AL-238P
Installation Manual

Contents

Part 1 General description

This series of control panel is a kind of intelligent voice-based security technology prevention product that integrates many advanced technologies and functions. It is widely used in various types of security systems such as villa community, perimeter alarm system and office building.

The anti-theft system consists of a control keypad, a control panel, a remote control, an infrared detector, a door magnet, a smoke detector, and a strong siren. Easy to install, simple to operate, can store 8 alarm calls (such as: user mobile phone number, fixed phone number, etc.). It can be used alone (not connected to the Internet), or can be used for networking through GPRS/IP. It can realize computer software management, cloud service alarm system connection, and easy integration with other systems. It is an ideal choice for installing anti-theft alarm equipment in homes, business places, financial systems and other units.

1. AL-238P main function

1.1、 Features

- Up to 40 zones can be connected: 8 wired detectors, up to 40 wireless detectors, LORA wireless detectors or 40 485 extended detectors.
- The control panel itself supports 2 programmable outputs and one alarm output. Each programmable output supports 200mA current, supports arming linkage, alarm linkage, software control. Output can be pulsed for a long time, and the time and the times of pulse can be programmed.
- DC13.8V power input: 1 set of auxiliary power output (maximum 500mA); 1 set of spare battery interface (AC and DC automatic switching, undervoltage can be identified and reported to the center.)
- Extend 40 relay outputs through 485, which can be used as linkage output, and the linked zones and attributes can be programmed.
- Support 6 groups of timed arming and disarming functions, support Monday to Sunday optional. Arm and disarm the entire control panel.
- The control panel can communicate through phone, SMS, GPRS, IP and other alarm notifications, support 8 SMS and telephone alarm numbers; 1 GPRS center, 2 IP centers; support alarm calls and SMS notifications. Telephone and text messages

can remote arming/ disarming. Each group of SMS numbers can be set to disarm. You can call, program, and listen to the intercom on the phone.

- Support 8 LED keypads, LED keypad can display the status of zone, programming, armed and disarmed.
- The control panel supports 1 installer password and 1 programming password, 1 hijack password, 16 user passwords (programmable disarming authority), and 40 zone operation passwords. The password is 6 digits.
- Support RS232 interface, support local program upgrade and access 232 serial printer, real-time alarm printing.
- Support 20 seconds recording, record the name of the installation location of the alarm control panel, broadcast the recording when the alarm, let the alarm personnel know the alarm position at the first time.
- Intelligent voice prompts, support for arming and disarming, programming, alarm voice broadcast, and zone broadcast content synchronization zone name (use "local control panel name" + "zone name" + "alarm" combination). Voices include local broadcasts and user phone voice broadcasts. Support remote reminders, off-duty reminders and warning reminders for networked alarm users.
- The system comes with a real-time clock, and continues to run under power failure.
- The system supports the black box function, which can save the latest 6000 alarm records and operation records separately. Voice broadcast alarm record and time. The voice broadcast is queried through the keypad operation: alarm record, operation record, system status, system time, system version, and GPRS signal strength.
- Modular design, the circuit board contains LORA module interface, IP module interface, GPRS module interface, PSTN module interface. Users can choose.
- Support 16 groups remote control, remote control one-button self-learning.
- Send to receiver such as armed, forced armed, staying armed, quick armed, armed reminder, undervoltage buzzer reminder, 3 consecutive keyboard operations error lock screen, AC power off/recovery, delay zone trigger.

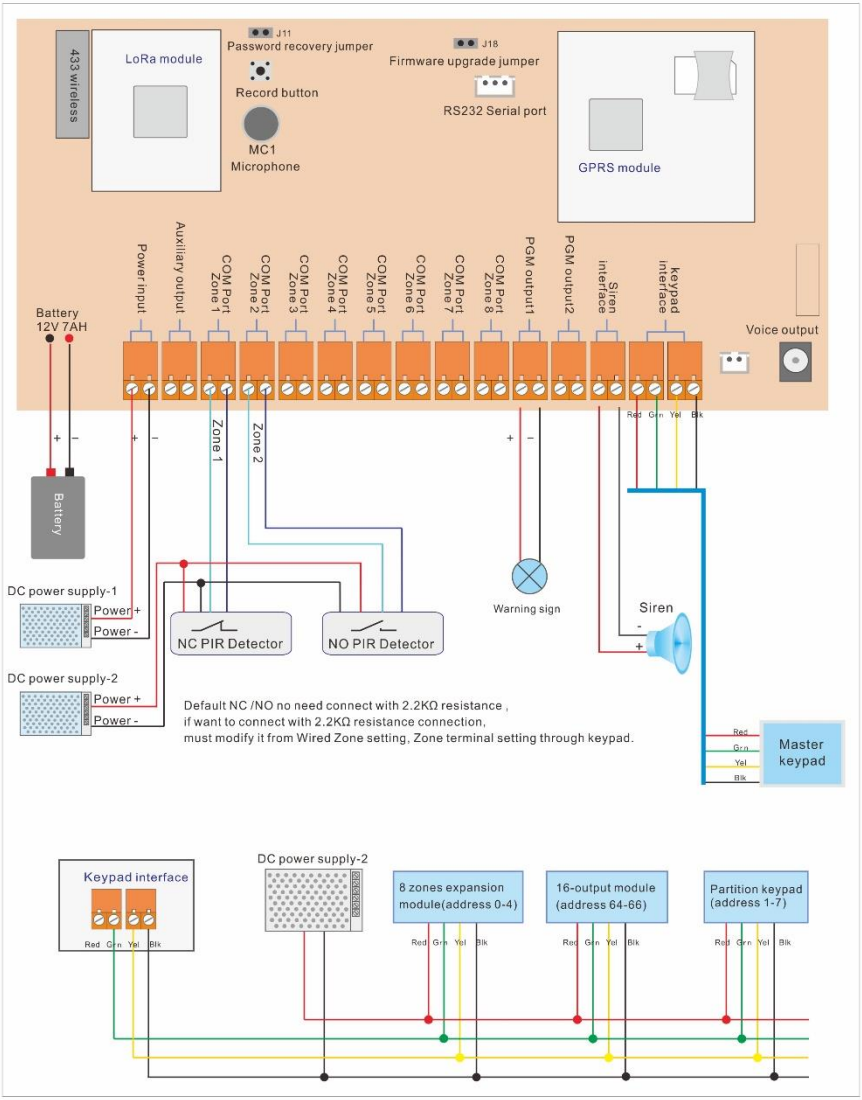
1.2、 Electrical performance index

Input power	DC12-27V	Wired zone	2.2KΩ EOL Resistor
Backup battery:	12V7AH lead acid battery	Working temperature	-10~55°C
Auxiliary output	DC12V 500mA	Chassis size	255*265*88mm
Power consumption	300mA	Keypad size	161*120*28mm
Alarm status	≥1000mA (based	Wireless	433MHz, encoding mode

	on the alarm number and other external devices)	parameters	1527
Alarm output	DC12V 500mA	Weight	≥3kg
Programmable output	DC12V 200mA		

2. System wiring instructions

1.1、 System wiring diagram



1.2、 AL-238P connection to the power supply

AL-238P adopts wide voltage design and can withstand DC12-27V power supply. The

power supply is input from the red and black terminals of the power input interface; it will indicate the system is undervoltage when the power supply voltage is lower than 10V.

Note: The common voltage of the battery voltage is 12V, 18V and 24V. When powering the alarm control panel, the power supply voltage should be higher than 1.1-1.2 times of the battery voltage. For example, the 12V battery is connected to DC13.8V.

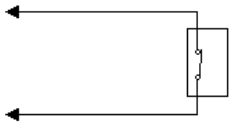
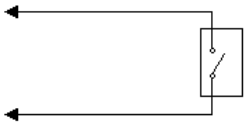
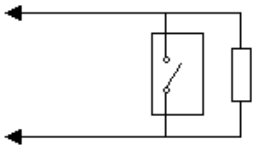
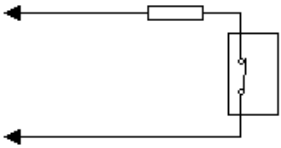
1.3、 AL-238P and the keypad connection

The VCC, A, B, and GND of the keypad correspond to the red, green, yellow, and black terminals of the master keypad, and up to 8 keypads are connected.

1.4、 AL-238P connection to wired detector

The AL-238P series control panel can connect up to 8 wired detectors. The control panel has 16 wired zones access terminals and supports 4 types of zone wiring.

The specific connection is as follows:

(1) 、NC wired detector connection	(2)、NO wired detector connection
	
(3)、With 2.2K NO wired detector connection	(4)、With 2.2K NC wired detector connection
2.2k EOL resistor 	2.2k EOL resistor 

1.5、 AL-238P connection to siren

The AL-238P control panel comes with an active alarm output interface to connect the

siren which is the power in 12V/500mA.

The (+) of the siren is connected to the (+) of the siren output, and the (-) of the siren is connected to the (-) of the siren output.

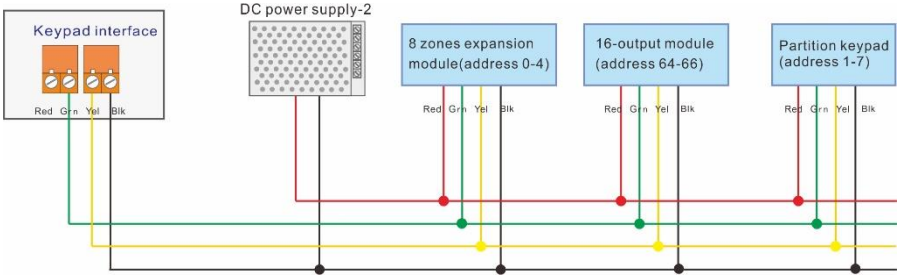
1.6、 AL-238P connection to bus device (8 zones extend module, 16 outputs module)

The AL-238P control panel is connected to the bus device (8 zones extend module, 16 outputs module) through the RS485 keypad communication interface. The power supply of the bus device and its detector is recommended to be powered by a separate power supply. The total power consumption of all devices attached to the same power supply should not exceed the power rating of the power supply.

The keypad communication interface is 4 terminals, and the ports are defined as follows:

R -- Power supply +　　Y -- Communication bus B

G -- Communication bus A　　B -- Power supply



1.7、 Backup battery

Backup battery 12V/7AH, the red line of the control panel battery interface is connected to the battery + and the black wire is connected to the battery -. When the power supply fails, the control panel automatically switches to the backup power supply.

3. Main board lights status description

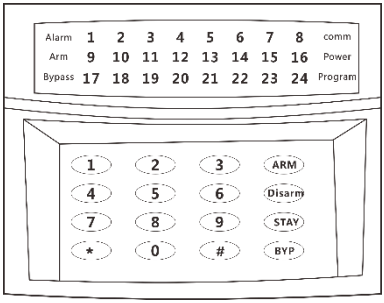
LED light	**LED function**	**LED status**
LED1	Power light	Light on when in power
LED2	Serial communication light	Light on when serial port receives the data
LED3	485 communication light	Light on when 485 communication is normal and flashing, light off when abnormal

LED4	System running light	Light flashes once every 1 second when system runs normally
LED5	GPRS communication light	Light flashes once every time GPRS receives data
LED6	IP module communication light	Light flashes once every time IP receives data
LED7	LORA communication light	Light flashes once every time LORA receives data

4. Main parts description

1.1、 Keypad

Keypad layout



The keypad is mainly divided into two areas: the display area and the keypad area.

The keypad display area shows the running status of the control panel: such as arm, communication to receiver, power supply, program, bypass, and zone.

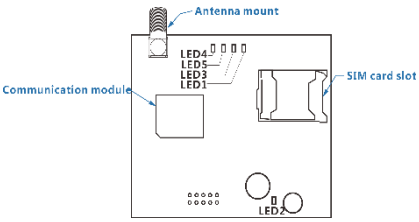
The keypad area is mainly divided into: password input and programming command input, system arming, disarming, staying arming, bypass and other function buttons.

Keypad display status description:

Power light	Light on when in power
Arming light	Light on when system armed, off when system disarmed
Bypass light	Light on when staying armed
Program light	Light on when in programming
Communication light	Light on as long as the receiver communication is normal
Alarm light	Light on when any zone alarm
1-24 zone light	The zone lights are off when zones are normal; the zone light will be on the zone is triggered; the zone light will be on for a long time when zone alarms and the zone light will flash after the alarm time expires.

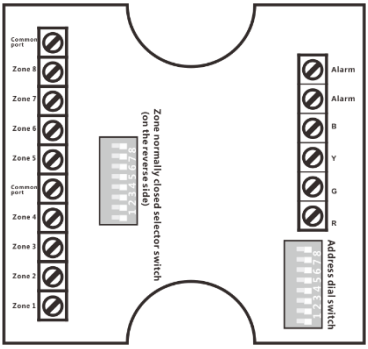
1.2、 Module function

GSM / GPRS module

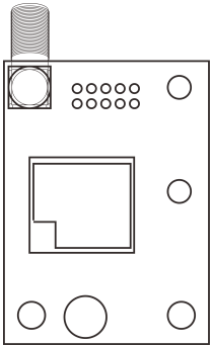


Module LED status
LED1= flash once means search for the base station, flash 3 seconds means connecting to the base station normally
LED3= Constantly light on means the SIM card is detected, light off means the SIM card is not detected.
LED4= flashing is receiving data
LED5= flashing is sending data

8 zone module



LORA module



Lora module: Lora module is the Lora communication expansion module of the control panel, which supports Lora wireless alarm device access.

Part 2 Keypad Operation Instruction

1. Keypad address and password modification

1.1、 Modify keypad password

（1）． Press [BYP] for 3 sec or more

（2）． Input keypad programming password: 6 digits.

Notes：The factory default keypad programming password is [1][2][3][4][5][6]. If password is forgotten, the following steps to restore keypad programming password is 123456.

<1>. Disconnect keypad power.

<2>. Connect jumper JP1.

<3>. Connect keypad power.

<4>. Disconnect jumper JP1.

（3）. Press [*] key for 3 second. Programming light is on which indicates you have entered programming mode.

（4）. Enter function code 0000（4 digits）, and input 6 digits new password. If password is correct, control panel will sound long 'di' （1sec）; If wrong, there is an error hint sounds 'di di di', and the keypad will exit programming automatically. Have to re-enter programming and input right programming code to be successful.

（5）. During or after programming, press and hold [*] key for 3sec to exit.

1.2、 Modify keypad address

（1）. Press [BYP] for 3sec or more.

（2）. Input keypad programming code: 6 digits. Notes: Factory default programming code is [1][2][3][4][5][6].

（3）. Press [*] 3sec. Programming light is on which indicates you already enter programming mode.

（4）. Input function code 0100（4 digits）. And enter 2 digits keypad address, e.g. 01（keypad address is 0~7，there are 8 keypad addresses）, If the address is correct, control panel will sound long beep（1sec）; If wrong, there is an error hint sounds 'di di di', and the keypad will exit programming automatically. Have to re-enter programming and input right programming code to be successful.

（5）. During programming or after setting, pressing [*] key for 3sec to exit.

2. Programming examples

E.g. 1: Change programming password to '456789'

Enter programming mode and input 0000, and then input '456789'.

Input format: [0]+[0]+[0]+[0]+[4]+[5]+[6]+[7]+[8]+[9]

E.g.2: Change keypad to keypad 1

Enter programming mode and input 0100, and then input 01.

Input format: [0]+[1]+[0]+[0]+[0]+[1]

Notes: If no operation is performed within 3 minutes, system will exit programming mode automatically.

3. Programming function list

Function code	Function instruction	Programming digits	Factory default	Allowed programming range
0000	To change keypad programming password	6	123456	000000-999999

0100	Keypad address	2	00	00--07 (00 master keypad / 01 to 07 partition keypad)

This operation is to modify the address of the keypad itself, it is only set the system accesses multi keypads, and it is no need to modify when there is one keypad.

Part 3 System Operation Instruction

1. User operation guide

1.1、 Arming

Keypad arming: password + "arm AWAY" key

Remote controller arming: Press " 🔒 " key

After right operation, control panel sounds di...di...di..., wait till control panel delay arming time is up, and the arming succeeds. (Buzzer + voice hint till delay arming ends)

1.2、 Quick arming

Keypad quick arming: "arm AWAY" key for 3sec or more, control panel buzzer sounds di...di...di..., wait until control panel delay arming time is up, and succeeds. (Buzzer + voice hint till delay arming ends). Note: this function requires turn on "Quick arming", change programming address from 301 to 1, that is 13011#。

1.3、 Stay arming

(Staying arming mode, when there is a zone set to the home zone, adapting Stay Arming, all of home zones are invalid, which means they are in disarming status, only effective when are not home zone.)

Keypads stay arming: password + "stay MEM" key

Press remote control stay arming: " 🏠" key, control panel starts sound di...di...di..., wait till delay time is up, control panel arming succeeds. (Buzzer + voice hint till delay arming ends).

Disarming

Keypad disarming: password + "disarming STAY" key

Press remote control disarming: " 🔓 " key

Keypad buzzer sounds once, the alarm enters disarming status.

1.4、 Duress disarming:

Keypad operation: seized & held password +"disarming STAY" key, control panel disarms and report to receiver to tell Duress alarm.

1.5、 Eliminate alarm

Keypad operation: password + "*" key (can remove voice, output, siren, display)

1.6、 Keypad locked

If keypad locked function is turned on, keypad disarming operates 3 times error password, and enters locked status. Only beep when you press any key.

1.7、 Unlock

The keypad will unlock automatically after15 minutes or cut off the control panel and restart.

1.8、 Set to factory default

Cut off control panel, short circuit installer password recover jumper pin J11, and power on, enter programming to modify to 44+02+1#, keypad control panel set to factory default.

1.9、 Restore Installer password

Control panel power off, short circuit Installer password restore jumper pin J11, re-power installer password to restore the factory (123456).

1.10、 Query alarm record

Enter programming and input 00+01， control panel broadcast the latest alarm record, press key 1 to query previous alarm record, press key 2 to query next alarm record. Key 0 is to repeat once. Press "#" to exit.

1.11、 Query GSM Antenna signal CSQ value

Enter programming and input 00+06 CSQ value range is 0～31，control panel broadcast CSQ value. CSQ value reaches to meet the signal strength requirements of GPRS communication, if the value is 99, please check the GSM antenna, move position of the control panel or take other actions. Press "#" to exit.

2. System programming instruction

1.1、 Enter programming

Input format: Installer password (6 digits) + # (factory default password: 123456)

Note: enter programming successfully, buzzer sounds a long beep, programming LED turns on voice broadcasts "enter programming" which means the control panel is in state of programming.

1.2、 Exit programming

Input format: * under programming press "*" directly to exit programming.

Note: when exiting programming state, buzzer sounds a long beep, programming LED turns off, or stop operating keypad in 30 seconds，control panel will exits automatically, buzzer does not sound，programming LED turns off

3. Control panel programming list and each item default value

Attachment 1

Control panel query list:

Functionmenu	Main code	Sub-code	Factory value/ programming digits	Function instruction	allowed programming function code range and operation instruction
Query	00	01		Query alarm record	Input format: 00+N Press 1 to previous, press 2 to next query, press 0 to repeat. # to exit. E.g. query alarm record, after entering programming, input 0001. When querying, voice broadcasts certain event: E.g., mmddyy hhmm zone 5 alarms， mmddyy hhmm arming.
		02		Query operation record	
		03		Query system AC supply, expand module and accidents details	
		04		Query system version	
		05		Query system time	
		06		Query GPRS signal strength	Voice broadcasts

Attachment 2

Control panel programming function list and each address default value:

Function menu	Main code	Sub-code	Factory value/ programming digits	Function instruction	allowed programming function code range and operation instruction
Password setting	01	01	123456(6digits)	Installer password	Input format: 01+N+ new user password (6digits)+# N indicates programming address 01~59, that is: main password, programming password, user password 1~16, zone password 1~40.. E.g. to modify Installer password to: 654321 Under programming state input 01+01+654321+# (default Installer password:123456)
		02	654321(6digits)	Programming password	
		03	100001(6digits)	Group 1 user password	
		04	100002(6digits)	Group 2 user password	
		...	...	...	
		18	100016(6digits)	Group 16 user password	
		19	200001(6digits)	Zone 1 password	
		...	....	...	
		58	200040(6digits)	Zone 40 password	
		59	987654(6digits)	Duress password	
User password permission setting	02	01	3(1digit)	Group 1 password arming/disarming permission	Input format: 02+ N +X+# N indicates programming address 01~16, that is: password 1~16 X indicates 0: prohibited 1: arming allowed 2: disarming allowed 3: arming/disarming allowed E.g. to set password 1 arming disarming are allowed, under programming state, input format: 02+01+3+#
		02	3(1digit)	Group 2 password arming/disarming permission	
		...	...	...	
		16	3(1digit)	Group 16 password arming/disarming permission	
Arm & Disarm timing	03	01	99999999（8 digits)	Arm &Disarm timing setting 1 time setting	Input Format: 03+N+XXXXYYYY+# N indicates for

settings		02	99999999（8 digits)	Arm &Disarm timing setting 2 time setting	programming address 01~06， which means 1~6 groups' time of Arm &disarm timing. XXXX means arming time，the first two digits means hour（s)， the last two digits means minute（s)； YYYY means disarming time，the first two digits means hour（s)， the last two digits means minute（s)； More than 23:59 is invalid Default factory value is 99999999.
		...	...	...	
		06	99999999（8 digits)	Arm &Disarm timing setting 6 time setting	
Arm &Disarm timing permissions settings	04	01	1（1 digit)	Attribute of Monday	Input Format：04+N+X+# N indicates the programming address 01~07，which means Monday to Sunday. X means 0：Forbid arming & disarming timing setting on that day 1：Allow arming & disarming timing setting on that day Default factory value is 1which means all are enabled
		...	...	...	
		07	1（1 digit)	Attribute of Sunday	
Settings On-board Zones attribute	05	01	1（1 digit)	Attribute of control panel with wired zones terminal 1	Input Format：05+N+X+# N indicates programming address 01~08，means：It comes with 1~8 zones terminal. X means 0=forbid 1=NC 2=NO 3=with 2.2K EOL resistor Default factory value is 1，which means all zones do
		02	1（1 digit)	Attribute of control panel with wired zones terminal 2	

		...	...	...	not need to connect to 2.2K EOL resistor.
		08	1 (1 digit)	Attribute of control panel with wired zones terminal 8	
Trigger settings of control panel with wired zones	06	01	30 (2 digits)	Triggered valid time of control panel with zone 1	Input Format: 06+N+X+# N indicates programming address 01~08, which means it comes with 1~8 zones. X indicates triggering time: programming value is 01~30 Formula: (01~30) *20ms, which means 20ms~600ms Default factory time is 30, while the value is 600ms
		02	30 (2 digits)	Triggered valid time of control panel with zone 2	
		...	...	...	
		08	30 (2 digits)	Triggered valid time of control panel with zone 8	
Settings of zones' attribute	07	01	111 (3 digits)	Attribute of zone 1	Input Format: 07+NN+XYZ+# NN indicates programming address 01~40, which means zones programming address of zone attribute. X indicates type of zones -- 0: shield zone; 1:instant zone; 2:delayed zone; 3:24 hours zone; 4:fire alarm zone; 5:null; 6:temperatureDetect zone; 7: panic zone; 8:trigger arm &disarm zone (control panel will arm when it be triggered, and will disarm when it be triggered again); Y indicates status of siren -- 0: Silence alarm; 1: sound alarm
		02	111 (3 digits)	Attribute of zone 2	
		...	...	...	
		40	111 (3 digits)	Attribute of zone 40	

					Z indicates forbid at home -- 0：zone at home；1：zone not at home System default value is 111 For example： The first zone will be set as 24 hours zone and sound zone, then we need input： 07+01+3+1+0+#
Settings of smart zones	08	01	00000（5 digits）	Parameter setting of smart zone 1	Input Format： 08+N+XXYYZ+# N indicates programming address 01~40，which means 1-40 smart zones' programming address. XXYY indicates：XX m YY s Z indicates times of being triggered -- programming value is 0~9，while Z=0 means to be triggered all the time. For example：The smart zone of wired zone 1 is set to last 10 seconds. Trigger 3 times as an alarm prompt, enter: 08+01+0010+3#
		02	00000（5 digits）	Parameter setting of smart zone 2	
		...	....	...	
		39	00000（5 digits）	Parameter setting of smart zone 39	
		40	00000（5 digits）	Parameter setting of smart zone 40	
Settings of wireless zones	09	00		Eliminate all wireless zones.	Input Format：09+00+9+#, that means eliminate all wireless zone codes.
		01		Zone 1 wireless self-learning	Input Format：09+N+X+# N indicates programming address 01~40, which means the match code of zones 1-40. X indicates ： X=1， which means to wait for the wireless detector to trigger, to trigger twice, each time interval more than 2 seconds, and after the
		02		Zone 2 wireless self-learning	
				.....	
		40		Zone 40 wireless self-learning	

					same code twice, automatic update, and quit the current self-taught programming X=9, which means to clear the original learned wireless code. Within 30 seconds, no button, automatically exit self-learning mode For example: study zone 1 wireless code, the operations are as below: input: 09+01+1+#, when "wireless self-learning entry" is heard, the wireless detector will be triggered twice, and "wireless self-learning success" will be heard for each trigger, indicating successful learning. If you want to delete the wireless code of defense zone 1, then input: 09+01+9+#
Settings of wireless remote control	10	00		Eliminate all wireless remote controls	Input Format: 10+00+ 9# Eliminate all encodes of remote controls
		01		wireless remote control 1	Input Format: 10+N+X+# N indicates programming address 01~16, which means study match coeds remote control. X means: X=1, start learning and wait for the wireless detector to be triggered twice, each time interval more than 2 seconds, and after the two codes are the same, automatically update.
		02		wireless remote control 2	
		.....		.....	
		16		wireless remote control 16	

					X=9, indicates that all previous study codes have been eliminated. Exit self-learning mode automatically in 30 seconds within no button pressed. For example：Study remote control 1 wireless code. The operations are as below: Input: 10+01+1+# when "wireless self-learning entry" is heard, press the wireless remote control twice, and each trigger will hear "wireless self-learning successful", which means learning is successful. To delete the remote control 1 wireless code, then enter: 10+01+9+# and then you can hear the prompt of "operation successful".
Settings of LORA zones	11	00		Eliminate all LORA zones	Input Format：11+00+9+#，eliminate all LORA zones Input Format：11+N+X+# start learning itself. N indicates programming address 01~40，which means zones 1-40 matching code study. X indicates： X=1, start learning and wait for LORA to self-report and update automatically. X=9, all previous study codes have been eliminated. Exit self-learning mode automatically in 30 seconds within no button pressed. For example：Study LORA
		01		LORA zone 1 wireless self-learning	
		02		LORA zone 2 wireless self-learning	
		...	...	...	
		40		LORA zone 40 wireless self-learning	

					zone 1 wireless code. The operations are as below: Input: 11+01+1+# when "wireless self-learning mode " is heard, LORA detector will be triggered, and "wireless self-learning succeeds" will be heard for each trigger, indicating successful learning. To delete the LORA zone 1 wireless code, enter: 11+01+9+#.
Time settings	12	01	010（3 digits）	System alarm time	Input Format： 12+01+XXX+# XXX means alarm time is 000-999s，default factory value is 10s.
		02	010（3 digits）	Keypad arming delay	Input Format： 12+02+XXX+# XXX means keypad arming time is 000-999s，default factory value is 10s.
		03	030（3 digits）	Zone 1 enters alarm delay	Input Format： 12+03+XXX+# XXX means zones 1 entry delay time is 000-999s，default factory value is 30s.
		…	…	…	…
		42	030（3 digits）	Zone 40 enters alarm delay	Input Format： 12+42+XXX+# XXX means zones 40 entry delay time is 000-999s，default factory value is 30s.
		43	000（3 digits）	Power-on time restricts alarm	Input Format： 12+43+XXX+# XXX means that the system power-on time restricts alarm time is 000-999 seconds , default factory

					value is 0s.
		44	000（3 digits）	Siren prompt after arming is completed	Input Format：12+44+XXX+# XXX means time of siren alarm after arm completed is 000-999s，default factory value is 0s.
Arm quickly/Force arming/system low voltage/Reminder of delay zones/keypad locked/AC test/battery test	13	01	1(1 digit)	Quick arming operation allows	Input Format：13+01+X+# X indicates： 0 means forbid, while 1 means allow. Default factory value is 1. Function instruction： start arming when the function turn on after long-press “arm AWAY” key After the function is enabled, you do not need to enter a password to arm, but you must input the password to disarm. If the function is off, you also need to enter the password.
		02	1(1 digit)	Force arming turn on/off	Input Format：13+02+X+# X indicates： 0 means forbid, while 1 means allow. Default factory value is 1. Function instruction： The function is turned on， the fault zone can be armed directly. If the function is off, it is not allowed to arm in faulty zone.
		03	0（1 digit）	System undervoltage buzzer prompt	Input Format：13+03+X+# X indicates： 0 means forbid, 1 means allow. Default factory value is 0. Function instruction: If this function is enabled, the master keypad buzzer will sound every 10 seconds

					when the system is under voltage until the voltage is restored. If the function is off, it won’ t prompt.
		04	0 (1 digit)	Reminder when delay zones‘ arming be triggered	Input Format：13+04+X+# X indicates： 0 means forbid, while 1 means allow. Default factory value is 0. Function instruction：If this function is turned on, it will prompt when the defense zone of delay type is triggered until the defense zone is restored. If this function is turned off, it will not prompt.
		05	0 (1 digit)	Keypad locked	Input Format：12+05+X+# X indicates： 0 means forbid, 1 means allow. Default factory value is 0. Function instruction：If this function is enabled, the keypad will be locked automatically when the password is incorrectly entered for more than 3 times. To unlock it, the control panel needs to be powered off or wait for 15 minutes to unlock automatically. If this function is turned off, the keypad will not be locked.
		06	0 (1 digit)	Ac power off/recovery test	Input Format：13+06+X+# X indicates： 0 means forbid, 1 means allow. Default factory value is 0. Function instruction：If this function is on, it will be reported to the center when

					the system is power off or restored. If this function is off, do not report.
		07	0 (1 digit)	Battery voltage test	0 means forbid, 1 means allow
PGM settings	14	01	0 (1 digit)	PGM1 attribute	Input Format：14+N+X+# N indicates programming address 01, 02, which means control panel comes with attribute PGM1 and PGM 2. X indicates： 0： Remote control (not following the output of control panel status, remote control only) 1：Arming linkage, disarming disconnects2：Alarm linkage, disarming disconnects. 3：Alarm linkage（following the alarm time of control panel)，disarming disconnects. 4： Arming linkage (pulse output), disarming disconnects. 5：Linking alarm (pulse output), disarming disconnects. 6：Alarm linkage (pulse output)（following the alarm time of control panel), disarming disconnects. Default factory PMG1 is 0, PMG2 is 1.
		02	1 (1 digit)	PGM2 attribute	
Extend output corresponding to zone	16	01	0101 (4 digits)	Linkage zone number of extend output 1	Input Format：16+N+XXYY+# N indicates programming address: 01~40, which is the linkage zone setting of 1-40
		02	0202 (4 digits)	Linkage zone	

Settings				number of extend output 2	extend output. XX indicates the low end of linkage zone (1-40). YY indicates the high end of linkage zone (1-40). Note：The high end can't be lower than the low end. For example：The first linkage output is required for the 01-05 alarm. As long as any defense area from 01 to 05 changes or alarms, the light will be on. The operations are as below: Input：16+01+0105+# The system defaults to one to one correspondence between the zone and the extend output, that is, zone 1 alarm, linkage 1 output. So do the zone 2~40..
		...	...	...	
		40	4040 (4 digits)	Linkage zone number of l extend output 40	
Extend output attribute settings	17	01	2(1 digit)	Extend output 1 linkage attribute	Input Format：17+N+X+# N indicates programming extend output 01~40，which means the attribute of linkage point.. X indicates： 0 means forbid 1：Arming linkage, disarming disconnects. 2：Alarm linkage, disarming disconnects. 3：Alarm linkage, （following alarm time of control panel） Default factory value is 2.
		02	2(1 digit)	Extend output 2 linkage attribute	
		...	...	...	
		40	2(1 digit)	Extend output 40 linkage attribute	
User calls	18	01	Maximum 16 digits.	User 1 alarm phone number	Input format: 18+N+Phone Number (up to 16 digits)+# N=:01~08, means programming of 1- 8 User
		02	Maximum 16 digits.	User2 alarm phone number	

		...	...	...	numbers. Phone Number: valid phone number less than 16 digits Example: dial User 1 Phone Number, programming as below: Input: 18+01+*+ user phone number+# Remark: "*" means wait 1second, add one more "*", means wait one more second for the call waiting interval. Press" #" then finished the programming and saved. Delete Phone Number method: 18+N+#
		08	Maximum 16 digits.	User 8 alarm phone number	
Zone corresponding phone number	19	01	0 (1 digit)	Dial user's phone number after zone 1 alarms	Input format: 19+N+X+# N: means programming address: 01~40. Zone 01~40 phone number setting. X means: 0 dial all users Phone Numbers (user Phone Number:NO.01~NO.8) 1= USER NO.1 Phone Number 2= USER NO.2 Phone Number 3= USER NO.3 Phone Number 4= USER NO.4 Phone Number 5= USER NO.5 Phone Number 6= USER NO.6 Phone Number 7= USER NO.7 Phone Number 8= USER NO.8 Phone Number Default setting: 0
		02	0 (1 digit)	Dial user's phone number after zone 2 alarms	
		...	...	...	
		40	0 (1 digit)	Dial user's phone number after zone 40 alarms	

					For example: Zone1 alarms, the control panel will dial User 8 Phone Number is specified: Input: 19+01+8+#
Remote arm/disarm via phone call	27	02	1(1 digit)	Remote Control by phone	Input Format: 27+02+X+# X mean 0=Forbid 1=Allow Default is X=1
User SMS Phone Number Setting	30	01	(11 digits)	SMS Number 1	Input format: 30+N+ SMS Phone Number(11digits)+# N: Means SMS Serial Phone Number 01~08 SMS Phone Number: 11digits valid Phone Number Delete SMS Phone Number format: 30+N+# Example: set Phone Number 13800138000 as the SMS Phone Number 1 Input: 30+01+13800138000+#
		02	(11 digits)	SMS Number 2	
		...	...	...	
		08	(11 digits)	SMS Phone Number 8	
SMS number report attribute	31	01	1 (1 digit)	SMS Phone Number 1 report attribute	Input format: 31+N+X+# N: 01-08, that is when alarms phone number 01-08 send SMS to report attribute X: 1=SMS For zone alarming 2=SMS For alarming +arm/disarm 3=SMS for alarm status 4=SMS For alarm status + arm/disarm. Default Setting:1
		02	1 (1digit)	SMS Phone Number 2 report attribute	
		...	...	...	
		08	1 (1digit)	SMS Phone Number 8 report attribute	
SMS arm/disarm setting	32	01	3 (1digit)	Arm/disarm setting for SMS Phone Number 1	Input format: 32+N+X+# N means 01~08,SMS phone number 01-08 remote arm/disarm operation attribute X: 0=forbid
		02	3 (1digit)	Arm/disarm	

				setting for SMS Phone Number 2	1=arm allowed 2= disarm allowed 3= arm& disarm allowed Default Setting: 3
		...	...	...	
		08	3 (1digit)	Arm/disarm setting for SMS Phone Number 8	
English/ Chinese Switch	33	01	1 (1digit)	English/Chinese Switch	Input format: 32+01+X+# X:1=Chinese 2=English Default Setting: 1
System Date Setting	39	01	09.28.2018 (8 digits)	Date Setting	Input format: 39+01+date+# Date: 8digits no need interval with" ." Example:-06-17-2019, then input: 39+01+06172019+#
System Time Setting	40	01	00: 00: 00 (6 digits)	Time Setting	Input format: 40+01+time+# Time: 6 digits, no need interval with" ." Example: time: 23(Hour):30(Min): 40(seconds) then input: 40+01+233040+#
Equipment ID Setting	41	01	0000000000 (10 digits)	Equipment ID Setting	Input format: 40+01+Equipment ID+# Equipment ID: 10 digits, has set default, not recommended to change
Delete Records/ reset factory setting	44	01	1 (1 digit)	Delete Records	Input format: 44+01+1+# delete records.
		02	1 (1 digit)	Default factory setting	Input format: 44+02+1+# to set default factory, wait for 3seconds, the system will continuously beep once, if setting successfully,.
Printer setting	45	01	1 (1 digit)	Operation print or not	Input format:45+01+X+# X mean: 0=forbid :

					1=allowed
		02	0 (1 digit)	to print the trouble shooting or not	Input format:45+02+X+# X mean: 0=forbid : 1=allowed
		03	0 (1 digit)	Yes or NO: to print the zone recovery status or not	Input format:45+03+X+# X mean: 0=forbid : 1=allowed
print the online testing time	46	01	0024(4 digits)	Yes or NO to print the online testing time or not	Input format:46+01+print test time+# Print test time: valid value: 0000-9999, the unit is hour. 0000 mean not allowed printing.

Note1: Default factory setting steps

1. The control panel is powered off, short circuit the jumper J11 on the PCB board, then power on.

2. Enter programming to input: 44+02+1#, after 3seconds, the buzzer will sound once.

Note.2: Reset the Installer password.

1. Control panel power off, short circuit the J11 on PCB board, and then power on.

4. Programming example

E.g. 1:

To modify installer password as: 654321, enter programming mode and input: 01+01+654321+# the buzzer will beeps once after the modification..

E.g. 2:

To modify the arm/disarm permission to only arm for group 1 User Password.
Enter programming mode and input: 02+01+1+# buzzer will beeps once after modification.

E.g. 3:

To modify zone 1arming /disarming time to: arm at 8:00am, disarm at 17:45. Enter programming mode and input: 03+01+08001745 the buzzer will beeps once after setting.

E.g. 4:

To modify the Zone1 attribute to 24 hours and be a silent zone, enter the programming mode and input: 03+07+01+300+# the buzzer will beeps once after modification.

E.g. 5:

To modify control panel own wired zone attribute of terminal 2 to NO (Normally open). Enter the programming and input:05+02+2+#, the buzzer will beeps once after modification.

E.g. 6:

To modify the system alarm time to 30seconds, enter the programming and input: 12+01+030+#, the buzzer will beeps once after modification.

E.g. 7:

To modify the smart Zone1 to be triggered 3 times every 10 seconds in 10 minutes and alarm, enter the programming and input: 08+01+10103+#,
The buzzer will beeps once after modification.

E.g. 8:

To learn wireless zone 1, enter the programming and input: 09+01+1+# trigger alarm for the corresponding wireless Detector, and then match code setting successfully, it will be exit automatically.

E.g. 9:

To delete all wireless zones. Enter programming and input: 09+00+9+#, the buzzer will beeps once after modification.

E.g. 10:

To delete wireless zone1. Into programming on keypad, input: 09+01+9+#
the buzzer will beeps once after modification.

E.g. 11:

To modify User 1 alarm phone number as 13828013204, enter programming and input18+01+13828013204+# the buzzer will beeps once after modification.

E.g. 12:

To delete user 1 alarm phone number. Enter programming and input: 18+01+# the buzzer will beeps once after modification.

E.g. 13:

To change the system date as 02212019, enter programming and input: 39 + 01+02212019+# the buzzer will beeps once after modification.

E.g. 14:

To change system time as: 09:28:00. Enter programming input: 40+01+092800+# the buzzer will beeps once after modification.

Format: Hours (24hors: 2digits) + minutes (2digits) + seconds (2digits).

Part 4.Zone type and password permission description

1. Zone type and description

Shielded zone: This zone is invalid and will not alarm whenever the zone is triggered.
Instant zone: Alarm immediately when triggered if zone at arm status
Delay zone: If delay zone is triggered after arm successfully, it only alarm at setting the enter/exit delay time end. If we disarm during delay status, the alarm will be cancelled automatically.
24h zone: Regardless of arming or not, while the zones are active, it will alarm as soon as it is triggered
Fire zone: Regardless of arming or not, while the zones are active, it will alarm as soon as it is triggered.
Temperature sensing zone: Regardless of arming or not, while the zones are active, it will alarm as soon as it is triggered
Panic zone: Regardless of arming or not, while the zones are active, it will alarm as soon as it is triggered
Triggering arm /disarm zone: If system is armed at this moment, when the zone is triggered, it turns to disarm status; if system is disarmed, it turns to arm if zone is triggered.
Notes: Every zone can be set as voiced or silent zone; or set as home zone or non-home zone, if a zone is set as home zone, and it' s instant or delay zone, user stays home to arm the zone triggering is invalid.

2. System password permission description

System has 59passwords in total, 5 kinds of permission passwords, following is the explanation :

Password permission	Function explanation	Effective control range
Installer password	To program and arm/disarm	1 password, valid for both device and zones
Programming password	Only for program	1 password
User password	To arm/disarm the panel	16 passwords , arm/disarm

		permission optional
Zone password	To arm/disarm corresponding zone	40 passwords, only for related zone arm/disarm (One zone one password)
Duress password	Use this password when threaten	1password, alarm to receiver will have a silence alarm message when disarm

Part 5 Expansion module function application

1. Mobile/telephone remote arm/disarm

Use the mobile phone or landline to dial the phone number connected to the panel, if the panel turns on No. 27 function of remote arming or disarming after ringing many times, the panel will connect automatically. User can input password to remote control: 1. Arm, 2.Disarm , 3. Monitor , 4.PGM1 on/off, 5. Siren on, 6. Turn on record, 7 PGM2 on/off, 8. Remote stay arm, 9. Check panel status, 0. Exit and hang up

Function	Operation	Instruction
Remote arm	Press 1	Arm
Remote disarm	Press 2	Disarm
Remote monitor	Press 3	Listen to the sound of home
Remote PG1 control	Press 4	PGM1 on/off
Remotely turn on siren	Press 5	Siren on
Play recordings	Press 6	Play record once
Remote PGM2 control	Press 7	PGM2 on/off
Remote stay arming	Press 8	Remote stay arm
Panel status broadcasting	Press 9	Query the panel for arming /disarming status or other faults
Hang up	Press 0	Panel hangs up

2. Turn on message arm/disarm notification

In 31 programming item set SMS number 1 to report attribute, turn on attribute 2(Zone alarm + arm/disarm message notification), GSM panel will send the message

to corresponding mobile phone when arm/disarm/alarm. The message display as follow: arm information: xx arm; disarm information: XX disarms; alarm information: zone xx alarm

Appendix: If only alarm notification need to be sent to mobile phone 1, and other arming/ disarming will not be sent, please set: 31+01+1, then only alarm information will be sent to No. 1 phone number.

3. Mobile phone SMS arming /disarming panel

Only phone number set by item 34 cans SMS to arm/disarm panel, when arm/disarm successfully, GSM Panel will send panel status as a message to phone number set by item 33

Message format: arm; e.g. BF

Massage format: disarm e.g. CF

If turn on arm/disarm notification, when operated by message, will automatically reply "arm by message" , "disarm by message"

Note: SMS arm/disarm function need to be turned on.

4. LORA expansion module

2KM communication distance in the open air

Maximum access to 40 zones

Two-way reliable communication device undervoltage/ wireless strength monitoring

5. Bus 485 expansion

BUS device connects to keypad, 8-zones address extend module is 0.1.2.3,4; 16-output module address is 64.65.66, keypad address is 0.1.2.3.4.5.6,7

6. Serial port printer

(1) AL238 supports real-time printing, the information can be printed are: alarm, fault, operation, device status etc.

Default printing zone alarm and arm/disarm operation record, with time information.

(2) AL238 is connected with printer by RS232 Serial; current model is DYJ-WH

(3) If the printed test interval is not 0, the printer will print at the specified time interval on the hour, indicating that the system is operating normally.

Print format: The zone 2 alarm 13rd 11:50:21 – including panel name/zone name, information and time.

7. Serial port upgrade program (consult professional technician)

Part 6 AL-238P panel application example

E.g.: Assuming that to use a control panel with 8 zones expansion module , 16 output module, alarm and call, SMS, the debugging steps as below:

First step: set default factory

Power off the control panel, short-circuit J11, then power on, enter programming and input 44+02+1#, wait for 3s till voice prompt that operation successful, Buzzer beeps, set successfully.

Step2: set date and time

Enter programming to input 39+01+05102019# (To set date as 05-10-2019), it' ll prompt operation successful if connected a speaker.

Input 40+01+133020# (To set time as 11:30:20) it' ll prompt operation successful if connected a speaker.

Step3: Set panel On-board Detector attribute and zone attribute

The panels own zone terminal attribute is NC (normally closed) by default. Do not set this item if it is connected to a NC detector. If it is connected to the NO (normally open) detector, enter the programming input 05+01+2# (set the zone 1 terminal to NO)/05+02+2# (set the zone 2 terminal to NO) to the 8th zone, if connected a speaker will prompt the voice prompt programming.

All zone attributes of the panel are defaulted to be instantaneous and non-home zone. Do not set this if the required zone type is the same as the default. If you want to change a certain zone into a transient / voice / home zone, enter the programming loss 07 + 01 + 110 # (set zone 1 instantaneous / voice / home zone) 07 + 02 + 110 # (set zone 2 instant / Voice/home zone) If a speaker is connected, the voice prompt will be programmed successfully.

Step 4: 16-outputs module addresses coding and output setting

To set 16-outputs module address as 64

Default output. All the zones and outputs are one-to-one, Zone 1 is corresponding to light 1,, zone2 corresponds to light 2, and so on

Output Attribute Setting enters the programming input 17+01+2# (disconnect the

output zone 1 alarm disarming disconnection)/17+02+2# (disconnect the output zone 2 alarm disarming disconnection) is set to the output 8, If the speaker is connected, the voice prompt will be programmed successfully.

Step 5: Set the dialing user's phone number and user's SMS number

Enter programming 18+01+13828013204# (user phone number 13828013204), then enter 30+01+13828013204# (user SMS number 13828013204).

Attachment 3: Address code list

Address	DIP switch is closed (ON): Switch status: 1	2	3	4	5	6	7	8
0								●
1							●	
2							●	●
3						●		
4						●		●
5						●	●	
6						●	●	●
7					●			
8					●			●
9					●		●	
10					●		●	●
11					●	●		
12					●	●		●
13					●	●	●	
14					●	●	●	●
15					●	●	●	●
16				●				
17				●				●
18				●			●	
19				●			●	●
20				●	●			
21				●	●			●
22				●	●		●	
23				●	●		●	●
24				●	●			
25				●	●			●
26				●	●		●	
27				●	●		●	●
28				●	●	●		
29				●	●	●		●
30				●	●	●	●	
31				●	●	●	●	●

Address	DIP switch is closed (ON): Switch status: 1	2	3	4	5	6	7	8
32			●					●
33			●					●
34			●				●	
35			●				●	●
36			●			●		
37			●			●		●
38			●			●	●	
39			●			●	●	●
40			●		●			
41			●		●			●
42			●		●		●	
43			●		●		●	●
44			●		●	●		
45			●		●	●		●
46			●		●	●	●	
47			●		●	●	●	●
48			●	●				
49			●	●				●
50			●	●			●	
51			●	●			●	●
52			●	●		●		
53			●	●		●		●
54			●	●		●	●	
55			●	●		●	●	●
56			●	●	●			
57			●	●	●			●
58			●	●	●		●	
59			●	●	●		●	●
60			●	●	●	●		
61			●	●	●	●		●
62			●	●	●	●	●	
63			●	●	●	●	●	●

Address	DIP switch is closed (ON): Switch status: 1	2	3	4	5	6	7	8
64		●						●
65		●						●
66		●					●	
67		●					●	●
68		●				●		
69		●				●		●
70		●				●	●	
71		●				●	●	●
72		●					●	
73		●					●	●
74		●				●	●	
75		●				●	●	●
76		●				●	●	
77		●				●	●	●
78		●			●	●	●	
79		●			●	●	●	●
80		●		●				
81		●		●				●
82		●		●			●	
83		●		●			●	●
84		●		●		●		
85		●		●		●		●
86		●		●		●	●	
87		●		●		●	●	●
88		●		●	●			
89		●		●	●			●
90		●		●	●		●	
91		●		●	●		●	●
92		●		●	●	●		
93		●		●	●	●		●
94		●		●	●	●	●	
95		●		●	●	●	●	●

Address	DIP switch is closed (ON): Switch status: 1	2	3	4	5	6	7	8
96		●	●					●
97		●	●					●
98		●	●				●	
99		●	●				●	●
100		●	●			●		
101		●	●			●		●
102		●	●			●	●	
103		●	●			●	●	●
104		●	●		●			
105		●	●		●			●
106		●	●		●		●	
107		●	●		●		●	●
108		●	●		●	●		
109		●	●		●	●		●
110		●	●		●	●	●	
111		●	●		●	●	●	●
112		●	●	●				
113		●	●	●				●
114		●	●	●			●	
115		●	●	●			●	●
116		●	●	●		●		
117		●	●	●		●		●
118		●	●	●		●	●	
119		●	●	●		●	●	●
120		●	●	●	●			
121		●	●	●	●			●
122		●	●	●	●		●	
123		●	●	●	●		●	●
124		●	●	●	●	●		
125		●	●	●	●	●		●
126		●	●	●	●	●	●	
127		●	●	●	●	●	●	●

Explanation

1、 In an application, ID of module/panel is address code+1, (address code starts from 0) E.g, When module ID is 1, the address code is 0, when module ID is 10,the address code is 9;

2、 DIP switch setting , " ON" means "1" , refer to "●" , " OFF" means "0"