



# TempAlert

Inquiry Onsite Temperature  
with a FREE Call or SMS!

High-Low temperature alarm  
with SMS text Message alert!

Interval Report Temperature  
to Your Mobile Phone by SMS!

## GSM SMS Temperature Alarm

## GSM Temperature Monitoring Alarm



**KING PIGEON**



**User Manual**

Ver 1.0

RTU5013

Date Issued: 2013-11-12

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## GSM Temperature Monitoring Alarm

### Table of Contents

1. <b>Brief Introduction</b> .....	3
2. <b>Safety Directions</b> .....	3
3. <b>Standard Packing List</b> .....	4
4. <b>Mainly Features</b> .....	4
5. <b>Physical Layout and Installation Diagram</b> .....	4
5.1 Control Unit physical layout.....	4
5.2 Interface instruction for installation.....	6
5.3 Recommend Detectors .....	6
6. <b>Initialize/Reset the GSM unit</b> .....	6
7. <b>Programming</b> .....	7
7.1 Setup New Password.....	7
7.2 Setup Authorized number.....	8
7.3 Setup Temperature High/Low threshold Alarm Value.....	9
7.4 Setup Automatically Report Time.....	10
7.5 External AC Power Status Monitoring.....	10
8. <b>Operation Instructions</b> .....	10
8.1 Inquiry the IMEI Code and firmware version .....	10
8.2 Inquiry the GSM Unit current status.....	10
9. <b>Technical specifications</b> .....	10
10. <b>Quality Warranty</b> .....	11
11. <b>Installation Schedule</b> .....	11

This handbook has been designed as a guide to the installation and operation of RTU5013 GSM SMS Temperature Monitoring Alarm.

Statements contained in the handbook are general guidelines only and in no way are designed to supersede the instructions contained with other products.

We recommend that the advice of a registered electrician be sought before any Installation work commences.

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# GSM SMS Temperature Alarm

## GSM Temperature Monitoring Alarm

### 1. Brief introduction

The GSM SMS Temperature Monitoring Alarm is special for remotely monitoring onsite temperature through wireless GSM Network. When the temperature exceed high threshold or low threshold value, will send SMS alert to upto 6 users immediately. Also, it can report onsite temperature interval or daily, moreover, the user can send SMS or dial in to inquiry the onsite temperature remotely.

The GSM SMS Temperature Monitoring Alarm can be used for temperature monitoring, Class Room, Public Room, Waiting Room, Hospital, Stations, Fresh Food Warehouse, Office, Meeting Room, Laboratory, Library and anywhere that need monitoring temperature or control temperature in expected range.

The GSM SMS Temperature Monitoring Alarm inbuilt a temperature sensor inside (measure range:  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ ), the temperature sensor also can be extend to outside if required. The user can setup high and low threshold value of the temperature, when occurrence, it will send SMS text message to alert the authorized users immediately.

Just dial from Authorized User number, the GSM SMS Temperature Monitoring Alarm will reject at the first "Ring", no communication cost, then return the current temperature, AC power status and other information. Also, the user can setup the interval time to report these information to authorized number automatically.

### 2. Safety Directions



#### Safe Startup

Do not use GSM unit when using GSM equipment is prohibited or might bring disturbance or danger.



#### Interference

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



#### Avoid Use at Gas Station

Do not use GSM Gate Opener at a gas station. Power off GSM unit when it near fuels or chemicals.



#### Power it off near Blasting Places

Please follow relevant restrictive regulations. Avoid using the device in blasting places.



# GSM SMS Temperature Alarm

## GSM Temperature Monitoring Alarm



### Reasonable Use

Please install the product at suitable places as described in the product documentation.  
Avoid signal shielded by covering the mainframe.



### Use Qualified Maintenance Service

Maintenance can be carried out only by qualified maintainer.

## 3. Standard Packing List

GSM SMS Temperature Monitoring Alarm X 1; GSM Antenna X 1(Inbuilt); DS18B20 Temperature X1(Inbuilt); Backup Battery X 1 (Inbuilt); User Manual X 1.

### Optional Accessories:

DS18B20 Temperature Sensors, 12V1A AC/DC Adaptor.

## 4. Mainly Features

- Can be operated from anywhere, no distance limitation;
- No call charges for inquiry. the GSM SMS Temperature Monitoring Alarm rejects the call from authorized number then return onsite temperature and AC Status on the first 'ring';
- Multiple applications. (temperature monitoring);
- Upto 6 authorized phone numbers, each number can be used to receive call or SMS or both of call and SMS while alarm occurrence;
- One Temperature Sensor inbuilt, external connection is available, measures temperatures from  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  ( $-67^{\circ}\text{F}$  to  $+257^{\circ}\text{F}$ ),  $0.5^{\circ}\text{C}$  accuracy from  $-10^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ , can setup high and low temperature alarm threshold value to alert the authorized users;
- External AC Power monitoring, AC On/OFF will send SMS to authorized phone numbers;
- Timer Report—Can setup every x hours automatically send its status/Value to the authorized numbers;
- Rechargeable Backup Battery inside can last 8hours;
- Secure - Using caller ID and password for identification, unknown callers are ignored;
- Programmable by SMS Commands with password protection;
- Based on GSM Network, applied to many applications.

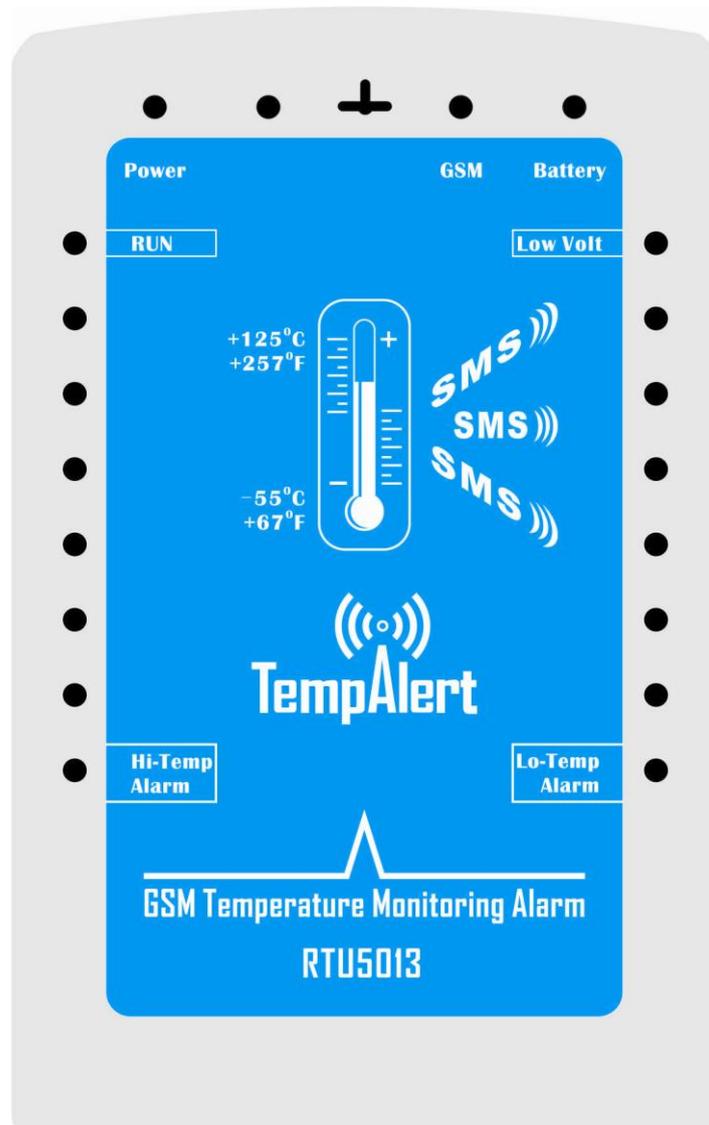
## 5. Physical Layout and Installation Diagram

### 5.1 Control Unit physical layout



# GSM SMS Temperature Alarm

## GSM Temperature Monitoring Alarm



### LED Indicator Instruction

<b>POWER</b>	External DC Power status LED indicator.
<b>GSM</b>	GSM Module Status indicator, registering GSM Network flicks quickly, registered successful flicks slow. No GSM Signal will be off.
<b>Battery</b>	Charging battery will on, otherwise will off.
<b>RUN</b>	GSM Unit Status, ON stands for switched on, off stands for switched off.
<b>Low Volt</b>	Low voltage indicator, will on when backup battery low voltage till recovery.
<b>Hi-Temperature</b>	High Temperature Alarm
<b>Lo-Temperature</b>	Low temperature alarm.

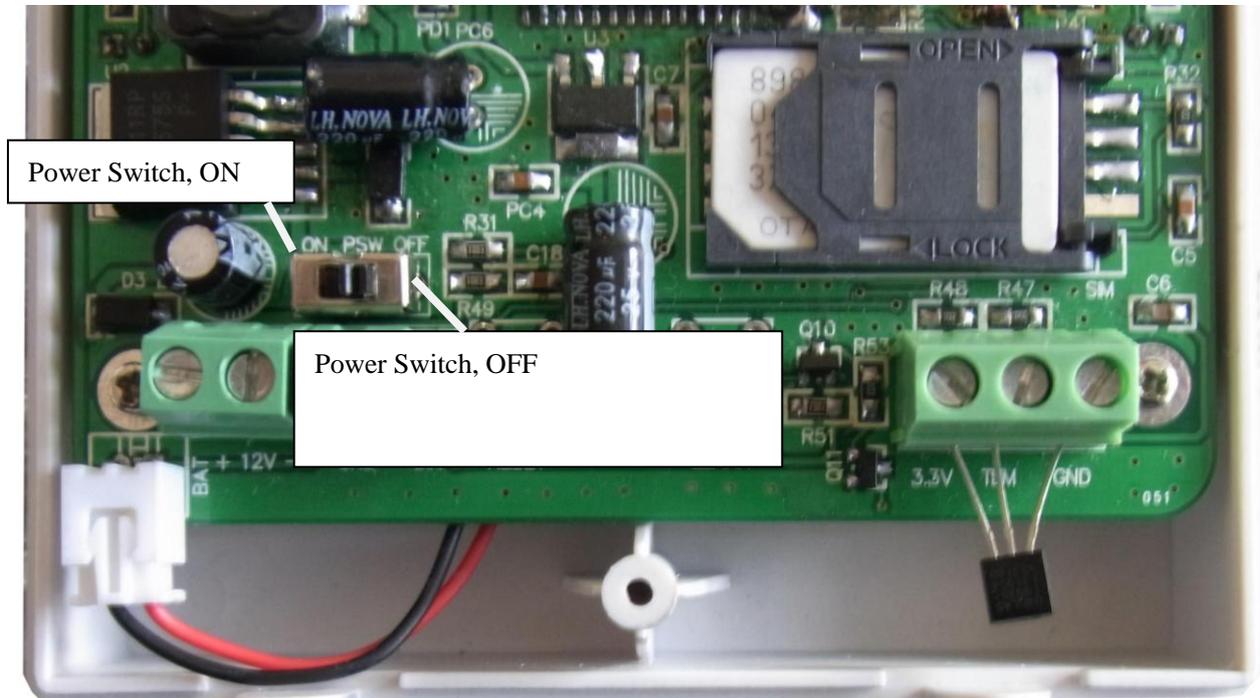


# GSM SMS Temperature Alarm

## GSM Temperature Monitoring Alarm

### 5.2 Interface Instructions for installation

At the backside of the panel, please use the tool to remove the screw, and you can see the below:



Connector Interface		
DC9~18V	+	DC9~18V positive input, 1A, for power on the GSM Unit.
	-	DC9~18V negative input, 1A, for power on the GSM Unit.
Temp. Input	3.3V	3.3V Direct Current Output Positive, for 3.3V Temperature Sensor.
	Temp.	Temperature Sensor input, DS18B20 sensor only.
	GND	Temperature Sensor input GND

### 5.3 Recommend Detectors

Recommend Detectors		
Name	Descriptions	Photo
DS18B20 Temperature Sensor	Replace the inbuilt temperature sensor, can be extend the temperature sensor outside the housing; Measurement range of $-55^{\circ}\text{C}$ to $+125^{\circ}\text{C}$ and is accurate to $\_0.5\_C$ over the range of $-10^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ . Wire length is 100cm.	

## 6. Initialize/Reset the GSM unit

The GSM Unit can be reset to factory default once mistake programmed. please follow below steps to initialize it. After initialized, the parameters will set as factory default.



# GSM SMS Temperature Alarm

## GSM Temperature Monitoring Alarm

- 1) Switch off the GSM Unit and insert the SIMCard firstly, connect the battery;
- 2) Press the RESET button;
- 3) Switch the Switch to ON side to powered on the GSM Unit, holding 5seconds, after heard 1Second Di sound alert then loose the RESET Button.
- 4) Restart the GSM unit then will enter to work mode.

## 7. Programming

### Notice:

1. The default Password is **1234**.
2. Before powered on the GSM Unit, please insert the SIMCard inside, after power on the unit, the buzzer will alert by 1 long Di sound to alert, if the MCU can not communicate to the GSM Module or not find out the SIMCard or Simcard installed failure or no gsm signal, the GSM Unit will restart automatically.
3. All the settings are through SMS commands, please edit the below SMS commands in your cell phone, then send to the GSM unit. The unit cannot support PIN Code Protected SIMCard.
4. You can program the GSM unit with SMS commands using your phone. It is safe to do so because in addition to the fact that other people may not know the number of the SIM inserted in it, we also use a Password that makes it impossible for anybody, who doesn't know it, to access the system by chance.
5. Remember that commands must be **CAPITAL LETTERS**. It is PWD not pwd, CAP not Cap etc. Don't add spaces or any other character.
6. The **pwd** in the commands is means the password, when you use it, please in stand of it by the digital number; the capital letters **PWD** is the command letter, use PWD directly.
7. In some GSM operators they use different SMS parameter; the units can't return the SMS confirmation in some gsm operators, but it can performance the functions correctly. Also, you can try to add the country code before the number, see the below settings:

#### For example:

E.g.: the country code is **0086**, or **+86**.

The user cell phone number is **13600000000** and has been assigned as a SMS Alert number, the simcard number in the panel is **13512345678**.

When you setup the number as the authorized number, please setup as 008613600000000 or +86136000000000. Not 13600000000.

8. If the password is correct but the the command is incorrect, the RTU5013 will return: **SMS Format Error, Please check Caps Lock in Command!** So please check the Command, or add the country code before the telephone number or check the input is in ENGLISH INPUT METHOD and CAPS LOCK. If password incorrect then will not any response SMS.
9. Once the GSM Unit received the SMS Command, will return SMS to confirmation, if no SMS return, please check your command or resend again.



# GSM SMS Temperature Alarm

## GSM Temperature Monitoring Alarm

10. The SMS commands that you will certainly use in the GSM units are the following:

### 7.1 Setup New Password

**pwd+P+newpassword**

**pwd** is the GSM Unit password, default is 1234.

**P** is the identification character of this command.

if successful, the unit will return: **Set Success.** The password is 4digits.

#### **Example**

The original password is 1234, you want change it to 6666, then you can send the command below: **1234P6666**

### 7.2 Setup Authorized number

The GSM Unit supports upto 6 authorized phone number, each number can be setup as different rights to receive alarm message.

**pwd+#+Serial Number+A+Function 1 Code+#+Telephone Number+#**

**Serial Number** = 1~6.

**A** is the identification character of this command.

**Function 1 Code** =1,2,3. It is for alarm receiving attribute setting.

=1 stands for when alarm occurrence, the GSM unit will dial as well as send SMS to this number.

=2 stands for when alarm occurrence, the GSM unit only send alarm SMS to this number, doesn't dial.

=3 stands for when alarm occurrence, the GSM unit only dial this number, doesn't sends SMS.

**Telephone Number**: authorized number, must include country code, max. 18 characters,

E.g.: if you want to setup 13512345678 as the third authorized number, and the password is 1234, country code is 0086, when alarm occurrence this number can receive both SMS and incoming from the GSM Unit,

Then you can send **1234#3A1#008613512345678#** to the GSM Unit. Will return:

Tel1: Empty  
Tel2: Empty  
Tel3: 008613512345678-1 stands for function 1 code =1.  
Tel4: Empty  
Tel5: Empty  
Tel6: Empty

### ※Inquiry the Authorized number

**pwd+A+#**

After received this command, the GSM Unit will return the SMS as abovementioned.

E.g.: If you want to know the authorized number list, and the password is 1234, then you can send **1234A#** to check it.

### ※Remove the Authorized Number



# GSM SMS Temperature Alarm

## GSM Temperature Monitoring Alarm

**pwd+Serialnumber+A+#**

Please overwrite it with another new number or removed it by this SMS Command.

**Tips:** If setup the authorized number as receive dial from the GSM unit, the GSM unit will dial them one by one once or till answered the call.

### 7.3 Setup Temperature High/Low threshold Alarm Value

The GSM Unit inbuilt a temperature sensor already, measures temperatures from  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  ( $-67^{\circ}\text{F}$  to  $+257^{\circ}\text{F}$ ),  $0.5^{\circ}\text{C}$  accuracy from  $-10^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ , but the temperature accuracy will be effected by the GSM Unit, if the user want to extend it to other place or want to get accurate temperature, the user can extend the DS18B20 Temperature Sensor. The GSM Unit reserved 3.3V power for this DS18B20 Temperature Sensor to save the wiring cost.

The user can setup temperature high and low threshold value, when the onsite temperature high or low than the threshold value, will send SMS or dial to the authorized numbers.

Please see below to setup the threshold value, the command is:

For setup the High threshold value:

**pwd+H\*\*\*+ENS\*\*\*+#**

For setup the Low threshold value:

**pwd+L\*\*\*+ENS\*\*\*+#**

After the GSM Unit received these commands, will return: H\*\*\*+ENS\*\*\*# or L\*\*\*+ENS\*\*\*#.

**H\*\*\*:** H is the identification character of this command. Stands for the high temperature value, \*\*\*=-99~999, =999 stands for disable this function(Default), when the temperature higher than this value, will send SMS and dial to the authorized numbers. The SMS Content is:

High Temp Alarm!  
Actual temp is xx Degree C;  
AC Power is ON/OFF.

**L\*\*\*:** L is the identification character of this command. Stands for the low temperature value, \*\*\*=-99~999, =99 stands for disable this function(Default), when the temperature lower than this value, will send SMS and dial to the authorized numbers, The SMS Content is:

Low Temp Alarm!  
Actual temp is xx Degree C;  
AC Power is ON/OFF.

**ENS\*\*\*:** ENS is the identification character of this command. Stands for the ensure time of temperature exceed the pre-set value, means when temperature exceed the value and last for how many seconds then consider is an alarm event. \*\*\*=000~999, default is 300 seconds, this parameter is in order to avoid false alarm.

**Tips:** The temperature value can accept minus symbol and decimal, like -20 degree then please input -20, for temperature value >0, then no need input +, e.g. 20 degree then please input 20, not +20. Also can setup as decimal, e.g.: 19.50



# GSM SMS Temperature Alarm

## GSM Temperature Monitoring Alarm

### 7.4 Setup Automatically Report Time

The user can setup interval time to report the GSM Unit current status to the first authorized number. The SMS command is:

**pwd+D\*\*+#**

**D\*\***:D is the identification character of this command. \*\*=0~99, unit is hour, stands for how many hours does the GSM Unit should report its current status to the first authorized number. Default is 0, stands for disable this function.

### 7.5 External AC Power Status Monitoring

The GSM Unit will automatically monitoring the external AC power, while AC power goes off, will send **AC Power Goes OFF** to the first authorized number immediately, and while the external AC power goes on, will send **AC Power Goes ON** to the first authorized number immediately. When the backup battery voltage lower than 3.6V, will send the **SMS Backup Battery low voltage** to the first authorized number immediately.

## 8. Operation Instructions

### 8.1 Inquiry the IMEI Code and firmware version

The user can inquiry the IMEI Code and the firmware version by SMS command, the SMS Command is:

**pwd+Q**

After the GSM Unit received, will return:

IMEI Code: xxxxxxxxxxxxxx  
Version:V\*\*

### 8.2 Inquiry the GSM Unit current status

The user can inquiry the GSM Unit current status by dial in the GSM unit through authorized numbers or send SMS command. The SMS Command is:

**pwd+EE**

Will return:

Actual temp is xx Degree C;  
AC Power is ON/OFF;  
GSM Signal is xxx.

**Tips:** The GSM Signal value from 15~30 stands for the gsm signal is normally.

## 9. Technical specifications

Rated Voltage: 9~18V 1A DC  
Standby Consumption: 30~35mA (Not charging battery)  
Working Consumption: 400mA



# GSM SMS Temperature Alarm

## GSM Temperature Monitoring Alarm

Working temperature:  $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$   
 Storage temperature:  $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$   
 Relative humidity: 10-90%, No condensation  
 GSM frequency: 900/1800MHz(Default) or 850/1900Mhz (Optional)  
 SIM Card: Supporting 3V SIM Card  
 GSM Antenna: 50  $\Omega$  SMA Antenna interface  
 Communication protocol: GSM PHASE 2/2+ (include data service)  
 Temperature Sensor Inputs: 1(inbuilt one DS18B20, can extend to external,  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  ( $-67^{\circ}\text{F}$  to  $+257^{\circ}\text{F}$ ),  $0.5^{\circ}\text{C}$  accuracy from  $-10^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ ,)  
 Backup Rechargeable Battery: 3.7V@900mAH lithium batteries, standby 8 hours  
 External Size: 150mmX92.6mmX30mm (WDXH)  
 Net Weight: 0.50Kg

### 10. Warranty

- 1) This system is warranted to be free of defects in material and workmanship for one year.
- 2) This warranty does not extend to any defect, malfunction or failure caused by abuse or misuse by the Operating Instructions. In no event shall the manufacturer be liable for any alarm system altered by purchasers.

### 11. Installation Schedule

Before setup the GSM Unit please write down the installation plan firstly, it is very useful for saving your test and installation time. After installed successful, then tear off this Schedule for review in further.

Installation Schedule					
SIMCard Number in the GSM Unit: _____					
Installation Address: _____ _____					
Serial Number	User Name	Phone Number	Alert Method Authorized Type		
			SMS&Call	SMS	Call
1					
2					
3					
4					
5					
6					
High Temperature Threshold Value		$^{\circ}\text{C}$			$^{\circ}\text{C}$
Notice: Please mark V if for enable and X for disable.					

The End!

Any questions please help to contact us feel free.

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