Cellular SMS Controller

S130/S150

User Manual

Version：V3.0.1

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Website：https://www.bliiot.com

Preface

Thanks for choosing BLIIoT Cellular SMS Controller. These operating instructions contain all the information you need for operation of S130/S150.

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Disclaimer

This document is designed for assisting user to better understand the device. As the described device is under continuous improvement, this manual may be updated or revised from time to time without prior notice. Please follow the instructions in the manual. Any damages caused by wrong operation will be beyond warranty.

Revision History

Update Date	Version	Description	Owner
March 6, 2009	V1.0	First Edition	
May 17, 2017	V2.0		
October 20, 2017	V3.0		
March 25, 2020	V3.0.1		

Content

1 Product Introduction

1.1 Overview

S150 is a cost-effective Cellular SMS Controller. The SMS controller features digital inputs, relay outputs, it can be used in places which require turning ON/OFF your system, machines, and equipment remotely with a text message from your mobile phone and protect your assets.

1.2 Typical Applications

1. Security Alarm System applications;

2. Supervision and monitoring alarm systems;

3. Automatic monitoring system;

4. Vending Machines security protection;

5. Pumping Stations, Tanks, Oil or Water levels;

6. Buildings and Real Estate;

7. Weather Stations;

8. River Monitoring and Flood Control;

9. Oil and gas pipelines;

10. Corrosion protection

11. Temperatures, water leakage applications;

12. Wellheads, boat, vehicle;

13. Energy saving, street lights control system;

14. Valve controls;

15. Transformer stations;

16. Unmanned machine rooms;

17. Control room application;

18. Automation System, M2M;

19. GSM Access Control System, GSM Gate Opener, etc.

2 Safety Directions

Safe Startup

Do not use the unit when using GSM/3G/4G equipment is prohibited or might bring disturbance or danger.

Interference

All wireless equipment might interfere network signals of the unit and influence its performance.

3 Packing List

S130/S150 Device x1, Antennax1, Power adaptorx1, Wiring terminal

4 Features

➢ Stable and reliable, easy to use, can be set by computer, control by SMS commands (AA, BB, CC, DD, EE) or software

➢ 2/8 digital input (Dry contact, NO, NC, or EOL), used to connect various detectors, such as water level detectors, door sensors, infrared detectors, temperature detectors, humidity detectors, water immersion detectors, glass breakage detectors, shock detectors motion detectors, etc.

➢ 1 channel alarm linkage relay output, which can be used to set the relay closing time when a certain input or multiple inputs are triggered

➢ 1 channel SMS control relay output, users can use SMS password + CC to close (turn on the device) relay, or use the SMS password + DD to open (turn off the device) the relay

➢ SMS arming, the user can use SMS AA to arm, in this state, when the input is triggered, the alarm will occurs, and the alarm will be sent to 3 phone number and dial 5 preset phone numbers, and activate the siren at the same time, if there is a linkage relay action set, it will be automatically open or close the relay, the content of the alarm message can be modified by the user

> ➢ SMS disarming, the user can use SMS BB to disarm, after disarm, the input trigger will not alarm, such as the owner enters the anti-theft place. When the detector is in the debugging stage, it can be set to disarm state

> ➢ SMS query status, the user can send SMS EE to the device to query the current status of the device;

> ➢ In-built rechargeable battery, power lost/recover alarm, low maintenance, 24×7 operation;

> ➢ Power failure alarm function, when the AC power fails or the AC power is restored, it will automatically send a text message to the user's mobile phone for alarm

> ➢ Regular inspection, you can set the 0-240 hour device automatic reporting function, to avoiding alarm failure caused by SIM CARD does not have enough balance

> ➢ Password protection, only authorized users can control the device;

5 Specifications

Item	Specifications	
DC Power Supply	Standard Adapter: DC 12V/1.5A	
Power Consumption	Regular: 50mA; Max.:500mA	
4G	L-E	GSM/EDGE:900,1800MHz WCDMA:B1,B5,B8 FDD-LTE:B1,B3,B5,B7,B8,B20 TDD-LTE:B38,B40,B41
	L-AU	GSM/EDGE:850,900,1800MHz WCDMA:B1,B2,B5,B8 FDD-LTE:B1,B3,B4,B5,B7,B8,B28 TDD-LTE:B40
	L-A	WCDMA:B2,B4,B5 FDD-LTE:B2,B4,B12
	L-J	WCDMA：B1,B3,B8,B18,B19,B26 FDD：B2,B4,B12 TDD: B41
SIM Interface	Supporting 3V SIM Card	
External Antenna	SMA Antenna interface, 50 Ohm	
Digital Inputs	2/8 channel, Dry contact, NC, NO, or EOL	

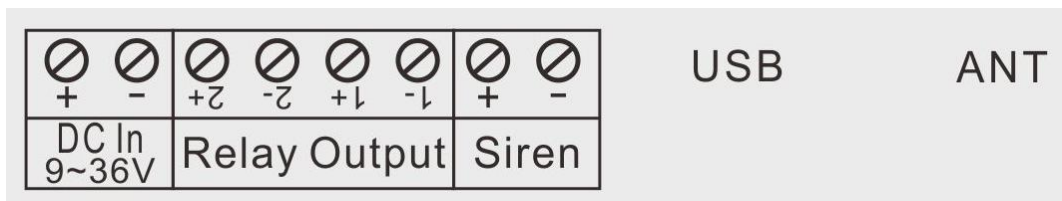| Relay Outputs	2 Relay Outputs, 7A@125VAC; 5A@250VAC; 20A@14VDC
Siren Output	1
Backup Battery	3.7V 900mAH
Exterior Dimension	70x88x30mm
Installation	35mm standard DIN rail(Optional); Wall mount (Default)

5.1 Model List

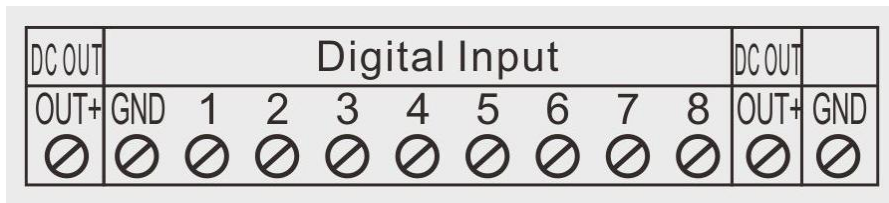| Model	Digital Input	Relay Output	Notice
S130	2	2	Two relay output, one is alarm
S150	8	2	linkage relay output, another one is SMS control relay output

6 Interface

LED Indicator	
Signal Sign	Flashes quickly during registration, and flashes slowly after registration is successful.
Alarm	Light on when alarm occurs
Status	Light on when arming; Light off when disarming.
Relay	Light on when relay close; Light off when relay open

DC in 9~36V	+	DC9~36V positive input; DC 12V/1.5A

	–	DC9~36V negative input; DC 12V/1.5A
Relay Output	1+	Alarm linkage relay output, 7A@125VAC 5A@250VAC 20A@14VDC, positive.
	1-	Alarm linkage relay output, 7A@125VAC 5A@250VAC 20A@14VDC, negative
	2+	SMS control relay output, 7A@125VAC 5A@250VAC 20A@14VDC, positive
	2-	SMS control relay output, 7A@125VAC 5A@250VAC 20A@14VDC, negative
Siren		External siren, alarm siren output 12VDC
USB		Used to connect to a computer for configuration.
ANT		2G/3G/4G Antenna

DC OUT		+12VDC@1.5A power output to external devices, such as detectors.
GND		Ground
Digital Input	1-8	Digital input 1~8, connect to one wire of the wired Detector.

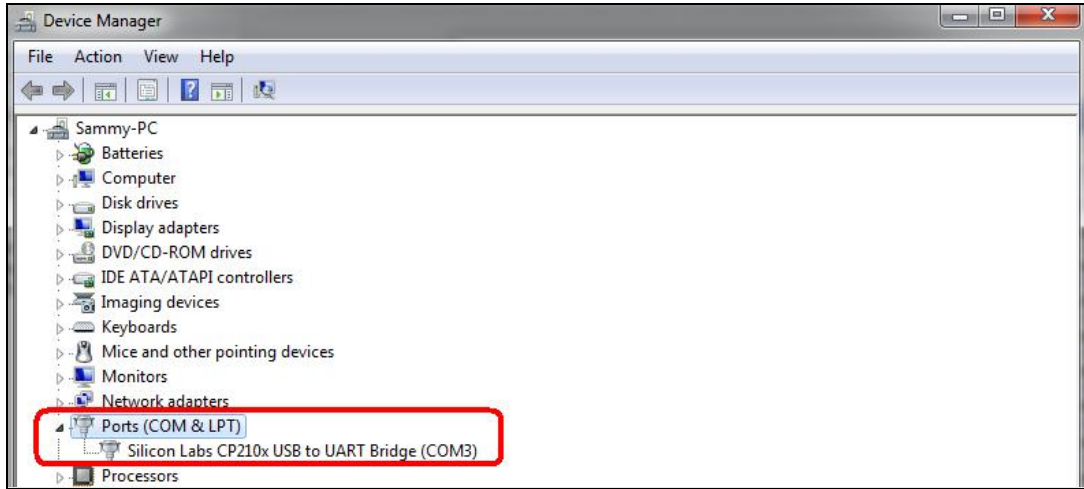# 7 Settings

1) Please connect the 4G antenna first, insert the SIM card to see if you can successfully register with the network;
2) The default password is 1234.
3) When the current alarm has not been processed, if alarms again, the device will not process it.
4) When the external power supply fails, the built-in relay of the device will be automatically open, and the 12V power output will also be invalid. .
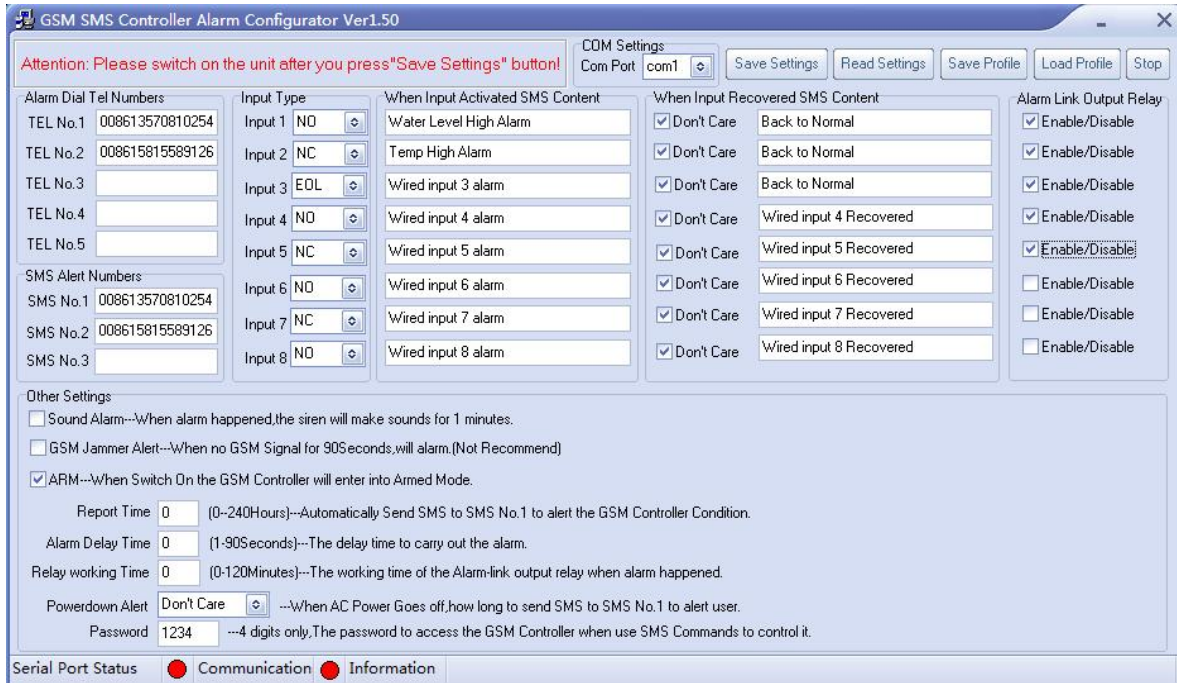
Configuration software

Step 1: Connect the Alarm Controller to the PC by USB Cable. And connect the external DC Power to DC Power Ports, Power on, and switch on the device.

Step 2: Install the USB Driver to the computer. When successful, it can be found out at the device manager of the XP or Windows 7 or Win8/Win10, please see the below photo. Also, the driver for different OS can be downloaded from Silicon Laboratories, Inc. http://www.silabs.com , the model is CP210x.

Step 3: Choose the correct COM port, then open configuration software

Item	Description
Com Setting	Select the COM port for SMS controller to communicate with computer
Save Settings	Save the parameters to SMS controller

Read Settings	Read the parameters in SMS controller through configuration software
Save Profile	Save the configuration parameters as a file for later viewing or importing it to other device
Load Profile	Load the configuration files saved on computer to quickly configure new device
Stop	Stop the communication between the computer and SMS Controller
Alarm Dial Tel. Numbers	When an alarm occurs, the device will dial these 5 phone numbers 3 times in a loop until the phone is answered and then terminated.
SMS Alert Numbers	When an alarm occurs, the device will send alarm text messages to these 3 numbers. Please add the country code, such as 0086 in China
Input Type	Disable: Means this input is invalid; NC: Normal Close, open will alarm; NO: Normal Open, close will alarm; EOL: End of Line, Means must be connected with a 2.2K resistor between the SMS controller and digital detector
When Input Activated SMS Alert Contents	These words or sentences will be sent to the SMS Alert Numbers once the related inputs triggered. Max. Characters: 34. If the inputs keep the triggered status, the SMS Controller will handle it as one alarm case, will stop to send SMS Alarm message till the inputs recovered and triggered again. This is very useful for the detectors continue keep the triggered status, like temperature detector, water level detectors, etc.
When Input Recovered SMS Contents	These words or sentences will be sent to the SMS Alert Numbers once the related inputs recovered. Max. Characters: 34. If you check the Don't Care means when this input recovered, will not send SMS to SMS Alert Numbers. If you want to get SMS alert when the Inputs recovered, then please don't check it, in this condition, the SMS Controller only send SMS to all SMS Alert Numbers, will not dial the Alarm Dial Tel. Numbers. This is very useful for owners to know when the inputs recovered, like temperature detector, water level detectors, etc.
Alarm Linkage Output Relay	Check it to setup when this input triggered, the alarm linkage output relay should close, the relay close time according to Relay Working Time. Otherwise, the alarm linkage output relay will not close.
Sound Alarm	Check it to setup the siren make sounds for 60 seconds when Alarm occurs.
GSM Jammer Alert	Check it to setup when the device cannot detected GSM signal for more than 90 seconds, the siren should sound 60seconds,

	and alarm linkage output relay close 4minutes.(Don't recommend)
Arm	Check it to setup the device to arm mode once power on. In this case, any detector triggered will alarm. The system will send out the preset SMS text to SMS alert numbers, and dial the Alarm Dial numbers one by one. In the meantime, the siren will sound 60seconds and the alarm linkage output relay will close, the relay close time according to Relay Working Time. Otherwise, the system will in disarmed mode after power on.
Report Time	Fill it to setup the Report time gap, Range: 0~240Hours. The device will automatically send its status to the 1st SMS alert numbers according to this setting. Only in Armed mode is valid.
Alarm Delay Time	To setup the delay time after any input triggered. The range is 0~90Seconds.
Relay Working Time	To setup the Alarm linkage Output Relay Close time when alarm happened. The range is 0~120Minutes.
Power Down Alert	To setup when AC power goes off, how long to send SMS to the 1st SMS Alert Number. Don't Care means when AC Power goes off will not send SMS to the 1st SMS Alert Number. Immediacy Means will send SMS to the 1st SMS Alert Number immediately. When AC goes on, the GSM SMS Controller will send SMS to 1st SMS Alert Number.
Password	To verify the SMS commands from the authorized users and modify new password.

Step 4: After setting all the parameters, click Save Settings, setup successful will show up, then restart the device, and all settings are completed.

8 SMS Command

SMS Command List	
SMS Command	**Actions**
AA	Arming. When any detector is triggered, the alarm will operate
BB	Disarming. When a detector is triggered, the alarm will not operate
CC	SMS control relay close
DD	SMS control relay open
EE	Query device status

A password must be added before the command, and the password can be modified

through the configuration software.

The command format is password + SMS command, such as: When the password is 1234, send 1234AA, and the device will be in armed state. SMS commands must be capitalized, such as AA, not aa.

Notice

1. The default Password is 1234.

2. The device doesn't support PIN Code Protected SIM card.

3. You can program the SMS controller with SMS commands.

4. Commands must be CAPITAL LETTERS. It is PWD not pwd, CAP not Cap etc. Don't add spaces or any other character.

5. The pwd in the commands is means the password, please use numbers to replace it; the capital letters PWD is the command letter, use PWD directly.

6. Some GSM operators use different SMS parameter; the device can't return SMS confirmation in some GSM operators, but it can performance the functions correctly. Also, you can try to add country code before the phone number.

7. If the password is correct but the command is incorrect, will return: SMS Format Error, Please check Caps Lock in Command! If password is incorrect, there won't be any response.

8. Once SMS controller received the SMS Command, will return SMS confirmation, if there is no SMS return, please check your command or resend again.

9. The users can Arm/Disarm/Query system status, close or open output relay by sending SMS Commands to the SMS controller. The system will carry out the commands immediately after the SMS controller receive this SMS commands.

8.1 Arming

xxxxAA
"xxxx" stands for the password (1-4 digits).
Return SMS
Armed Mode activated.

Example
1234AA
When the Password is 1234

8.2 Disarming

xxxxBB

"xxxx" stands for the password

(1-4 digits).

Return SMS

System deactivated.

Example

1111BB

When the Password is 1111

8.3 Relay Close

xxxxCC

"xxxx" stands for the password

(1-4 digits).

Return SMS

Output Relay Closed.

Example

1111CC

When the Password is 1111

8.4 Relay Open

xxxxDD

"xxxx" stands for the password

(1-4 digits).

Return SMS

Output Relay Opened.

Example

1111DD

When the Password is 1111

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8.5 Query Device Status

xxxxEE

"xxxx" stands for the password (1-4 digits).

Return SMS

Armed or At House or Disarmed

AC Power is Ok or AC Power is failed

GSM Value is 17 or other value

Output Relay is Closed or Output Relay is opened

The relay controlled by SMS here is Relay2 SMS control relay, not alarm linkage relay, and the status of the relays during query is also SMS control relay, not the status of alarm linkage relay.

8.6 Alarm Verify Time

Set Command: Password + DIN + n(1~8) + Q + yy(00~99)

Inquiry Command: Password +DINQ

Return SMS: DINn:yyS

n is 1~8, stands for DIN1~DIN8;

yy is 00~99(two digits), stands for alarm verify time(second), default 01, 99 means not alert.

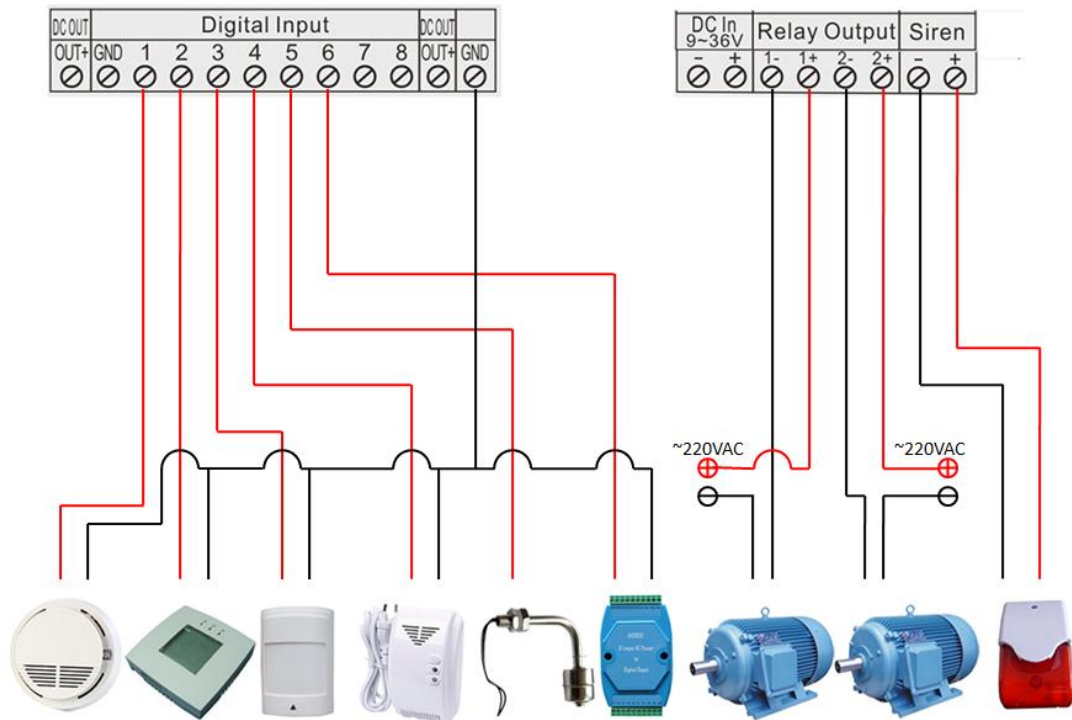For example: Set the DIN1 alarm verify time to 01 second, the command is: 1234DIN1Q01

The alarm verify time indicates how long the alarm lasts before alarming. For example, if the alarm verify time is 10 seconds, the alarm will occurs after 10 seconds. If the alarm lasts less than 10 seconds, it will not alarm.
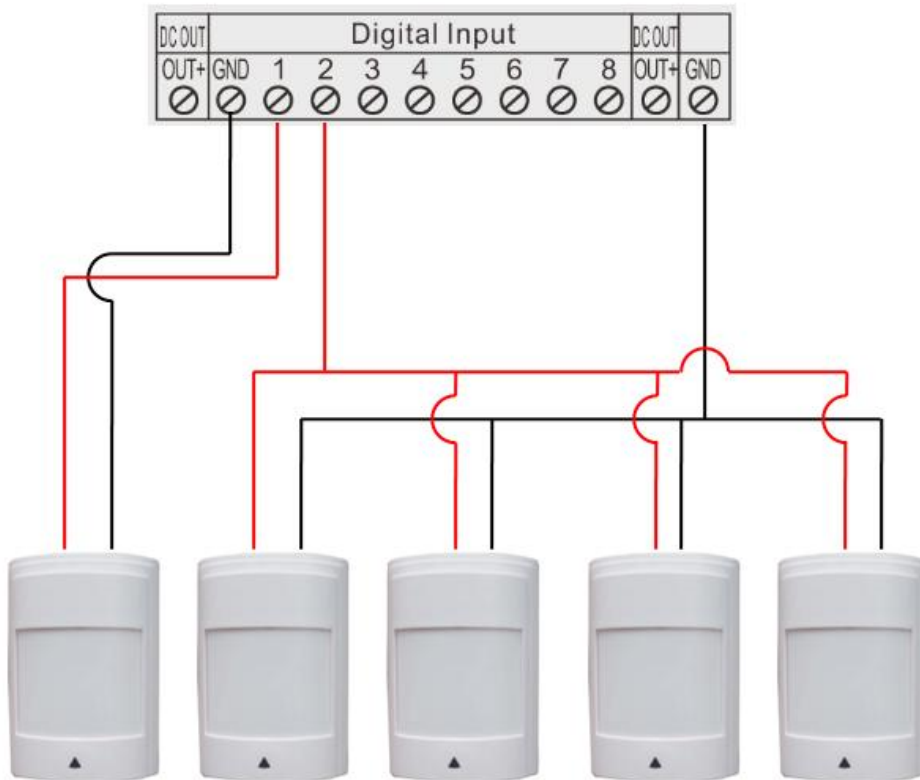
9 Installation

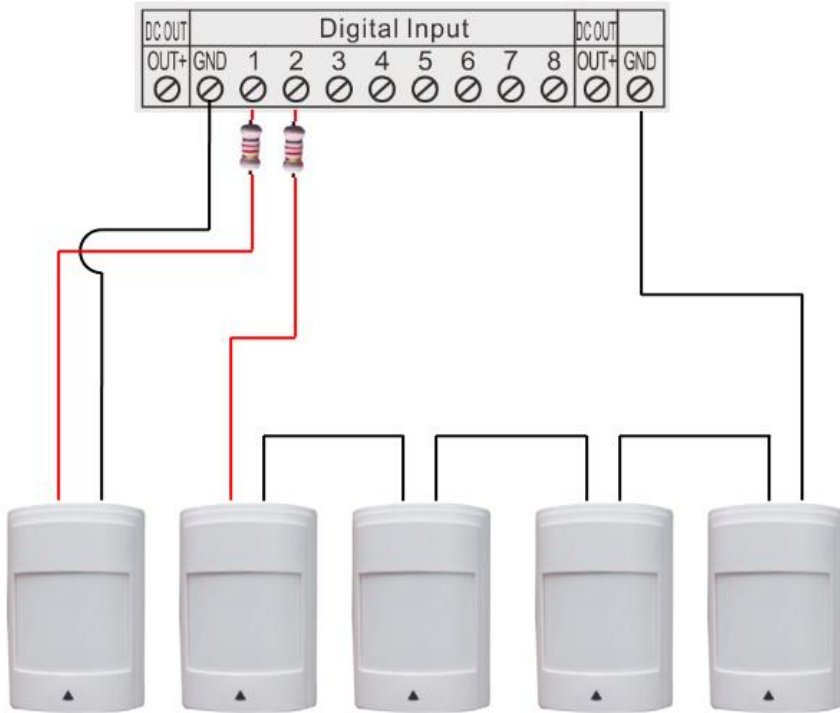## 9.1 Device Connection

1) Input type: NC

2) Input type: NO
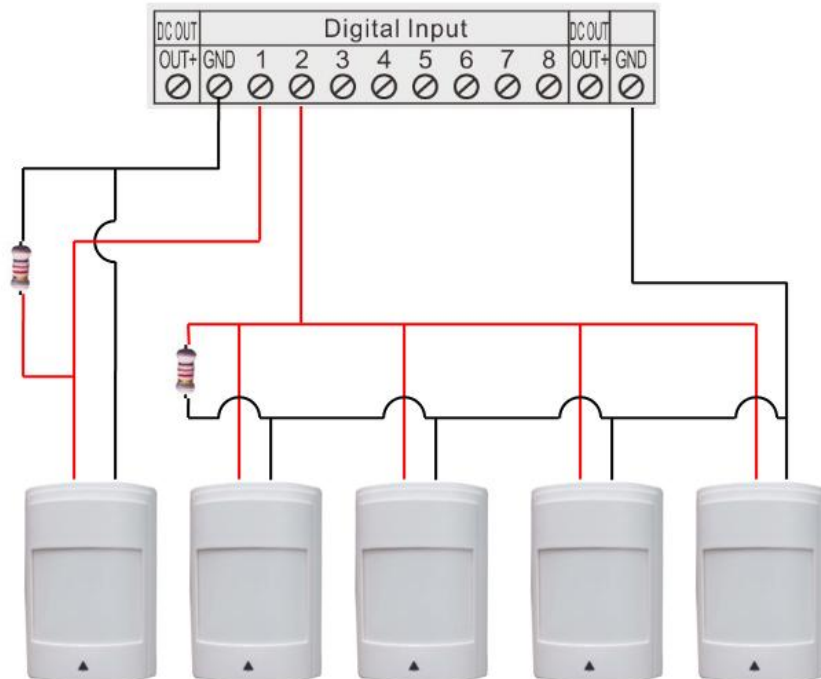
NO Type Connection

3) **When the digital input is NC and the end-of-line resistors mode is selected, a 2.2K resistor needs to be connected in series.**

NC EOL Type Connection

4) **When digital input is NO and connected by end-of-line resistors, a 2.2K resistor needs to be connected in parallel.**

NO EOL Type Connection

9.2 Typical Application

Application 1: Long Distance Automatically Water/Oil Tank Monitoring and Control Solution

This solution is suitable for water level detection in the water tank and the automatic control of the water pump, without the need for personnel to go to the site for inspection. Thereby reducing labor costs and improving work efficiency.

1)Use water level detector (WL-04) to detect the water level, it can detect the low level and high level, two wires for low level, connecting to input 1, two wires for high level, connecting to input 2.

2)Set the SIM Card Number in B side GSM SMS Controller as the first SMS Alarm number in A side GSM SMS Controller, and modify the SMS Alert content as 1234CC (1234 stands for password) to input 1, 1234DD to input 2. So when Low level detected, the A side GSM SMS Controller will send 1234CC command to B side GSM SMS Controller to switch ON the Pump, when high level detected, will send 1234DD to B side GSM SMS Controller to Switch OFF the Pump. Means the A side alarm SMS message as the B side GSM SMS Controller Command.

Tank, Water Level Monitoring Solution

When the A side S130 detect the water level is high, then send SMS to B side S130 to Switch off the Pump.

When A side S130 received the Low level signal from the water level sensor, then send SMS command to B side S130 to switch ON the Pump !
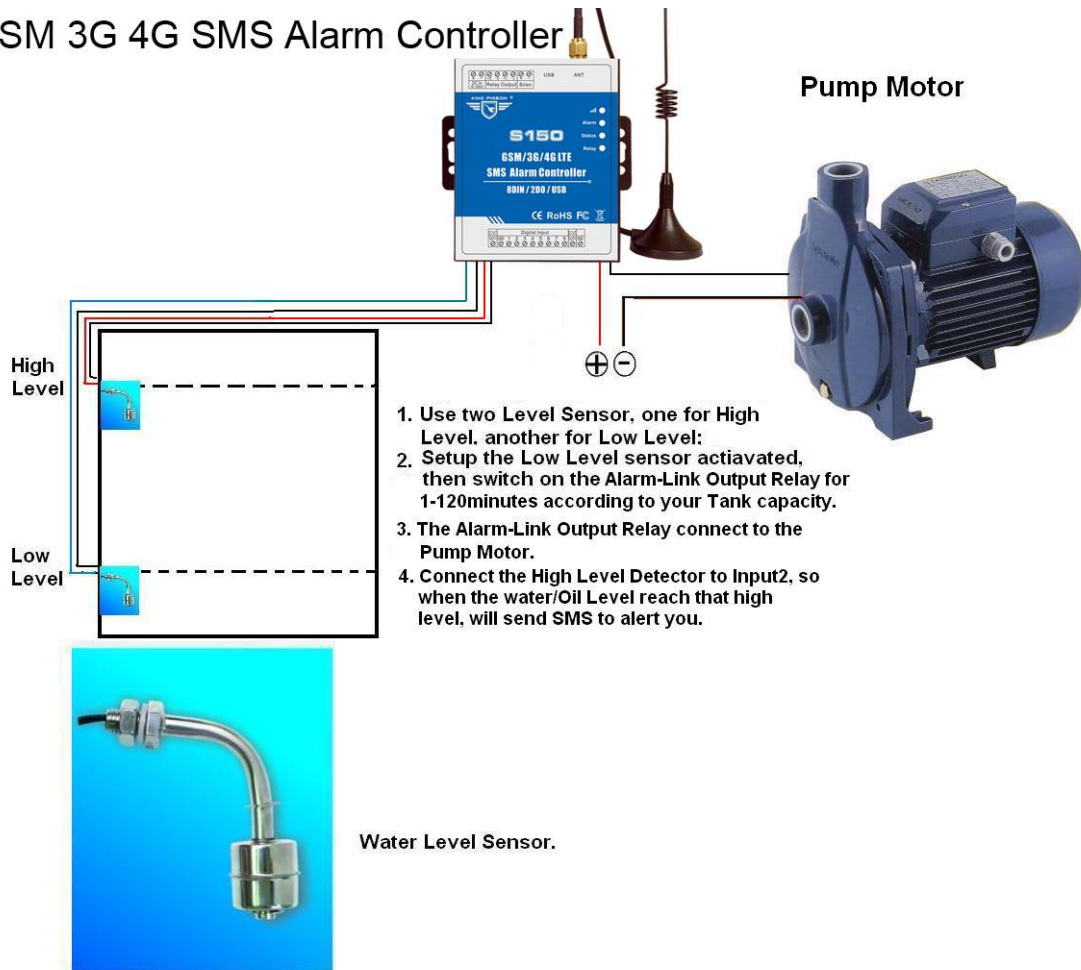
Method:
1. Use the Water Level Sensor(WL-03) to detect the water level, it can detect the low level and high level, 2 wires for low level, connecting to S130 Input 1, 2 wires for high level, connecting to S130 Input 2.

2.Set the SIMcard Number in B side S130 as the first SMS alarm number in A side S130, and modify the SMS Alert content as"CC" to input 1, "DD" to input 2. so when Low level detected, the A side S130 will send CC command to B side S130 to switch ON the Pump, when high level detected, will send DD to B side S130 to swicth OFF the Pump!

Application 2: Local Automatically Water/Oil Tank Monitoring and Control Solution

When the water tank nearby the water pump, it can automatically detect the water level in the water tank and automatically turn on and off the water pump. At the same time, it can also turn on and off the water pump remotely through SMS.

The WL-04 water level detector is used, which is divided into two water levels, high and low. When the water level is low, the linkage relay output is set to close for a certain period of time and then automatically open. When the water level is high, a text message will be sent to notify you. At the same time, the water pump can be remotely switched on and off through the SMS control relay in a series connection.
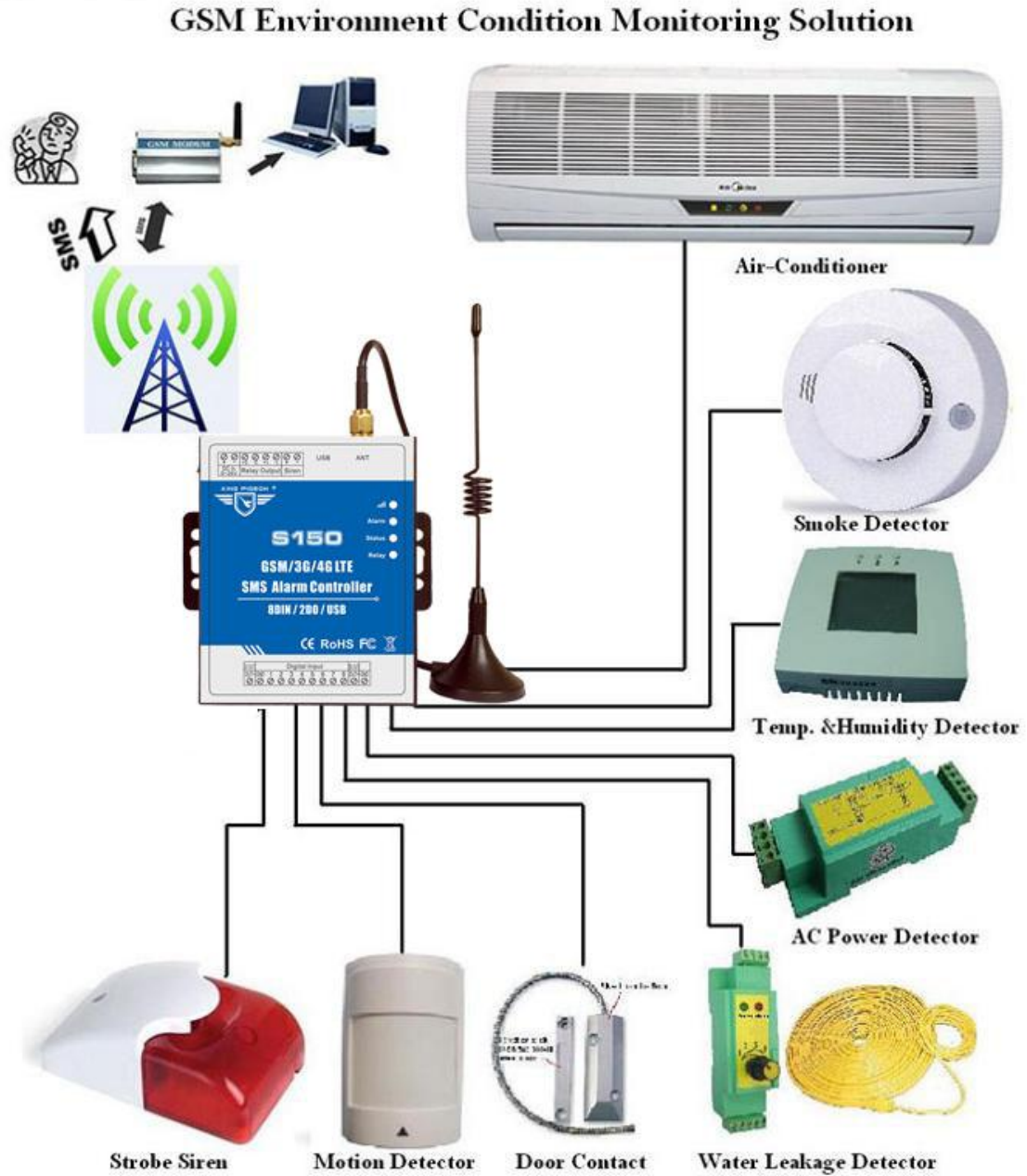

GSM 3G 4G SMS Alarm Controller

Pump Motor

High Level

Low Level

1. Use two Level Sensor, one for High Level, another for Low Level;
2. Setup the Low Level sensor actiavated, then switch on the Alarm-Link Output Relay for 1-120minutes according to your Tank capacity.
3. The Alarm-Link Output Relay connect to the Pump Motor.
4. Connect the High Level Detector to Input2, so when the water/Oil Level reach that high level, will send SMS to alert you.

Water Level Sensor.

Application 3: Environment Condition Monitoring Solution

This solution is suitable for environment condition monitoring, when the temperature or humidity exceed the pre set value, the air conditioner will switch on. Also, users can use the SMS Command to switch on or switch off the air conditioner when use the

independent output relay.

GSM Environment Condition Monitoring Solution

10 Warranty

1) This equipment will be repaired free of charge for any material or quality problems within one year from the date of purchase.

2) This one-year warranty does not cover any product failure caused by man-made damage, improper operation, etc.

11 Technical Support

Shenzhen Beilai Technology Co., Ltd.

Website: https://www.bliiot.com