

## QK-G033 GSM/3G SMS Remote Controller Manual



Designed in UK



### Features

- Remote monitoring and control by mobile phone for 2G or 3G SMS message
- Connects to up to 2 alarm inputs and 3 Relay outputs
- Automatic alarm by SMS message when alarm input is triggered
- Status request and response by SMS
- Remote control of 3 Relay outputs by SMS message
- Automated control of 2 Relay outputs by SMS message (activated by alarm input)
- Scheduled control of 2 Relay outputs by SMS message
- Remote manual override
- Android APP interface
- Monitor and Control through text message input or phone APP
- Up to 4 mobile phones can monitor and control through each unit
- In-built clock for programming the switch state
- Easy to install and configure via SMS or APP (no PC required)
- Compatible with all major 2G and 3G SIM networks

# 1. Contents

1.	Contents .....	2
2.	Set up overview.....	3
3.	Introduction.....	4
4.	Enclosure .....	5
5.	Preparing SIM card .....	6
5.1.	Insert SIM into the SIM card slot.....	6
6.	Configuration .....	7
7.	Status LED's.....	7
8.	Alarm function and digital connection .....	8
9.	Relay working modes .....	9
9.1.	Normal open/ normal closed wiring options .....	9
9.2.	Daily timer setting .....	9
9.3.	Self-lock vs. latching mode .....	10
9.4.	Delay time setting on latching mode .....	11
10.	The G033 App.....	12
10.1.	Setup QK Main Controller SIM Number.....	13
10.2.	Register SIM cards .....	14
10.3.	Setting the clock on the QK controller .....	14
10.4.	Check relay working mode .....	14
10.5.	Rename control terminals .....	15
10.6.	Control panel.....	15
10.7.	Alarm log.....	17
10.8.	Other .....	17
11.	Command and response SMS codes .....	19
12.	Specification.....	22
13.	Limited warranty and notices .....	23

## 2. Set up overview

### You will need:

#### SIM card:

- **The SIM must operate on the 2G or 3G network.** Most network providers provide 2G or 3G cover, check with your supplier.
- **Credit on the SIM (we recommend automatic top-ups)**
- **The SIM is not PIN protected**
- **The SIM is set to disable voicemail**
- **Avoid SIM cards that deactivate automatically if the SIM is not used often** (If your SIM will do this and if your G033 is likely to be unused for long periods of time you will have to send the G033 an update request periodically to keep the SIM card active.)

**Power supply cable:** make sure it is long enough to reach your device in its final location.

**Check there is mobile network reception for your SIM card** in the location that your device will be installed (you can check by putting the SIM card in a mobile phone)

### Installation:

1. **Download and install the app** for mobile phones. <https://www.quark-elec.com/downloads/apps/>
2. **Select G033 location:** location must be indoors and not exposed to water or high humidity.
3. **Connect the relay output (if required):** check relay setup for whether you want relays in normal open (NR) or normal closed (NC) position. Think about length of wires needed to connect.
4. **Connect alarm inputs (if required):** alarm inputs must send signal as switches closing circuit to input 1/2 or by sending low voltage signal to input 1/2. Think about length of wires needed to connect.
5. **Insert your SIM into the G033 device (make a note of the SIM number first for reference)**
6. **Connect to power:** Check LEDs are working correctly.

**Red LED:** will flash at 1 second intervals once the system has finished initialization. It will then stop flashing every time it is operating a command

**Blue LED:** LED will flash blue at start up as it looks for a network signal. Once a signal has been found the LED will flash much slower.

7. **Register the main phone number that will control the device within 10 minutes of powering up the G033.**  
Register the main mobile terminal with G033 module by texting '88888888' from your chosen phone to G033 SIM card. If registration is successful, the module will reply with "Your phone has been registered". If unsuccessful, the module will reply with 'registered disabled'. If registration is unsuccessful, restart the device and reattempt registration within 10 minutes of powering up the device.

The system LED will flash after registration is completed. You can add up to 3 secondary control mobile phones using text/APP codes (check the manual for full list of text codes).

8. **You can now send commands and receive messages either by text or through the text generating APP.**  
Remember; the device processes one command at a time. Each command will have a reply to confirm the command has been received and executed. You must wait for a reply message before sending another command.

This is an overview only. Familiarize yourself with the manual before installation.

### 3. Introduction

The G033 series remote controller is a versatile device which can be connected to many electronic devices in homes, offices, factories or wherever required. The standard G033 includes two digital alarm inputs, three independent relay switches.

It allows operators to control and monitor remote equipment or machines using SMS (Short Message Service) via the 3G network. Up to 4 mobile phone numbers (SIM card numbers) can be linked to each G033 remote controller (1 main control terminal, and up to 3 additional control terminals). These mobile phones can belong to technicians, engineers or individuals who have a requirement to control and/or monitor corresponding devices.

The G033 includes:

- **Two digital alarm inputs connections:** for connection to various inputs to be monitored (an alarm SMS can be received when either alarm input is triggered. The alarm input can also be set to trigger automated control of the machinery connected to the Relay outputs 1 and/or 2)
- **Three relays output connections:** for connection to the machinery to be controlled (two with daily timers and automated control options manual options and one with manual SMS function)
- **Android and iOS APP:** the device can be controlled by either SMS text message codes or an APP for Android and iOS (iPhone) phones. This is a touch sensitive, user friendly interface.

Four control mobile phones - one main control terminal and up to 3 additional control terminals can be registered with G033.



Figure 1: System diagram

## 4. Enclosure

The enclosure is made of IP56 Insulation Class 2 plastic. External dimensions: 145 x 90 x 41 mm.



Figure 2: GK-G033E (European version)

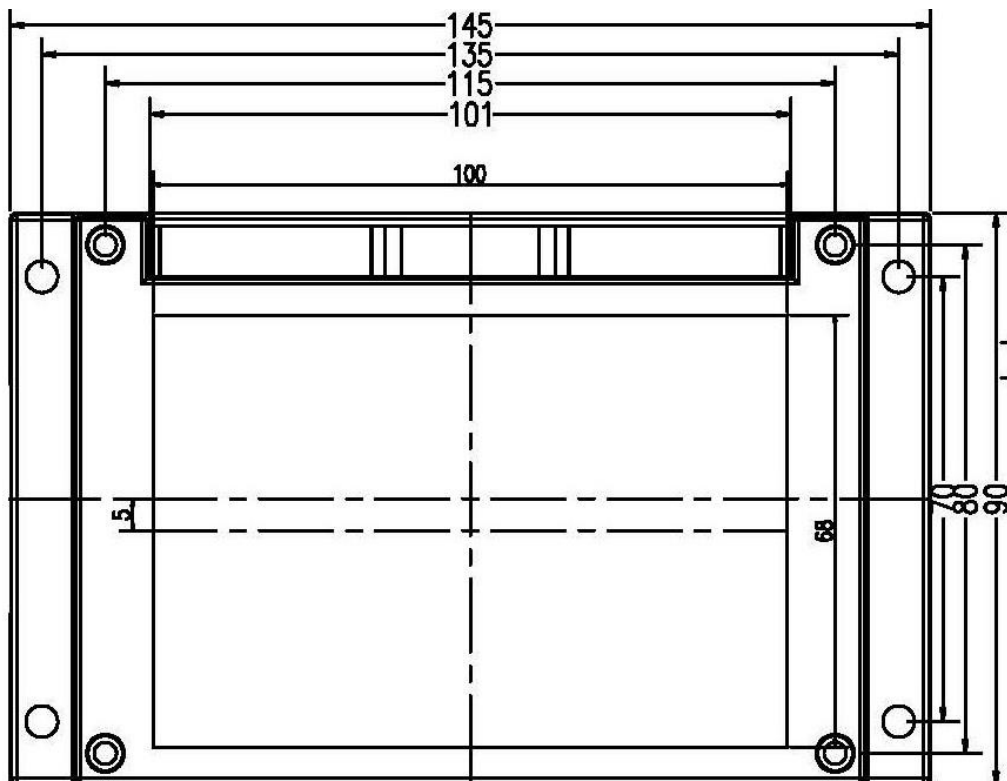


Figure 3: Enclosure drawing. Measurements in mm

## 5. Preparing SIM card

Please ensure:

- **The SIM must operate on the 2G or 3G network.** Most network providers provide 2G or 3G cover, check with your supplier.
- **There is credit on the SIM (we recommend automatic top-ups)**
- **The SIM is not PIN protected**
- **The SIM is set to disable voicemail**
- **Avoid SIM cards that deactivate automatically if the SIM is not used often** (usually after 3 months inactivity). If your SIM will do this and if your G033 is likely to be unused for long periods of time; send the G033 an update request periodically to keep the SIM card active.

Register the SIM card; ensure there is sufficient credit on the card for programming confirmation texts to be sent from G033 module.

The PIN request option should be disabled from the SIM card before inserting it into the G033 module. To check the PIN request status of your SIM card, place the card in an unlocked mobile phone and switch the phone on. If normal calls can be made without entering a PIN number, then it is disabled. Please also make sure voicemail is disabled before inserting the SIM card into the module.

If a 'pay as you go' (PAYG) SIM card is used, it is recommended that users choose to automatically 'Top-Up' when the credit falls below a certain limit. Some PAYG SIM cards will be de-activated by the network if they are not used to make an outgoing voice call or send an SMS text message within a specific period. To prevent this, simply send the G033 a text '**DQSJ**' (this can be done through the APP) and G033 will reply with the local time by text message. This should be done once a month to keep the SIM card active.

### 5.1. Insert SIM into the SIM card slot

- **Write down the SIM number before inserting into G033**
- **The SIM card should be inserted into the SIM card slot before applying the power.**
- **Power Up**

The G033 module can be powered by 12.0V to 24.0V DC power supply).

Connect a 12.0V DC power supply to the power screw terminals 1 & 2, ensuring positive is connected to terminal 1 and switch on the power supply.

- **The blue network LED** indicator will initially flash quickly and, once logged onto the network, it will flash more slowly, approximately once every 2-3 seconds.
- **The red power LED** will flash at 1 second intervals once the system has finished initialization.

## 6. Configuration

The following steps are required to configure G033 for first time use:

- Insert the SIM card into controller box
- Power up
- Send '88888888' as SMS to the G033 controller. If successful, the user will receive the message 'Your phone has been registered'. **This command should be received within the first 600 seconds after powering up G033. Otherwise "registered Disabled" message will be sent back to inform the failure of the main SIM registration.** If this happens, turn off the device and start again.
- If additional mobile terminals are required, the operator should send "BDn(mobile terminal number)F" to the G033 controller. The user will receive the message "Your phone has been registered".
- Up to 3 additional terminals can be configured (the main mobile number registered with the device won't show up when "WHORED" is sent). The operator is now ready to use G033. Details about the SMS command and response messages can be found in the [Command List Chapter](#).

You can control the device by either:

- Manually entering the codes by SMS text message
- Using the phone APP (android and iOS) interface. Using the APP, you simply select the action you want and the APP formulates and sends the SMS message for you. **This App does not allow you to send messages to your device for free nor does it work over WiFi.**

## 7. Status LED's

The device has two working LED's to notify the user of its current operations. The network LED and the system LED. Both these LED's flash depending on their operating status.

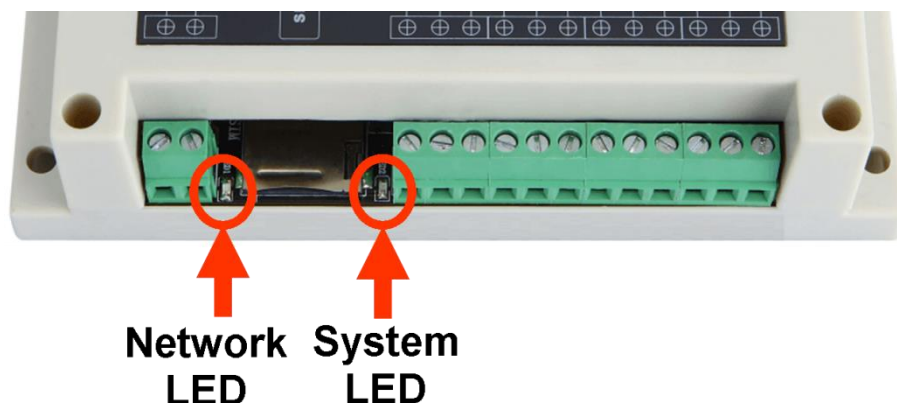


Figure 4: LED Indication

- **BLUE Network LED** will flash blue at start up as it looks for a network signal. Once a signal has been found the LED will flash much slower, about once every 2-3 seconds.
- **RED System LED** will flash at 1 second intervals once the system has finished initialization. It will then stop flashing every time it is operating a command.

## 8. Alarm function and digital connection

G033 has two external alarm input connectors and various inputs can be connected to them. For example, door/windows sensors, smoke alarms, carbon dioxide detectors, motion sensors, thermostats, temperature/wind detectors, and moisture detectors.

Using these sensors/detectors, G033 can be set up as a protection/alarm and response system.

G033 external alarm inputs are active when a trigger pulse or a constant level of 0 V is applied.

If the sensor/detectors are triggered (they send the low level signal (0 V) to G033); G033 will send out an SMS to the registered mobile terminals. Meanwhile, the corresponding relays you set up will also be activated. (Alarm function can be disabled so as not to activate relay or timer; it will still send message to say alarm triggered)

Alarm input port	Corresponding relay number
External alarm 1 (INT1)	Relay 1
External alarm 2 (INT2)	Relay 2
* PIR detector	Relay 3
*Note: the Alarm input function is not supported on Relay 3 on the standard G033. However, the wireless PIR detector works with Relay 3 on the QK-G022P variant. (More details can be found in the QK-G022P manual).	

There are two typical ways the external alarm inputs can communicate with G033. External alarm devices can be used as,

1. Switch
2. Alarm input source (low level voltage signal)

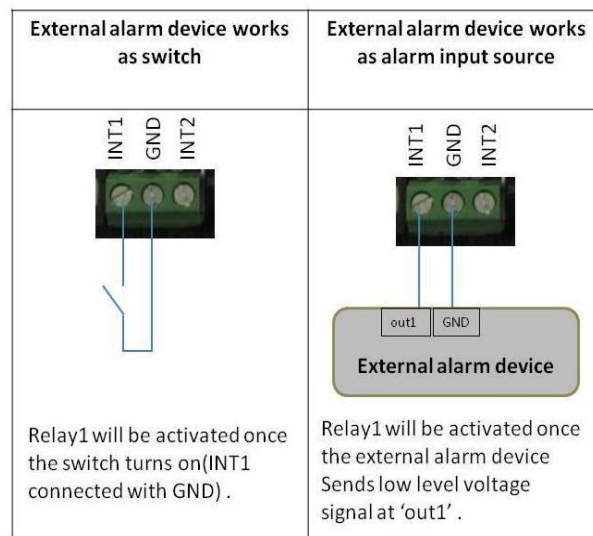


Figure 5: External alarm input device connection methods

## 9. Relay working modes

### 9.1. Normal open/ normal closed wiring options

The G033 is equipped with three digital output relays for connection to equipment to be controlled. The relays can be set up in normal open and normal closed positions. This gives the customer the advantage of having it set as a failsafe if there is a power loss or for timing the relay to open or close with delays.

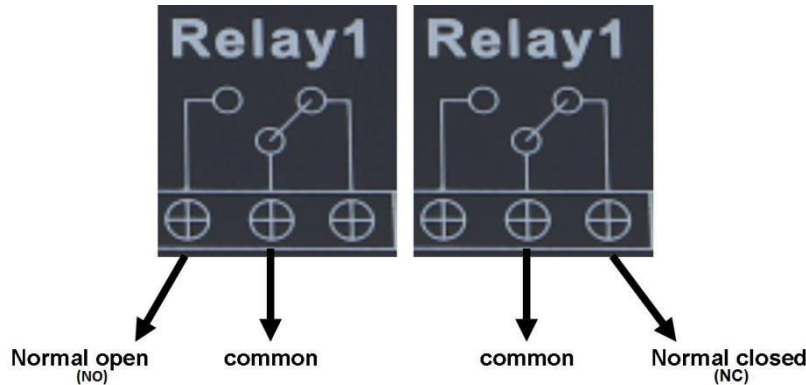


Figure 6 Relay positions

- **Normal open position** – if common and normal open are wired then relay 1 will be off when powered up. To activate relay 1 either a message or a command must be received from the user or from input 1. This activates the relay and closes the circuit turning on the output of relay1.
- **Normal closed position** – if common and normal closed are wired then relay 1 will be active while the G033 is powered up. This is for fail safe systems where the power going off in the G033 will close relay 1 and activate the output of relay 1.

It is important to understand that relays wired in 'normal closed' position will operate in the opposite way to 'Normal open'. For example the command to turn the 'Normal closed' relay setup OFF will turn the relay ON. This needs to be taken into account when setting up your designing system.

### 9.2. Daily timer setting

Daily timer settings are for Relays 1 and 2. They support a daily timer function to control the actions of the output. This is useful for turning the relays on and off without having to message the device. The relays will switch to ON/OFF states according to the timer settings. These relays also support two working modes, self-lock and latching control.

9.3. Self-lock vs. latching mode

The G033 allows for two different working modes; self-lock control and latching control. Self-lock allows for the usual function of the relay where a command from the operator or the device to change is needed. If input from an alarm then the relay will stay locked on until the command “EXTRT” is sent to the device from the operator (this is also the same for latching mode).

With latching controls the device will return to its normal status after a period of seconds determined by the user. This is useful for output devices that don't need or want to be on for a long time after they have been turned on. For example alarm horns which might only need to be on for 12 seconds to alert the user.

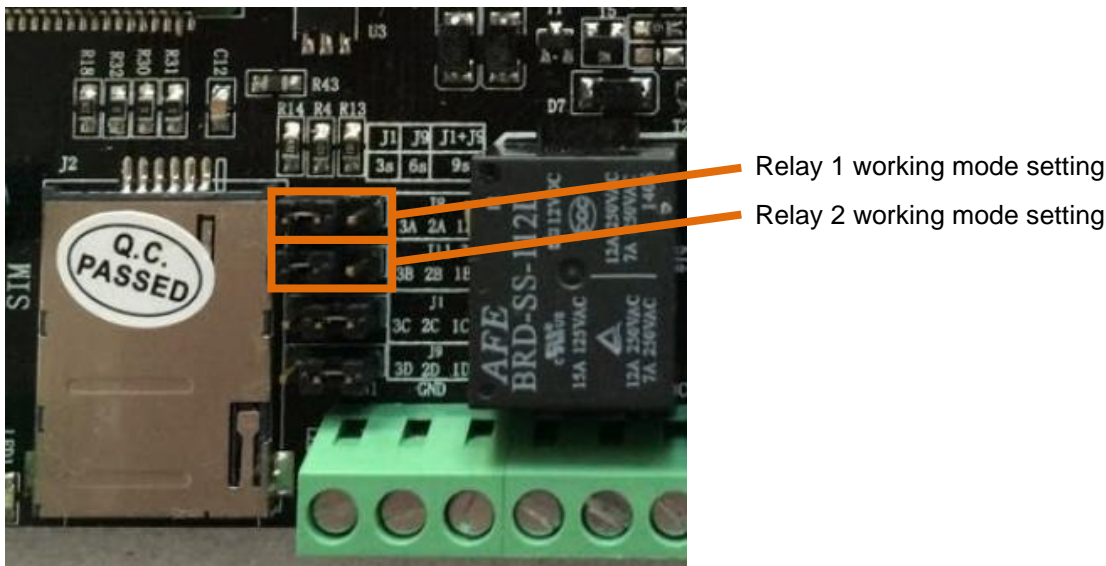
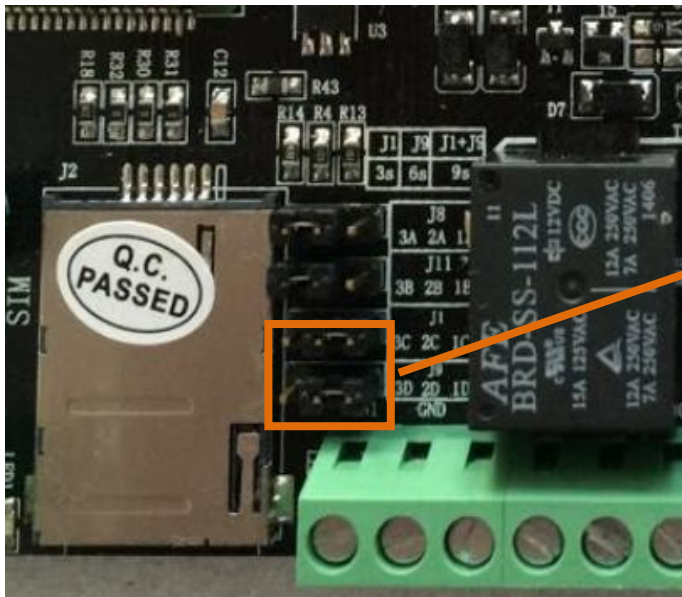


Figure 7Relay working mode configurations

	<b>Self-lock control</b> – normal operation of relay on or off by command from user or device timer
	<b>Latching control</b> - which means relay go back to normal status after a period of (3, 6, 9 or 12) Seconds.

#### 9.4. Delay time setting on latching mode

Working in latching mode, operators can configure G033 with different delay times for Relay 1 and Relay 2 by setting the delay time jumpers.



Delay time settings for Relay 1 and Relay 2

Figure 8 Delay time settings for relays

	Delay time set as:12 seconds
	Delay time set as:9 seconds
	Delay time set as:6 seconds
	Delay time set as: 3 seconds

Hardware versions, G033 provide SMS commands in '**ONOFFRnxxx#**' format to support other delay times (from 001 second to 999 seconds).

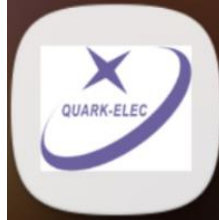
- 'n' indicates the relay number (1 or 2)
- 'xxx' means the delay times (from 001 to 999 seconds)

More details about this command can be found at chapter 10.

## 10. The G033 App

The G033 APP provides a touch sensitive, user friendly interface that will generate the text commands for you and send them from your mobile device to control the G033. You will still be charged at your normal text rate for the messages created by this app.

The app allows for up to two G033 devices to be controlled from a single mobile device.



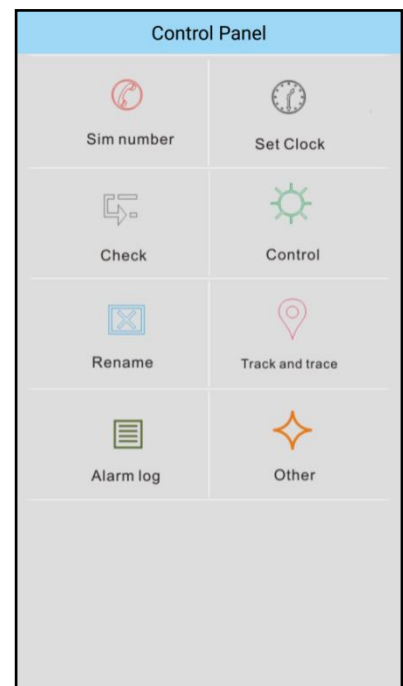
To download the app:

**IOS:** The iOS G033 APP can be downloaded from Apple store. Follow the link below. <https://itunes.apple.com/us/app/gsm-sms-remote-control/id905723192?mt=8>

**Android:** The latest Android G033 APP can be downloaded from the link below. The Android platform should be at least Version 2.1 or higher:  
<https://www.quark-elec.com/downloads/apps/>

This is the main screen of the app.

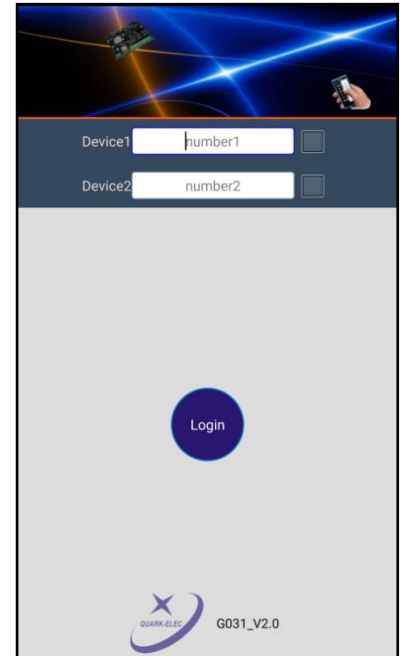
From here you can control all the G033 functions and generate SMS text commands.



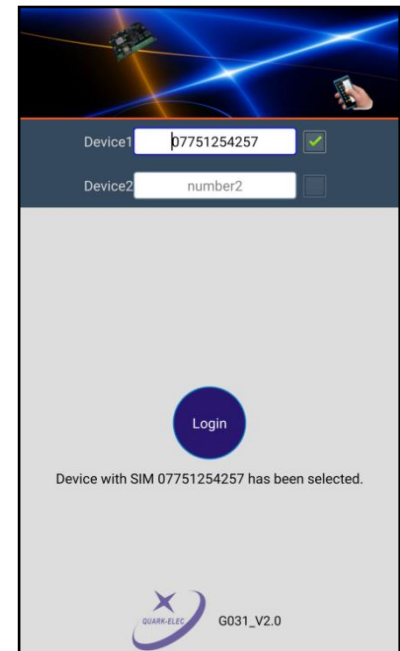
## 10.1. Setup QK Main Controller SIM Number

The first page you will see when opening the app is the login page. Here you can set two different SIM numbers for 2 different G033 devices. Enter the telephone number of the SIM card that you inserted into the G033 where it says '**Device 1**' in the app. If you have 2 G033 devices then you can enter the second SIM card number where it says '**Device 2**'. The app will save these numbers so you don't have to keep entering them.

- Input the number of the SIM card which is inserted into the G033 into '**Device 1**'. All command SMS messages will be sent to this number via the APP.



- Check the tick box to the right of the number you would like to control. Then press the '**login**' button.
- Once the SIM card number have been stored, the APP will reply with a confirmation message



## 10.2. Register SIM cards

G033 allows one mobile phone to function as the main controller and up to 3 additional phones to function as control terminals. The following interface allows the operator to register, delete and check the SIM card numbers:

- **Register myself as main SIM card:** When starting the G033 for the first time you will need to add the main controller SIM number to the device. Do this by entering the mobile number you would like to be the main controller or '**click register myself as main SIM card**'. There must always be a main controller for each device.

**You will have ten minutes to register the main controller SIM once you power up the G033**

- **Register 1st, 2nd, 3rd, additional SIM card:** click this button to register additional SIM cards. These additional SIM numbers are authorized to control the G033
- **Check registered SIM numbers:** this will give the user a read out of the telephone numbers that are authorized to control the G033
- **Replace the main SIM numbers:** this allows for the main controller SIM to be reset. Once this message is received by the G033, the user will have 10 minutes to register the main SIM.

## 10.3. Setting the clock on the QK controller

G033 can automatically execute actions at the time set by the operator. To do this, the real time clock on the G033 controller must be set. This page allows the operator to check and set the time on G033 internal clock. When using this function a solid capacitor is used. With a solid capacitor, the real time clock can keep working for at least 12 minutes after power off.

- **Set clock on QK controller:** To set the time on the G033 enter the current time in the white box. The time format is 24hour (i.e. 11.55.00). When complete click submit to set this as the G033's time.
- **Check the clock on QK controller:** To request the time on the G033, click request at the top of the page. This will send a message saying the time relative to the G033's internal clock.

## 10.4. Check relay working mode

G033 has three individual relays which support two working modes, self-lock and latching control. When working in latching mode, the relay will action a command from a user determined amount of time (depending on the time

setting on the jumpers on the board. See chapter 11.4) and then reverts back to the previous state. When working in self locking mode, the relay will stay active until the next command is received. The G033 can also report the relay working status And check the temperature for each sensor via the app.

- **Relay working mode:** This will inform the user which **relays** are in self-lock or latching mode. This is for relays 1 and 2
- **Relay working status:** This tells the users which relays are in the normal open position and which are in the normal closed position.

The screenshot shows a mobile app interface titled 'Check relay working status'. It contains three distinct sections, each with a title and a 'Check' button: 'Relay working mode', 'Relay working status', and 'Temperature'. At the bottom of the screen is a 'Back' button.

## 10.5. Rename control terminals

The control terminals can be renamed as a meaningful name in APP. For example Heater or Cooler. The RF switch option has been discontinued and is there for customers still with RF switches.

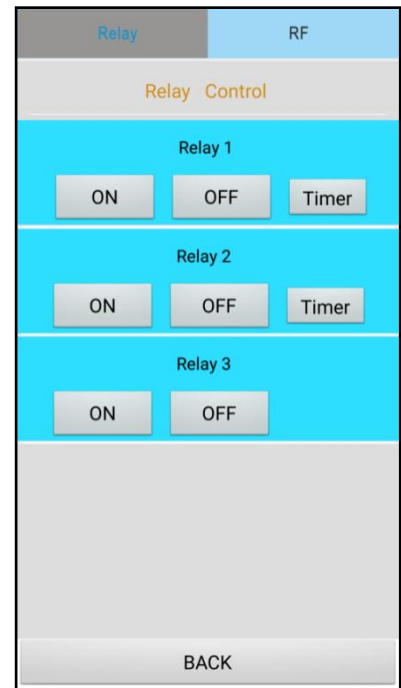
- Click the white box of the relay or switch that you would like to rename. You will receive a pop-up in your mobile to change the name. Type in the new name and click enter.

The screenshot shows a mobile app interface titled 'Rename control terminals'. It lists seven control terminals: 'Relay 1', 'Relay 2', 'Relay 3', 'RF switch1', 'RF switch2', 'RF switch3', and 'RF switch4'. Each terminal name is followed by a text input field containing the same name. A 'Back' button is located at the bottom of the screen.

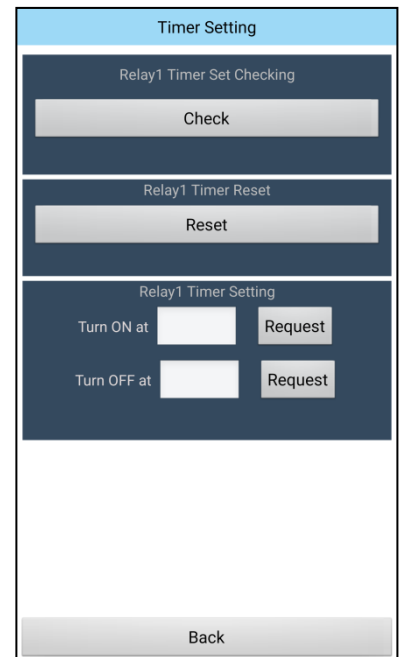
## 10.6. Control panel

The control panel provides the main operating interface for turning relays on and off and setting timers. By clicking 'ON' in the app, a message will be sent to the G033 turning the specific relay on. This is the same for the 'OFF' button.

- **Relay 1, 2 and 3 on/off:** clicking 'on' button will send a message to the G033 controller to turn the relay into the **normal open** position. You must wait for the command to be received before issuing another command to the controller. The 'off' button operates the relay to the normal closed position.
- **Relay 1 and 2 Timer:** only relays one and two have timer functionality. See next step for timer instructions.



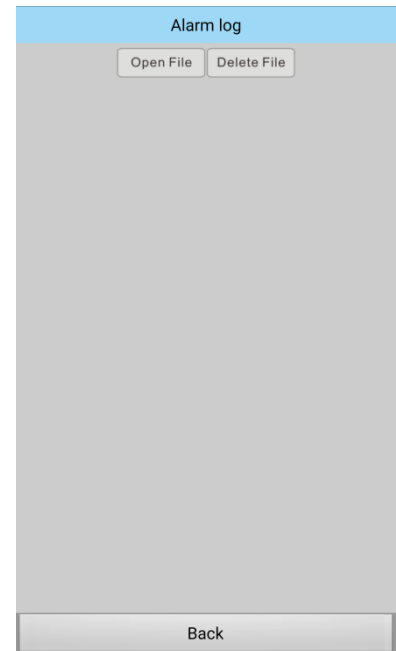
- **Relay timer settings:** set the time at which you would like the relay to turn on and off. This is a 24 hour format (i.e. 13.55.00)
- **Relay timer set checking:** Check the current setting of the timer
- **Relay timer reset:** Switches off the Timer setting. This does not affect the internal clock.



## 10.7. Alarm log

The alarm log page will show all the alarm alerts and when they were activated. The app will store these logs within your mobile device.

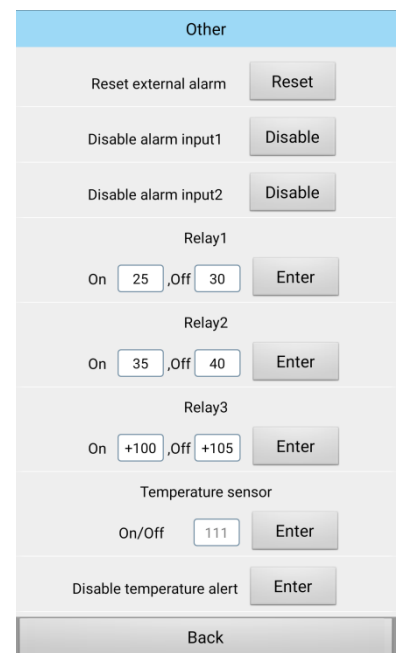
- **Alarm log:** once alarms have been triggered this page will become populated with your alarm trigger times.



## 10.8. Other

The 'other' Tab within the app gives you controls for setting small delay timers, disabling alarms and there inputs. This can also be used for setting the temperature values of the relays and resetting alarms.

- **Reset external alarm:** It will reset the alarm input allowing a command to be received by the G033. This command will usually be followed by either '**Disable alarm input**' or '**relay off**' command
- **Disable alarm input:** this will disable the alarm input of the chosen relay (relays 1 and 2)
- **enable alarm input:** this will enable the alarm input of the chosen relay (relays 1 and 2)



- **Disable alarm alert:** this command stops input alarm alerts being sent to the controllers. This is very useful because for every alarm input triggered. The G033 will send a text message to the controllers notifying them of this.

**G033 will not alert the user to the alarms inputs being enabled when this command is sent. The G033 will still automatically initiate the corresponding relay.**

- **Enable alarm alert:** command enables input alarm alerts being sent to the controllers.

The screenshot shows a mobile application interface with a blue header labeled 'Other'. Below the header, there are several settings sections:

- Relay3:** A section with 'On' and 'Off' toggle switches. The 'On' switch is set to '+100' and the 'Off' switch is set to '+105'. There is an 'Enter' button to the right.
- Temperature sensor:** A section with an 'On/Off' toggle switch set to '111' and an 'Enter' button to the right.
- Disable temperature alert:** A button labeled 'Enter'.
- Enable temperature alert:** A button labeled 'Enter'.
- Disable alarm1 alert:** A button labeled 'Enter'.
- Disable alarm2 alert:** A button labeled 'Enter'.
- Enable alarm1 alert:** A button labeled 'Enter'.
- Enable alarm2 alert:** A button labeled 'Enter'.

At the bottom of the screen, there is a 'Back' button.

## 11. Command and response SMS codes

Please note:

All SMS text commands must always be sent using CAPITAL letters. Do not add spaces or other characters.

Function	Command	Note
<b>Register SIM cards</b>		
Register main SIM card	<b>88888888</b>	Register the main mobile terminal with G033 module by sending ' <b>88888888</b> ' to G033 model. If registration is successful, the module will reply with ' <b>Your phone has been registered.</b> ' Each G033 module can only have one main registered SIM card number. This message should be received within the first 600 seconds once G033 powered up, otherwise ' <b>registered disabled</b> ' message will be send back to inform the failure of the main SIM registration.
Replace main SIM card	<b>XGZHM</b>	The registered main mobile terminal can send ' <b>XGZHM</b> ' command at any time if a new SIM card needs to be replaced as the main mobile. After G033 module receives ' <b>XGZHM</b> ', it will allow any mobile terminal to replace the main mobile number by sending ' <b>88888888</b> ' within 600 seconds.
Register additional SIM cards	<b>BDn(mobile number)F</b> n=1, 1 <sup>st</sup> additional mobile n=2, 2 <sup>nd</sup> additional mobile n=3, 3 <sup>rd</sup> additional mobile	Once the main mobile terminal is registered with G033, another three mobile terminals can be paired with G033. For example, by sending " <b>BD107919157124F</b> ", the first additional mobile terminal (number is 07919157124) has been paired with G033. Similarly, " <b>BD207909135124F</b> " means pairing G033 with the second additional terminal (whose number is 07909135124). The message ' <b>Your number n phone has been registered</b> ' will be returned by G033, if mobile terminal n is successfully paired.
Delete additional SIM cards	<b>DELn</b> n=1, 1 <sup>st</sup> mobile terminal n=2, 2 <sup>nd</sup> mobile terminal n=3, 3 <sup>rd</sup> mobile terminal	The registered SIM cards can be deleted from the authorized SIM list by sending <b>DELn</b> . The deleted SIM terminals can no longer control G033.
Check registered SIM numbers	<b>WHORED</b>	G033 will reply with the authorized SIM list in the following format: ' <b>No.1 SIM is xxxxxxxx; No.2 SIM is xxxxxxxx; No.3 SIM is xxxxxxxx.</b> '
<b>Switching relay &amp; mode checking</b>		
Switching relay ON	<b>DKYn</b> n=1, Relay 1; n=2, Relay 2; n=3, Relay 3.	G033 will reply with the relay state information in the following format: ' <b>Port n ON</b> ',---working in self-lock mode ' <b>Port n has been triggered</b> ' ---working in latching mode Where n is the relay number.
Switching relay OFF	<b>GBYn</b> n=1, Relay 1; n=2, Relay 2 n=3, Relay 3.	G033 will reply with the relay state information in the following format: ' <b>Port n OFF</b> ', ---working in self-lock mode ' <b>External triggered, no action</b> ', ---working in latching mode

		Where n is the relay number.
Check relay working mode	<b>RMODE</b>	G033 will reply with the relay working mode information in the following format: ' <b>MMMM1MMMM2</b> ', where MMMM could be INCH or SELF. INCH refers to Latching control mode (relay will act for 3 seconds and then revert to the normal position), and SELF refers to Self-lock mode. For example, <b>INCH1SELF2</b> means, relay 1 works in Latching control mode and relay 2 works in Self-lock mode.
Check relay working status	<b>WHOACTIVE</b>	G033 will reply with the relay working status information similar to the following format: ' <b>R1, R2, R3: ACTIVE; DEACTIVE; ACTIVE.</b> ' Where <b>ACTIVE</b> means the related relay has been triggered (COM port connected to NO port), <b>DEACTIVE</b> means the related relay is on the normal status.
One-off relay switch toggling	<b>ONOFFRnxxx#</b> n=1, Relay 1; n=2, Relay 2. xx range from 001 to 999, indicating the delay time in seconds. *From Aug 2018, this command has changed to be ' <b>ONOFFRnxxx#</b> '; this allows the maximum time can be 999 seconds.	For example, by receiving <b>ONOFFR175#</b> , the first relay (Relay 1) will be triggered on for 75 seconds and then switched off, whether G033 is working in Latching mode or in Self-lock mode. G033 will reply with the relay information in the following format: ' <b>Port 1 is ON and will be OFF 75 seconds afterwards</b> ' . This is a one-off command, only valid for one time action. The APP does not support this command, so the operator should use SMS to send this message.
<b>433 MHz RF module (discontinued)</b>		
Switching RF module ON	<b>ONRFn</b> n=1 for 1 <sup>st</sup> RF terminals n=2 for 2 <sup>nd</sup> RF terminals n=3 for 3 <sup>rd</sup> RF terminals n=4 for 4 <sup>th</sup> RF terminals	G033 will reply with the relay state information in the following format: ' <b>RFn socket is ON</b> ', where n is the RF terminal number.
Switching RF module OFF	<b>OFFRFn</b> n=1, 1 <sup>st</sup> RF terminals; n=2, 2 <sup>nd</sup> RF terminals; n=3, 3 <sup>rd</sup> RF terminals; n=4, 4 <sup>th</sup> RF terminals	G033 will reply with the relay state information in the following format: ' <b>RFn socket is OFF</b> ', where n is the RF terminal number.
<b>Timer</b>		
Set time on G033	<b>SThhmmss#</b> Where hhmmss is the current time	For example, by sending ' <b>ST153000#</b> ', the operator set G033 time as 15:30:00. G033 will return the message ' <b>Time setup successful</b> ' to accept this setting. If the operator sends the wrong time format, G033 will return the message ' Time setup failed ' .
Check the local time on G033	<b>DQSJ</b>	By sending ' <b>DQSJ</b> ', the operator will receive the local time. The message received would be ' <b>Time at terminal is 12:30:32</b> ' .
Set Switching Relays ON time	<b>ONnhhmmss</b> n=1, Relay 1 n=2, Relay 2 hhmmss is the Switch ON time.	For example, by sending ' <b>ON2163000</b> ', the operator set Switch Relay 2 ON at 16:30:00. Message as ' <b>Port 2 will switch ON</b> ' will be returned to operator if the setting successful.

Set Switching Relays OFF time	<b>OFnhhmmss</b> n=1, Relay 1 n=2, Relay 2 hhmmss is the Switch OFF time.	For example, by sending ' <b>OF2194500</b> ', the operator set Switch Relay 2 OFF at 19:45:00. Message as ' <b>Port 2 will switch OFF</b> ' will be reply to operator if the setting successful.
Check the current setting of the timer	<b>RELAYnTIMER</b> n=1, Relay 1 n=2, Relay 2	For example, by sending " <b>RELAY2TIMER</b> ", the timer setting on reply 2 will be reply to operator. The replied message will be similar as ' <b>Port 2 will switch ON at 12:30:00 and switch OFF at 13:30:00</b> '
Switch off the Timer setting	<b>GDSn</b> n=1, Relay 1 n=2, Relay 2	Message ' Timer on Relay n has switched OFF ' will be returned to the operator if the setting is successful; where n is ' 1 ' or ' 2 '. Note: The local time will not be affected by switching off the timer.
<b>GPS tracking</b>		
Check the current position of the module	<b>DQGPS</b>	Message similar as ' <b>http://maps.google.com/maps?q=51.961718,-0.269798</b> ' will be returned to the operator if the setting is successful. By click the replied link message, G033 module position will be displayed on Google map.
<b>Monitoring/alarm input</b>		
Releases relay status which is triggered by the external signals.	<b>EXTRT</b>	After it has been triggered by the external signals, the related relay will be locked in the normal state. By sending ' <b>EXTRT</b> ', the relays will be unlocked and available for responding to SMS commands again.
Disable the function of been triggered by external signals.	<b>EXTGBn</b> n=1, Relay 1 n=2, Relay 2 n=3, only available for PIRwireless PIR detector (QK-G022P variant)	By sending ' <b>EXTGBn</b> ', the external alarm input n will be disabled. Message ' Alarm input n has been disabled. ' will be returned to the operator if the setting is successful, where n is ' 1 ' ' 2 ' or ' 3 '. By sending ' <b>EXTRT</b> ' all external alarm inputs will be active. This disable status doesn' t affect by re-powering up the module, only ' <b>EXTRT</b> ' can.
Disable alarm alert message	<b>EXTGGn</b> n=1, Relay 1 n=2, Relay 2	By sending ' <b>EXTGGn</b> ' the alarm notification message will not be sent from controller. When and alarm input is recognised the relay will still function but won' t send a command t the main sim
Enable alarm alert message	<b>EXTKKn</b> n=1, Relay 1 n=2, Relay 2	By sending ' <b>EXTKKn</b> ' the alarm notification message will be sent from controller. When and alarm input is recognised the relay will work and the device will send a confirmation message to the users.
G033 has two digital input ports which can be used to monitor external signals. These two external input ports can accept 0 V to 24.0 V voltage levels. Should the input voltage level be below 1.0 V, the main mobile terminal will receive the warning message ' Port n has been triggered ' , where n is the relay number. The relay n will switch to the normal state (NC will be the closed state and NO will be the open state). Sending ' EXTRT ' will release the relays and make them available for responding to SMS commands.		

## 12. Specification

Item		Specification		
SMS		MT, MO, CB, text and PDU mode		
Operating temperature		- 30°C to + 80°C		
Storage temperature		- 45°C to +90°C		
DC supply		12.0 to 24.0V (+/-5%)		
Average supply current (typical quiescent)		40 mA		
Maximum supply current (during SMS transceiver activity)		600 mA		
3G receive sensitivity		-109 dBm		
3G transmitting power		UMTS 850/1900: 0.25W UMTS 900/2100: 0.25W GSM850/EGSM900: 2W DCS1800/PCS1900: 1W		
433 MHz transmitting power		1 W		
433 MHz modulation mode		ASK (AM)		
RF transmission power		<10 mW		
RF emission distance		25 to 50 meters (open air conditions)		
Rated current on relay		7A 240 V AC		
Rated voltage on relay		9.0 V – 245.0 V		
RF main socket power rating		< 2000 W		
G033 Frequency bands by region				
Standard	Frequency	G033J	G033E	G033A
GSM (2G)	GSM 850MHz	✓	✓	✓
	EGSM 900MHz	✓	✓	✓
	DCS1800MHz	✓	✓	✓
	PCS1900MHz	✓	✓	✓
WCDMA (3G)	WCDMA 850MHz	✓		✓
	WCDMA 900MHz		✓	
	WCDMA 1900MHz			✓
	WCDMA 2100MHz	✓	✓	

For more technical information and enquiries please go to the Quark-elec forum:

<https://quark-elec.com/forum/>

For sales and purchasing information, please email us at: [info@quark-elec.com](mailto:info@quark-elec.com)

## 13. Limited warranty and notices

Quark-elec warrants this product to be free from defects in materials and manufacture for one year from the date of purchase. Quark-elec will, at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts and labour. The customer is, however, responsible for any transportation costs incurred in returning the unit to Quark-Elec. This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration or repairs. A returns number must be given before any unit is sent back for repair.

The above does not affect the statutory rights of the consumer.

### Disclaimer

It is the user's responsibility to use this product prudently. Neither Quark-, nor their distributors or dealers accept responsibility or liability either to the products user or their estate for any accident, loss, injury or damage whatsoever arising out of the use or of liability to use this product.

Quark- products may be upgraded from time to time and future versions may therefore not correspond exactly with this manual. The manufacturer of this product disclaims any liability for consequences arising from omissions or inaccuracies in this manual and any other documentation provided with this product.

### Document history

Issue	Date	Changes / Comments
V1.0	10/10/2018	Initial release
V1.01	23/11/2020	No longer support iOS App

For more technical information and enquiries please go to <https://quark-elec.com/forum/>

For sales and purchasing information, please email us at: [info@quark-elec.com](mailto:info@quark-elec.com)

Quark-elec (UK)  
Unit 7 the Quadrant  
Newark close  
Royston, UK  
SG8 5HL

