| Command | Action | | | Comments |
|---|---|---|---|---|
| ACKNOWLEDGE | **DISABLE** | ENABLE | | SMS on Relay Change State |
| ADD | *number* | . | | Add User Number |
| AUTODIAL | **OR** | AND | | |
| CALL | **LIST** | ANY | NONE | Call Handling |
| CALLNUM(A/B) | *number* | | | Add Autodial Call Number |
| CLEARALL | | | | Factory Reset |
| CLOSE | | | | Deactivate Relay |
| CONNECT | CALL | | | Connect Call |
| CSQ | | | | Get RSSI |
| CTIME | **<seconds>** | . | | Set Call Maximum Time Limit |
| CUSTOM | | | | Custom input message |
| DIAL | *number* | | | Dial Number on Receipt |
| DIVERT | **ENABLE** | DISABLE | | Enable Dialling Diverted Calls |
| EXIT | **DISABLE** | ENABLE | | Exit Switch Enable |
| FORWARD | DISABLE | ENABLE | TEMP | Forward SMS/SSD |
| INPUTX | **BOTH** | AUTO | TEXT | INPUT Control (4.1) |
| INPUTX | DISABLE | | | |
| INLEVELX | **OPEN** | CLOSE | BOTH | Input Edge (4.2) |
| KA | *number* | *frequency* | | Keep Alive Message |
| LIST | | | | List All Numbers |
| MASTER | *number* | . | | Add Master User |
| MUSER | **DISABLE** | ENABLE | | Treat all users as Master |
| OFF [as CLOSE} | | | | Deactivate Relay |
| OPEN/ON | *<minutes>*m. | | | Activate Relay (with Time) |
| PSMS | **ENABLE** | DISABLE | | Power Up Text Alert |
| QUERY/QNUM | *number* | . | | Find Number in Memory |
| REJECT | CALL | | | Call Handling |
| REMOVE(C/D/M/T) | *number* | . | | Remove Number |
| RESET | | | | Remote Restart |
| RLYMODE | **PULSE** | TOGGLE | RING | Relay Mode Toggle/Pulse |
| RLYTIME | *<seconds>* | | | (default 3s) |
| RLYTIME | *<minutes>*m | . | | relay time in minutes |
| RSMS | **ENABLE** | DISABLE | | Reset Text Alert (Network) |
| RTIME | *<seconds>* | | | Maximum Ring Time |
| SILENCE | *<seconds>* | | | Maximum Line Silence Time |
| SMS | *number,* | *interval (days)* | . | PAYG Keep Alive |
| STATUS | | | | Get Relay and Input Status |
| TEXTNUM(A/B) | **<master>** | *number* | . | Input Trigger Text Numbers |
| TEXTRES | **DISABLE** | ENABLE | | Result Acknowledgement |
| VOLUME | (1-9) | | | Loudspeaker Volume |

**Advent Controls**

# QUAD Band GSM Door Entry Intercom

# DE2.01/Firmware 4.01

## Open-on-Call Access Control with Text Alert & Auto-Dial

**for GSM850MHz, GSM900MHz DCS1800MHz & PCS1900MHz**

*www.adventcontrols.co.uk*

## Contents

### 6.3     Power Connection

A fused AC or DC power supply of between 12 and 24V (MAX!) should be used with this unit.  AC voltages over 24VAC may damage the unit.  We recommend you measure the supply voltage when using AC to ensure it does not exceed this voltage during normal operation.  DC voltages are permissible up to 32VDC absolute maximum.
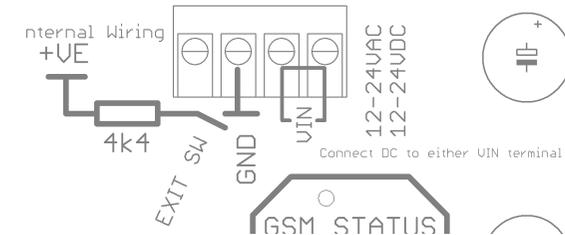


AC power supplies should be connected to either of the ~VIN terminals.  Similarly DC supplies should be connected to these terminals with the polarity connected either way around (i.e. +ve and –ve connected to either of the ~VIN terminals).

If DC supply voltages are liable to drop below 12VDC or it is mandatory that the GND terminal be at the same voltage level as the supply ground, connect the negative (0v) supply to the GND terminal and the supply +ve to the outer-most ~VIN terminal (terminal number 5).  This will bypass the bridge rectifier for the GND negative supply.

### 6.3     Output Connection

The relay output has Normally Open (NO) and Normally Closed (NC) relative to COMmon (COM) connections.  These can be actuated in a momentary operation or can be toggled (see **3 Setup**).

The connections are 'voltage free' with no connection to +VE or GND.  The relay connections have a minimum creepage distance greater than 4mm and are CATII rated to 220V.

### 6.4     Antenna Connection

The standard antenna can be used where a good signal exists.  In areas with a poor signal an external antenna is recommended connected via RG174 coaxial cable.  The system antenna connection is a male Hirose U.FL connector.  It is not recommended to use an extension greater than 3m in length.  Please contact support@adventcontrols.co.uk for external antennae.

## 6      Installation
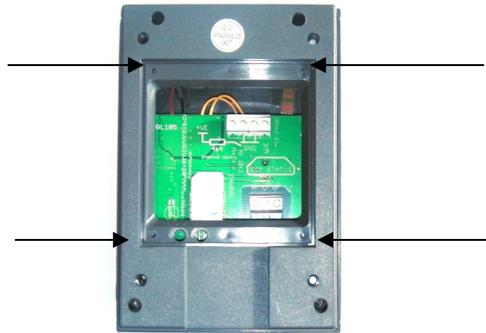


### 6.1      Inserting a SIM card

Remove the screws from the SIM card cover shown in the above diagram. This will expose the internal circuit board. Insert a suitable SIM card. It is recommended at this stage to power up the unit and set up at least one master user.
Pass any required cables through the slit in the rear cover and connect them to the PCB. Refit the rear cover.

### 6.2      Wall Mounting

The enclosure is IP45 rated and the PCB has a conformal coating making it suitable for outdoor use.

Mount the plastic hood using the supplied screws and drill a hole for the cable exit. Puncture the rubber gasket in the appropriate place and feed any cables through this.
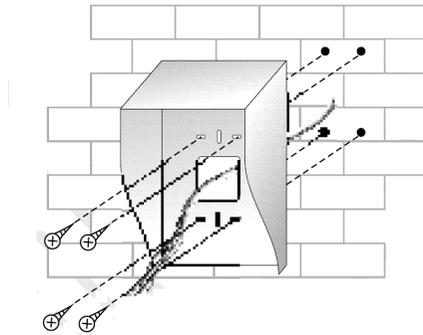


Remove the screw in the underside of the unit. Lift the aluminium cover up at the bottom and slide free. You can now access the illuminated name tag.

With the aluminium plate removed use the supplied screws to mount the unit to the hood through the holes shown in the picture overleaf.

## 1.      Introduction

The Advent Controls GSM Door Entry Intercom allows callers to your property to speak to you no matter where you are. When connected to a door or gate you can grant a visitor access using your telephone. Using the GSM network the unit requires only power to operate making installation simple.

The door output relay can be activated by pressing your telephone's ∗ key during a call or by calling the system from any registered telephone with caller ID enabled

Setup and operation is performed by simple SMS text messages including adding and removing user telephone numbers. A complete list of accepted telephone numbers can be viewed via SMS text message. The memory can also be scanned to see if it contains an individual number and the result is displayed by the on-board LED and (if enabled—see **2.10 TEXTRES**) by SMS text message. SIM card balance checking can also be achieved using the SMS and Service data forwarding functions.

The output relay has both Normally Open (NO) and Normally Closed (NC) with Common (COM) connections. The action of the relay can be a single timed actuation from either 1s to 999s or 1 to 999 minutes or the relay can be set to toggle between calls.

It is recommended you refer to the supplied Quick Start Guide when doing the initial setup and wiring.

### 1.2      Technical Specification

| | |
|---|---|
| Power Supply | 12-24V AC or DC 400mA Max. (35-20mA idle) |
| Average Current (in-call) | 60mA @ 28VDC, 95mA @ 18VDC, 130mA @12VDC |
| Relay Output | 5A Max. |
| SIM | 1.8/3.6V |
| Compliant with GSM Phase 2/2+ | Class 4 (2W @850/900 MHz) |
| | Class 1 (1W @1800/1900 MHz) |
| Antenna | 50Ω U.FL |
| Audio Speaker Power Output | 700mW RMS |

### 1.3      Number Types

When adding a telephone number to the system it can be set up as one of five different telephone number types with each type having a specific purpose. There is space for 512 numbers and each number can be set up as any type of number. For example you may wish to have 200 masters and 312 users. **All four user number groups can operate the output relay by SMS text or by calling the board.**

### Master Numbers

These numbers are used to make changes to board including adding other numbers. At least one master number must be set up when the board is first used (see **section 2.3**). Once one master number is set up it can then be used to set up other master numbers

Example Master Number setup command:

Master 07000000000.


ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

**User Numbers**

User numbers are only able to operate the relay output. This can be via SMS text or by calling the board. Unless MUSER is enabled (this makes all numbers master numbers) user numbers cannot access any command functions.

Example User Number setup command:

Add 07000000000.

**Call Numbers**

Call numbers are dialled when the call button is pressed. They are dialled in the order in which they are added. The numbers are dialled sequentially until a call is answered and rejected or a call is answered and the ∗ key is pressed.

Example Call Number setup command:

Callnum 07000000000.

**Data Numbers**

Data Numbers are setup in a similar way to master numbers and allow settings to be amended using software. A call from a data number may leave the unit unresponsive for up to 3 minutes after the call has ended. Data numbers cannot activate the output relay. Details of the software are not covered in this manual. Please see the Advent Controls website/blog.

Data 07000000000,**37212.**          for module with IMEI 3550730342**37212**

**Text Numbers**

These numbers are the recipients of input triggered SMS text messages. The board sends SMS text messages to these numbers in the order in which they are added. These numbers cannot access any of the board's command functions but are able to operate the output relay by call or text. Note, if a master or user sends a command to the board which results in a SMS text reply, the reply is sent to the sender of the command and not the list of text numbers.

TEXTNUM 07000000000.


**2.      Operation**

**2.1      Registration**

A valid GSM Subscriber Identity Module (SIM) card must be present in the SIM holder for the system to operate. Immediately on power up the system will attempt to register on the SIM card on it's home network. Once registration has occurred the 'GSM STATUS' LED will change from flashing approximately once every second to a momentary flash once every two seconds. If the 'GSM STATUS' LED continues to flash once every second for some time, the system cannot register the SIM on the network. The system will restart should this occur. If the problem persists check the antenna and strength of signal in your area/validation of the SIM card. **Remove any PIN numbers from the SIM card and delete all messages from inboxes and sent items.** Observe anti-static precautions when inserting the SIM.

When setting up the system it is important to know the strength of signal for reliable operation. To receive a message showing the Received Signal Strength Indicator (RSSI) the CSQ command is sent to the system as follows:

**CSQ**

When the system SIM card has sufficient credit a SMS text message is sent to the number which sent the command displaying the current RSSI.

e.g. >RSSI 21

It is recommended that the minimum signal level for the installation is 12

**5.3      Power Up/Reset Text Message**

The system can send an message to all the text numbers when a system reset or power up has occurred. This can be due to network failure or power cycling (power off followed by power on). Note the system repeatedly resets during network outage. You will only receive 1-message after a network outage.

| | |
|---|---|
| **RSMS Enable** | enables the reset text message |
| **RSMS Disable** | disables the reset text message |
| **PSMS Enable** | enables the power up text message |
| **PSMS Disable** | disables the power up text message |

**5.4      SIM Card Balance Checking and Service Data Forwarding**

The system is able to forward SMS messages and Service Data which networks use to display remaining air-time minutes or credit. The forward function can also send network data used to register a SIM with the network website. All forwarded data is sent to the phone which set the service up. The forwarding service can be permanently enabled to forward all unsolicited messages from unrecognised numbers (i.e. not user or master numbers) to the forwarding phone number. However, to stop excessive 'spamming' and wasting credit, the service can be enabled in temporary mode limiting to forwarding messages for only 3 minutes after a master user has sent a valid message (typically the SMS or DIAL command). Additionally only one message will be forwarded every minute to ensure excessive numbers of messages are not sent.

| | |
|---|---|
| Forward Enable | Forwarding service permanently enabled |
| Forward Temp | Forwarding for up to 3 mins after a valid messaged received only |
| Forward Disable | No SMS/Service Data Message forwarding |

**5.5      Forwarding SMS Messages to any Number**

Typically the SMS command is used to forward a SMS text to the network to request a balance. However the SMS function will forward the text to any number specified.

**SMS** <number>,<text>.          E.g. **SMS** 150,Balance

This will text 'Balance' to number 150. Please note you need to ensure the forward service is set up as above to receive a reply from the system

For network which require a code to be dialled use the DIAL for example Vectone UK:

**DIAL** ∗102#          dials '∗102#' for a balance request (see section 4.10 Dial Now)

### 4.7 Changing the Maximum Line Silence Time

The maximum time for which a silent call will remain connected is set using the SILENCE command. This is useful were a call may be redirected to voicemail. The silence during recording will cause the system to hang the call. The default silence time is 15s and can be set from 1s to 255s.

**SILENCE** 25. sets the maximum line silence time to 25 seconds

### 4.9 Adding Intercom Call Numbers

The system can call up to all 511 numbers when the input is triggered. To add a call number the following SMS text message is sent to the system by any master number:

**CALLNUM**<space>*number*.

e.g. **callnum 07000000000.**

**N.B. Call numbers can also activate the output—there is no need to ADD the number twice! Numbers are rung in the order they are added!**

### 4.10 Dial Now

If necessary the system can make a call to a number not stored in it's memory at any time. This is achieved using the DIAL command. The call observes the RTIME, CTIME and SILENCE time settings

**DIAL**<space>*number*. make an ad-hoc call to the specified number

e.g. dial 01517283167.

The call will end when the other party hangs up or the CTIME or SILENCE time limit is reached.

## 5 Setup

### 5.1 SIM Keep Alive Text

When using a Pay As You Go (PAYG) SIM card, to avoid SIM card deactivation, the system can periodically send a SMS text message to keep the SIM active. Ensure the SIM card has sufficient credit to make a call or text (even if the call goes unanswered). To setup the Keep Alive Text function the following SMS text message is sent to the system:

**KA**<space>*number,frequency*. enables periodic text message sending

e.g. **KA 07000000000,10.** (text 07000000000 every 10 days)
**KA Off** disables periodic text message sending

Frequency—number of days interval

Most UK networks require the equivalent spend of one one minute call per quarter. It is recommended a text is sent at least once per month (28 days).

### 5.2 Signal Strength Indicator

The display backlight is used to display the result of a command. **The display backlight will flash twice to acknowledge the successful receipt of a command** and will extinguish continuously for 2s to show the instruction has failed. It also extinguishes during any call (valid or invalid) and will slowly cycle on and off when a signal cannot be found (network dependent)

### 2.2 Command Message Format

To operate the system a master GSM phone is used to send SMS text messages to the system telephone number. All message follow a similar format as follows:

COMMAND<space>*action*. *(eg.* Master 07000000000.*)*

The command (see **Section 7**) is always written first followed by a space and the action required. Although not necessary, it is useful to include a full stop immediately after the action as some mobile phones can enter superfluous characters at the end of a message, which can invalidate the message. The message is **not** cAsE sensitive.

### 2.3 Master Number Setup

The system is controlled by the master GSM mobile phone numbers (see **2.2 Number Types**). The system must first be associated with at least one master phone's number before it can be used.

**Using the PIN for Master Setup**

The Master Number can be set up using the PIN. The PIN is the last 5 characters of the IMEI number written on the QUECTEL GSM module sticker/the rear cover of the intercom. The command is sent as follows:

**Master 07000000000,37212.** for module with IMEI 355073034**37212**

Further masters can be added without the PIN by an existing master number—you only use the PIN when the number sending the command is not already in the system memory.

**Using the Jumper and PIN Header for Master Setup**

If the PIN is unknown a 2.54mm jumper connector must be fitted to pins 3 & 4 on HDR1 (see over) as shown in red in Figure 1. Do not connect the jumper to any other pins or damage may result.

The master phone number must then be sent via a SMS text message to the system phone number as follows:

**MASTER**<space>*number*.

For example, if the master telephone number is 07000 000 000:

**MASTER 07000000000.**
Also valid are the following:

**Master 07000000000 and master 07000000000**

The following messages are invalid:

master 07000 000 000. (spaces in the number)
master07000000000 (no space after 'master')

The display will flash two times to indicate the master number has been successfully setup. Calling the intercom's telephone number with the master phone will now activate the relay. Once one master number has been setup further masters (up to 512) can be setup by this and subsequent master phones without the jumper fitted (using the same message).
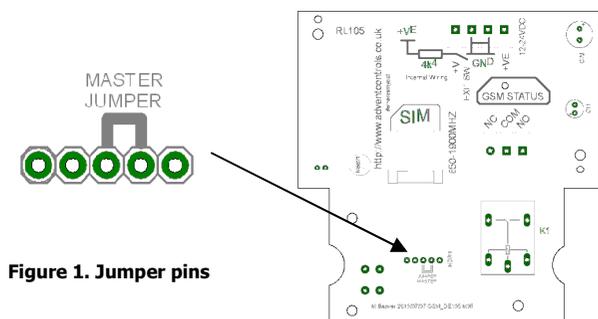
MASTER
JUMPER



**Figure 1. Jumper pins**

### 2.4  Allowing Master Control for all Users

To enable any user to control master commands (such as adding and removing numbers) the MUSER command is sent to the board, by a master number, as follows:

**MUSER** ENABLE        Allows any valid user number to modify settings
**MUSER** DISABLE       Only master numbers can modify settings

By default MUSER is set to disable full access for all users. N.B. Only master numbers can add other master numbers despite this setting

### 2.5      Adding a User Number

Any telephone number of at least 5 digits where caller ID is available is valid. The system only compares the last 8 digits (if present) of any calling number against the numbers stored in memory. Therefore it is not necessary to enter the international dialling code format of the telephone number.

i.e. for 070**00000000** only the characters shown in **BOLD** text are considered

The ADD command is used to add a new telephone number. To add a new number any master phone must send the following SMS text message to the system telephone number:

**add**<space>*number*.   e.g. **Add 07000000000.**

If TEXTRES is enabled the system will respond with the 'Operation Successful' message.

### 2.6      Removing a User Number

The REMOVE command is used to remove an existing telephone number. To remove an existing telephone number any master phone must send the following SMS text message:

**remove**<space>*number*.    e.g. **REMOVE 07000000000.**

### Output and Call Handling

During a call the output is activated by pressing the ∗ key on the telephone keypad. This will activate the relay output (as per RLYTIME and RLYMODE) and instantly disconnect the call.

By default, any user number, call number or master number can activate the output relay by dialling the intercom SIM card telephone number. The default setting is for the intercom to reject the call as soon as the number is read. To switch back to this default mode the following command is sent to the intercom:

### REJECT CALL

If desired the intercom can be set to answer incoming calls if the number is recognised and a conversation can made between the intercom and the calling telephone. In this mode, to activate the relay the ∗ key is pressed. To enter this mode the following message is sent to the intercom:

### CONNECT CALL

If the output must be controlled for a measured period of time the RING mode is selected. In this mode the relay is activated when a recognised number calls the intercom for as long as the caller continues to dial the number. The call is never answered. This is also useful when it is not desirable to reject the call. To enter this mode the RLYMODE command is used as follows:

### RLYMODE RING

### 4.4      Changing the Maximum Ring Time

The maximum time for which the system will attempt dialling before dialling the next number is set using the RTIME command. The default time limit is 60s. The RTIME command is specified in seconds and can be set from 1s to 255s. Most calls will require at least 15s for connection which is included in RTIME.

**RTIME** 45**.**        sets the maximum ring time to 45 seconds

### 4.5      Changing the Maximum Call Time

The maximum time limit for an answered call is set using the CTIME command. The default time limit is 45s. The CTIME command is specified in seconds and can be set from 1s to 255s.

**CTIME** 45.        sets the maximum call time to 45 seconds

### 4.6      Set Speaker Volume

The speaker volume is adjusted using the VOLUME command. The allowable range is 1-9

**VOLUME** 9        These go to 9  http://goo.gl/fhaFzf

When sent with additional time information the relay is activated for however many seconds or minutes specified.

e.g.
| | | |
|---|---|---|
| **OPEN** | activates relay indefinitely |
| **on** | activates relay indefinitely |
| **open** 10. | 10 second activation time (**s** parameter optional) |
| **Open** 250s | 250 second activation time |
| **ON** 1m. | 1 minute activation time |
| **open** 960m. | 16 hour (16 x 60mins) activation time |
| | |
| **CLOSE** | deactivates relay under all conditions |
| **OFF** | deactivates relay under all conditions |

*If the system loses power the relay state is restored when the power is reconnected!*

### 3.8    Exit Switch Enable

The input connection can be used to activate the output relay which is ideal for connection to a secure-side exit switch. It uses the trigger level for the input text message (see INLVL) and activates the relay as per a phone call. To enable the exit switch input the EXIT command is sent to the board as follows:

**EXIT ENABLE**    enables the exit switch input
**Exit disable**    disable the exit switch input

### 4.1    Intercom and Auto-dialler/SMS Sender

The audio intercom can be used to talk to a visitor using the GSM network. The call button on the entry panel triggers dialling of the CALLNUM numbers in the order they are added. If CONNECT is enabled the system can also be called to initiate a call.

Calls are dialled in the order in which they are added. The numbers are dialled sequentially until a call is answered and rejected (hung-up) or a call is answered and the ∗ key is pressed or until all of the numbers have been dialled. To activate the output relay and open a door or gate the call recipient should press and hold the ∗ key on their phone until the call has ended.

The maximum ring time (the time between dialling and call pick up) can be set using the RTIME command.

The maximum call length is set by the CTIME command. If the call is answered by an answering machine and the line goes quiet the system will hang up the call after the time set by the SILENCE command (default 10s) and it will proceed to dial the next number.

### SMS Sender and Auto-dialling

The system is able to send a SMS text message to up to 511 'text numbers' (see section **1.3 Number Types**). It can also call dial the call numbers when the input is triggered. Please go to the Advent Controls blog for further information or refer to the Advent Controls A3.02/F3.08 auto-dialler manual for details. This can be found on the Advent Controls website. ([http://www.adventcontrols.co.uk/Alpha_v3_02_F3_08.pdf](http://www.adventcontrols.co.uk/Alpha_v3_02_F3_08.pdf))

The REMOVE command must be sent for each number in the memory. The user can specify which number type is desired to be removed and only that type will be removed regardless of whether the number is already in the memory in a different form.

For example to remove a Call Number the 'C' character is appended after the word remove as follows:

**REMOVEC** 07574163361.

This will only remove instances of the number 07574163367 that are stored as Call Numbers.

The following shows the characters associated with each number type:

**T**—**T**ext Number
**C**—**C**all Number
**M**—**M**aster Number
**D**—**D**ata Number
None specified—Any number (including User Numbers)

If TEXTRES is enabled the system will respond with the 'Operation Successful' message. If the number is not found the 'Operation Failed' message will be sent by the system.

### 2.7    Viewing the Valid Number List

The system can send a SMS text message containing a complete list of valid user numbers to any master phone.

To receive the list of numbers the LIST command is used. The master phone must send the following SMS text message to the system:

**List**

The response format shows the number type, the channel (if applicable) and the last 8 digits of the stored number followed by a space and the next number and so on…

Number Types:

**T**—**T**ext Number
**C**—**C**all Number
**M**—**M**aster Number
**U**—**U**ser Number
**D**—**D**ata Number

Call Button (where applicable):

**A**—Button **A**
**B**—Button **B**
**M**—**M**ultiple (Both A&B)

The numbers are in the reverse order to the order they were added with the primary master not displayed.

e.g.  TA74163367 CM17283167 D51953899 U17283167 M30666575

07574163367 is a Text Number for Button A
01517283167 is a Call Number for both channels and so on...

### 2.8 Finding a Number in the Memory

When a large number of numbers are stored in the memory using the LIST command can be impractical. To find whether an individual number is stored in the memory the master user sends the following command to the board:

**QUERY**<space>*number*.    Or    **QNUM**<space>*number*

*NB the number should be the full number (not the 8-digit truncated number)*

If the number is present the backlight will flash 4 times and if not in the memory the backlight will light twice for 2 seconds. If TEXTRES is enabled an SMS text message will be sent with the result.

### 2.9 Clearing All Numbers and Settings

The CLEARALL command is used to erase all stored user and master numbers. To erase all numbers the following SMS text message is sent by a master number:

**CLEARALL**

No response is sent by the system to acknowledge the command. This does not affect the customisable input text messages.

### 2.10 Result Acknowledgement Message

The system can be setup to send a SMS text message to acknowledge a command. This acknowledges the result of the last command processed such as adding a new user number. The SIM card in the system must have sufficient credit for sending SMS text messages. To enable/disable the service the following text message is sent by the master number:

**TEXTRES enable**    (or also valid: **TEXTRES e**)
**TEXTRES DISABLE**    (or also valid: **TEXTRES d)**

The result message 'Operation Successful' is sent when the service is enabled

## 3 Relay Operation/Access Control

### 3.1 Enabling Any Number and Disabling Open-on-Call

The system can be setup to allow any number to operate the relay output. To enable any call the CALL command is used with the action ANY and is sent by the master phone in the following format:

**Call any**

To return the system to operate from only valid user numbers the LIST action is sent with the CALL command as follows:

**call list**

To disable activation of the relay by calling the following command is sent to the board (the relay can still be activated by SMS text; see OPEN/ON & CLOSE/OFF commands):

If TEXTRES is enabled the system will respond with the 'Operation Successful' message.

### 3.4 Input/Output Status Message

To determine the current status of the input terminal and output relay the STATUS command is sent to the system telephone number by a master phone as follows:

**STATUS**

The system will respond with a SMS text message as follows:

RELAY OPEN INPUT LOW      relay not activated/input closed (GND)
RELAY CLOSED INPUT HIGH   relay activated/input open (+V)

### 3.5 Relay Activation Mode

When a valid call is received the relay can be set to activate for a set period of time (set by the RLYTIME command), to activate whilst the caller is ringing or to toggle between states on each call. By default the relay mode is set for timed (pulsed) activation. To switch to toggle mode the following message is sent to the system by the master number:

**RLYMODE TOGGLE**    enables toggle mode

To activate the relay for however long the caller rings (n.b. turn off voicemail!)
**RLYMODE RING**    relay active whilst phone rings

To revert to timed (pulsed) mode the following message is sent:
**RLYMODE PULSE**    relay Normally Open (NO)

### 3.6 Relay Activation Time

The RLYTIME command is used to adjust the time the relay is active following a call when RLYMODE is set to PULSE. By default the relay time is set to 3s. The time can be set from 1s to 999 seconds or 1 to 999 minutes using this command.

To change the activation time the master number sends a SMS text message as follows:

RLYTIME *seconds*.

e.g.  **rlytime 10.**        1 second activation time
      **rlytime 250s**       250 second activation time
      **Rlytime 1m.**        1 minute activation time
      **RLYTIME 960m.**      16 hour (16 x 60mins) activation time

### 3.7 OPEN/ON & CLOSE/OFF Commands

The OPEN and ON commands are used to activate the relay with a SMS text message. The CLOSE and OFF commands deactivate the relay, whether activated by the OPEN or ON command or a call. When the OPEN command is sent without any additional instructions the relay is activated indefinitely. When sent with a value and **m**(inutes) or **s**(econds) parameter the relay activates for a set period of time. The maximum number length is three characters therefore the timer is limited to 999 seconds or 999 minutes. If the m or s parameter is not sent then the timer value is read as the number of seconds.
The ON and OFF commands are identical to the OPEN and CLOSE commands respectively and can be used interchangeably.