enclosure.
5. The distance between the antenna and the control panel should be as far as possible.
6. Drill four holes on the control panel (10.50mm)
7. Tighten all screws provided.
8. Ensure AC ground is connected to the power input terminal block otherwise chassis gro und should be connected to the chassis ground connection hole on the receiver enclosur e.
9. Ensure all wiring is correct and safely secured and all screws are fastened.



(Fig. 14) Receiver mounting size

7.3 Receiver Status LED Displays

1. Receiver Status LED Display



(Fig 15) Receiver Status LED Display

1. Receiver Power Display
2. Receiver SQ Status Display
3. Receiver Status Display
4. Receiver MAIN Relay Display

2. Receiver Central CPU Status LED Display

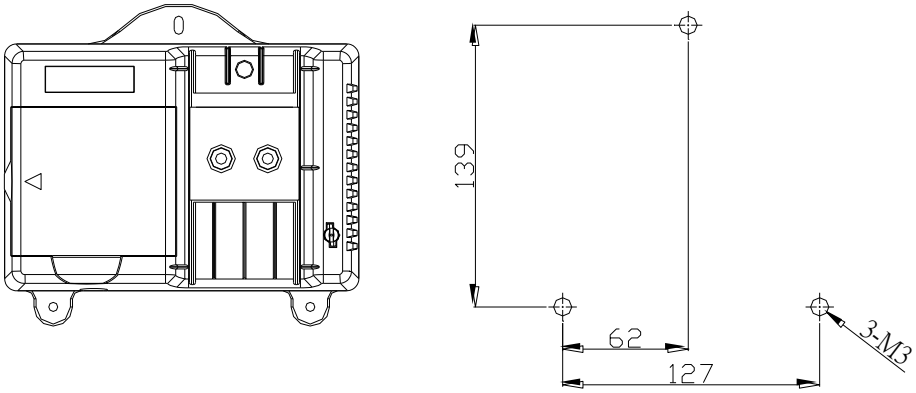
LED INDICATION	**REASON**
Constant (Green)	Transmitted signals detected and received
Fast Blinks (Green/ Red)	Transmitter power (on) step incorrect
Blinks (Green)→ 0.1 sec.	Transmitted signal decoded.
Green (On)→ 0.1 sec. (Off)→ 0.8 sec.	Decoder on standby (No transmitted signals detected)
Green (On)→ 0.3 sec. (Off)→ 0.1 sec.	Calibration function for smart frequency is active
2 Fast Blinks (Red)	Incorrect transmitted ID code
3 Fast Blinks (Red)	Main contact relays jammed or defective
4 Fast Blinks (Red)	RX module defective
5 Fast Blinks (Red)	Chip card defective
6 Fast Blinks (Red)	Chip card data error
7 Fast Blinks (Red)	EEPORM error
8 Fast Blinks (Red)	System fault
POWER LED DISPLAY	**STATUS**
No light display	Under-voltage (voltage < 10.5V)
Blinks (Red) → 0.1 sec.	Over-voltage (voltage > 16V)

8. BATTERYCHARGING &LED DISPALY

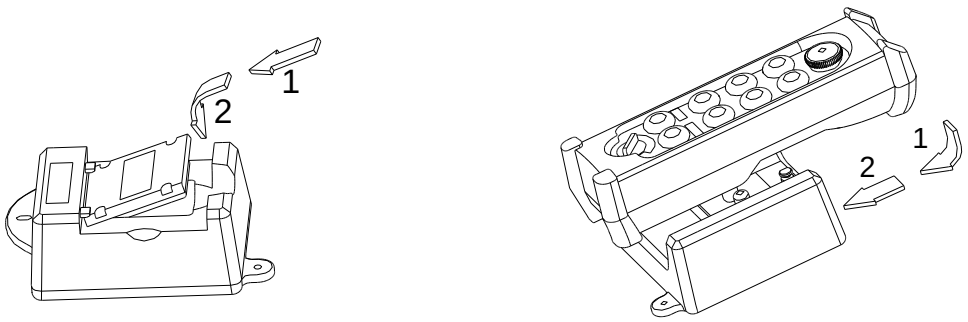
8.1 Battery Charging

1. Connect the power cable to the charger. Charger source voltage AC100 ~240V. (Refer to page 7 Fig.4.)
2. Insert spare battery pack to the charging compartment of the charger. (Refer to 8.2 for battery charger status power LED display)
3. Switch the transmitter power key to off position. Then place the transmitter charging holes to the charging poles of the charger. (Refer to 8.2 for battery charger status power LED display)

Note: The lithium battery has to be recharged within 3 months after the manufacturing date.



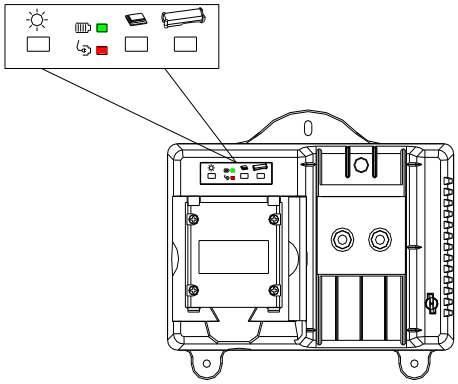
(Fig.16)



Insert battery pack Insert transmitter

(Fig.17)

8.2 Battery Status LED Display



(Fig.18)

		LED Status Display	Reason
Power LED ☼	1	Green (on)	Normal-voltage
	2	No LED display	Under-voltage
	3	Green blinks → 0.1 second	Over-voltage
Battery charger LED	1	No LED display	Standby
	2	Red (on)	Charging
	3	Red (on)→ 0.1 sec., (off)→ 0.3 sec. Blink every 2 sec.	Battery over-charging
	4	Red (on)→ 1.9 sec., (off)→ 0.1 sec.	Warm-up
	5	No LED display	Under-voltage
	6	Green (on)	Charging is completed
Transmitter charger LED	1	No LED display	Under-voltage
	2		Standby
	3	Red (on)→ 1.9 sec., (off)→ 0.1 sec.	Warm-up
	4	Red (on)	Charging
	5	Green (on)	Charging is completed
	6	Red (on)→ 0.1 sec., (off)→ 0.3 sec. Blink twice	High circuit temperature.
	7	Red (on)→ 0.1 sec. Blink once	Overtime charging
	8	Red (on)→ 0.1 sec., (off)→ 0.3 sec. Blink 3 times	Circuit defective
	9	Red (on)→ 0.1 sec., (off)→ 0.3 sec. Blink 4 times	Remove battery before charging is completed

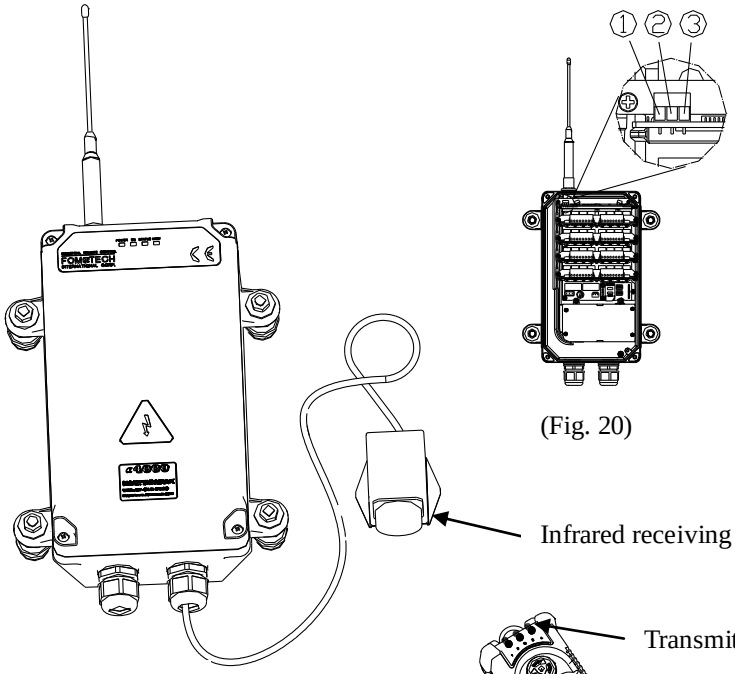
9. TROUBLE SHOOTING

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

PROBLEM	POSSIBLE REASON	SOLUTION
Transmitter does not communicate to receiver.	Transmitter and the receiver are not on the same RF channel (SQ 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 to receiver.	Low or no transmitting power from the transmitter unit.	Turn on the transmitter with EMS button elevated. If the status LED displayed a blinking red lights or no lights at all, then turn the power off and charging or replace rechargeable battery.
No power to the receiver.	Blown fuse or no input power connection.	Ensure power input to the receiver unit is correct. If power indicator (AC) is not lit, please check the receiver for any open fuse.
Pushbuttons interlocked	The pushbuttons are interlocked to its self so no conflicting commands can take place for safety purpose. For example, pressing the Hoist "UP" and Hoist "DOWN" pushbutton simultaneously will result in no command being sent.	Turn off the transmitter power then restart. Do not press two pushbuttons simultaneously.
The transmitter status LED displayed a blinking red lights 6 times.	Chip card program incorrect.	Refer to software manual and reset program.
The transmitter status LED displayed a blinking red lights 5 times.	Chip card un-inserted.	Insert chip card.
SQ LED blinking lights when the transmitter is turned off. Or when the transmitter is active normally, the receiver is not active or reaction delay.	Other radio interference.	Change to other frequency.

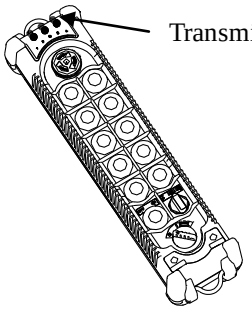
POWER SUPPLY MODULE	FUSE
AC100~240V	3A fast acting glass tube fuse
AC380~460V	3A tube fuse (with terminal/fast acting type)
AC28~48V	5A fast acting glass tube fuse
DC12~24V	5A fast acting glass tube fuse

10. OPTIONAL FEATURE: INFRARED STARTUP



(Fig. 19)

(Fig. 20)



(Fig. 21)

- Infrared Startup Accessories:

  1. Transmitter infrared LED sensor (refer to Fig.18)
  2. Infrared receiving module (refer to Fig.21)
  3. Infrared receiving module input connector (refer to Fig.20):
     (1) GND (2) DC+8V (3) Infrared receiving module

- Set "Infrared Startup" of chip card (refer to chapter 5.7 of software function setting manual).
- If the ID code of the transmitter unit is altered via 8-pin dip-switch setting inside the transmitter , you must then also change the ID code in the receiver.
- If the system is equipped with an "Infrared Startup" function, the operator then can only activate the receiver MAIN relay within 100-meter linear distance from the location of the receiver or the receiving infrared module. Point the infrared LED sensor located on the front of the transmitter towards the infrared receiving module.
- How to cancel " Infrared Start" function

  1. Insert pin both into (1) GND and (3) Infrared receiving module
  2. Or remove Infrared receiving module input connector (refer to Fig.20)
  3. Or reset chip card without "Infrared start" function.

11. SYSTEM SPECIFICATION

11.1 Transmitter Unit

Frequency Range	:	PLL 433MHz
Transmitting Range	:	70 Meters
Hamming Distance	:	D ≧ 6
Channel Spacing	:	25 KHz
Frequency Control	:	Quartz Crystals (PLL)
Frequency Drift	:	< 5ppm @ -10℃ ~ 70℃
Frequency Deviation	:	< 1ppm @ 25℃
Spurious Emission	:	> 50dBc
Transmitting Power	:	~1 mW
Emission	:	F1D
Antenna Impedance	:	50 Ω
Enclosure Rating	:	IP-65
Source Voltage	:	4.2VDC lithium / 1800mA
Current Drain	:	~20mA@3.7V
Operating Temperature	:	-10℃ ~ 70℃
Dimension	:	273 mm x 65 mm x 52 mm (12 pushbuttons) 228 mm x 65 mm x 5 2mm (8 pushbuttons)
Weight	:	Alpha 4008: 530g (with 1800mA lithium battery) Alpha 4012: 600g (with 1800mA lithium battery)

11.2 Receiver Unit

Frequency Range	:	PLL 433 MHz
Channel Spacing	:	25KHz
Hamming Distance	:	D ≧ 6
Frequency Control	:	RX module card or synthesizer (PLL)
Frequency Drift	:	< 5ppm @ -10℃ ~ 70℃
Frequency Deviation	:	< 1 ppm @ 25℃
Sensitivity	:	< -125dBm
Antenna Impedance	:	50 Ω
Data Decoder Reference	:	Quartz Crystals (PLL)
Responding Time	:	50 ~ 150 ms
Enclosure Rating	:	IP-65
Source Voltage	:	100 ~ 240VAC @ 50/60 Hz.
Power Consumption	:	MAX 32W@240VAC 50Hz
Operating Temperature	:	-10℃ ~ +70℃
MAIN Contact Rating	:	250V @ 5A
Output Contact Rating	:	250V @ 10A
Dimension	:	300 mm x 171 mm x 115 mm
Weight	:	4,500g

11.3 Charger Unit

Frequency Range	:	PLL 433 MHz
Power Consumption	:	DC12 ~ 24V 24W or AC100 ~ 240V 50/60Hz 30W
Operating Temperature/ Humidity	:	- 20℃ ~ +40℃/ 95%
Charging time	:	Battery: 3.6 hr (500mA), Transmitter: 2.4 hr
Heating time	:	To -3℃ Max 30 minutes
Dimension	:	174.5 mm x 122 mm x 55 mm
Weight	:	500g

12. PARTS LIST

12.1 Transmitter Unit

1.	A4008-3 Transmitter	BT4008
	A4012-2 Transmitter	BT4012
2.	A4008 Encoder Board (2-speed)	EN4008
	A4012 Encoder Board(2-speed)	EN4012
3.	A4000 433MHz Transmitting RF Board	TX4000
4.	Transmitter chip card holder	CH4000
5.	1-speed pushbutton	PB4001
	2-speed pushbutton	PB4002
6.	2-stage selector switch	SW-2T
	3-stage selector switch	SW-3T
	2-stage selector switch (momentary)	SW-3TM
7.	Alpha 4008 transmitter upper casing	BCTT4008
	Alpha 4008 transmitter bottom casing	BCTB4008
	Alpha 4012 transmitter upper casing	BCTT4012
	Alpha 4012 transmitter bottom casing	BCTB4012
	Alpha 4008 transmitter casing	TC4008
	Alpha 4012 transmitter casing	TC4012
8.	Pushbutton rubber boot	RB4000
9.	Emergency stop button	EMS500
10.	Emergency stop red cap	EMS04
11.	Chip Card	CHIP
12.	Lithium battery	BAT4000
13.	Shoulder strap	SS5000
14.	Transmitter key + strap (all models)	TK4000
15.	Transmitter anti-vibration bumper (upper right/bottom right/upper left/bottom left)	SB4000

12.2 Receiver Unit

16.	A4008 receiver	R4008
	A4012 receiver	R4012
17.	PLL RX Module (All Modules)	RX4000
18.	Relay board (16R) for Alpha 4008 models	RY4001
	Relay board (24R) for Alpha 4012 models	RY4002
19.	Regular Relay 12VDC	RR12V
20.	Safety Relay 12VDC	SR12V
21.	433/419/447MHz Receiver Antenna	ANT433
22.	A4000 Receiver Upper Enclosure	RCT4000
	A4000 Receiver Bottom Enclosure	RCB4000
	A4000 Receiver Enclosure (complete)	RE4000
23.	Shock Absorber	SA4000
	Decoder board	DE4000
	Decoder board (Infrared)	DE4000
	Power supply card (100-240VAC)	PS4000
	Transformer EV-00029	TEV029

12.3 Battery Charger

24.	Charger (AC100-240V)	BCH4000
25.	Charging hole cleaner	CLEAN4K