2T-Technology

Mobile Entry

Installer Manual

Intercom

Mobile Entry Unit

220 / 240 Volts AC

PSU

12 Volts DC

Contacts

Gate Controller

Infra Red Receiver

<<<<<<
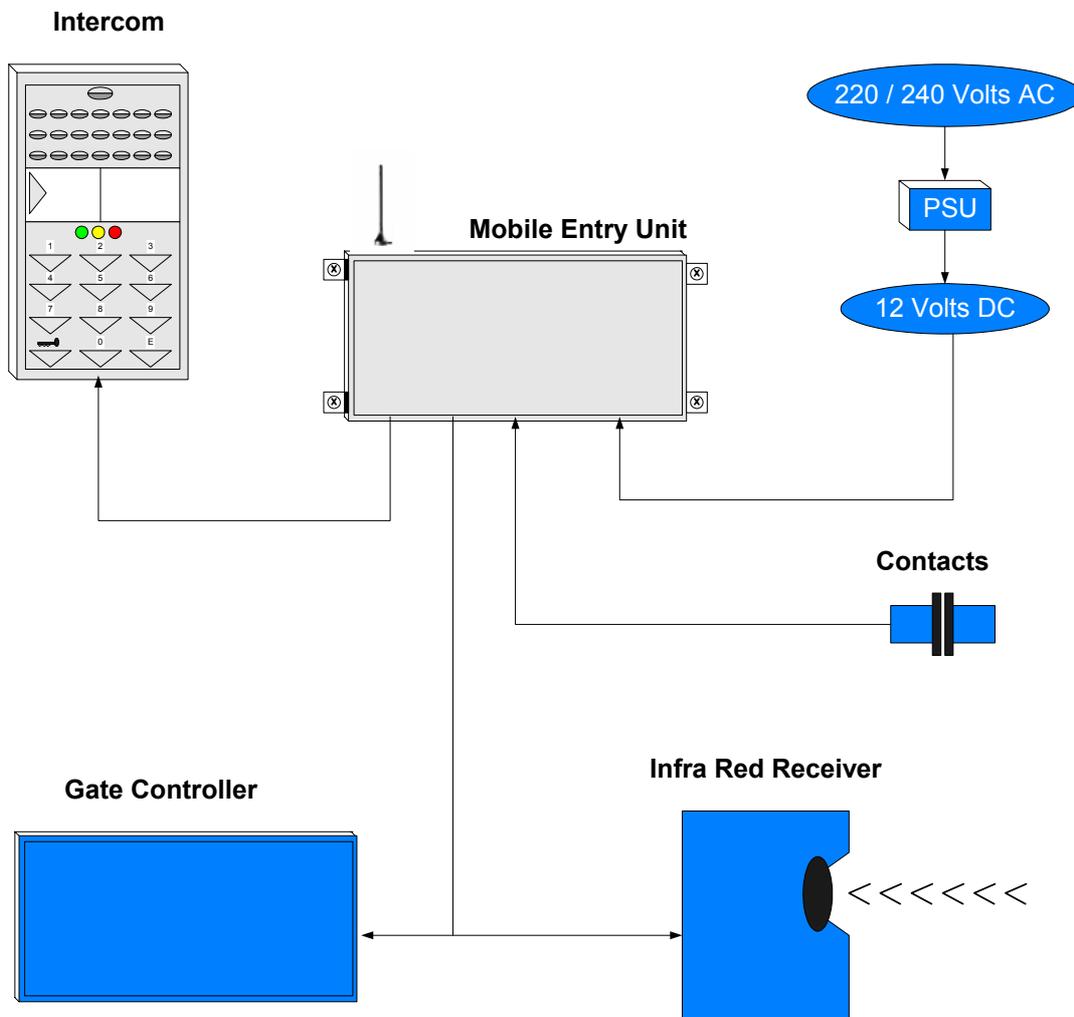
Gate Telephone Number:

Gate Unit Code: _____

Quick-Start Guide

1. Un-programme the PIN number from the SIM card.

2. Insert The SIM in the Gate Unit. Note the telephone number of the SIM. You will need this for programming the Gate Unit.

3. Wire up the gate unit to the Gate Controller, Intercom, Infrared receiver, Transformer and Gate Contacts (if required).

4. Connect up the transformer to the mains supply. Ensure the power light comes on, on the gate unit.

5. Give the Gate Unit about 2 minutes to register when first turned on. When the Signal Strength light is on constantly or flashing, the Gate Unit is ready for programming.

6. Programme the first Open Number into the Gate Unit.

Send this text.	Expect This TxT Response
*Ensure No Spaces in Tel Number	
open 1 08????????	Open number 08???????? Programmed

❑ Further Open Numbers can be programmed in the same fashion.
❑ Record the numbers programmed into the table given.

7. Now call the Gate Unit from the telephone number programmed in the last step. The gate unit should close its pulse switch and this should activate the Gate Controller to open the gate.

8. Now program the phone list, with the phone numbers that the Gate Unit will dial once the intercom button has been pressed.

Send this text.	Expect This TxT Response
phone 1 01???????	Phone 1 01??????? Programmed

   Remember to put the full telephone number into the device including area or country codes, that you would have to use if calling that number from any mobile phone.

❑ 2 more numbers can be programmed into the phone list of the Gate Unit.

9 Now we can place a test call, from the intercom, to the first phone number we have programmed. Watch the lights on the Gate Unit during this sequence to see when the switches are operating.

(a) Press the intercom button.

(a) When the first phone number dialled rings, answer the phone. You will hear the gate calling.

(a) Press *** 1** on the phone keypad. This will open the audio channel between the gate and the phone.

(a) If you do not wish to open the gate for the caller, press the **#** button on the phone keypad. This will guarantee that no further numbers are dialled.

(a) Pressing *** 2** will cause the Pulse Switch to close. When connected to the Gate Controller this will cause the gate to open.

(a) Pressing *** 3** will cause the Pulse Switch to close followed by the Delay Switch opening. When connected to the Gate Controller this will cause the gate to open and then cause the gate to remain open as the Delay Switch will break the Infra Red beam just as if an obstacle was blocking the beam.

(a) Pressing *** 4** will cause the Delay Switch to return to its normal position and when connected to the Gate Controller this will cause the gate to close.

10. Once this test functions properly, and you have completed all wiring to all devices you MUST close the openings on all cable glands entering the box of the Gate Unit.

11. If it is required to know whether the gate is open or closed then connect a set of contacts to the Gate Unit. Connect the switch of the contacts to IP/1 and IP/2 as shown on the wiring diagram.

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FEATURES

❑ Control security gates, using your mobile phone, as you drive towards them.

❑ Allow access to as many others, as required, by programming their phone number into the open phone list. There is no call charge for this type of call because the Gate Unit drops the call once it recognises the number.

❑ Answer the gate from any phone in the house. Excellent audio quality.

❑ Link your gate intercom to your house without wires.

❑ Control security gates when in work or away on business or holidays.

❑ Talk to someone calling at your gate when in work or away from home.

❑ Allow access to the gardener, Oil refill truck, plumber etc., when away from phone.

❑ Set the gate permanently open, if required by caller. Receive a warning if the gate is left open.

❑ Remotely determine whether the gate is open or closed.

❑ Receive a warning, if using pre-pay SIM card, that credit is running low.

❑ Simple to configure using SMS texts.

❑ Wire a standard access control keypad in parallel with the gate access controller. Or use an intercom with an integrated keypad.

INTRODUCTION

The Mobile Entry Gate Access Controller device (Gate Unit) allows for the remote control of a gate using a mobile phone. The only wires required for the Gate Unit are mains power lines. Once someone approaching the gate (whose mobile number has been programmed into the device) places a call to the device the device will cause the gates to open. A large number of phone numbers, that can have access through the gates, can be programmed into the device.

When an Intercom is fitted to the system the Gate Unit calls one of three phone numbers in sequence. The first number would most probably be the homeowner's house phone. Second and third numbers will likely be the owner's mobile numbers.

The Gate Unit contains two telephone lists as follows:

(a) Phone List.

This list is 3 telephone numbers. These are the numbers that the
Gate Unit calls in sequence once the intercom button is pressed.

(b) **Open List.**
   This list can have a very large number of numbers programmed.
   These are the numbers that can open the gate remotely by simply
   placing a call

   The Gate Unit uses technology similar to that used in mobile
phones. This is something to keep in mind when setting up the de-
vice. For instance programming a number into it will require that
you enter the number as you would have to do, if calling that num-
ber from a mobile phone. Any area or country codes must be used.

Basic Installation Steps

1. Un-programme the PIN number from the SIM card.
   SIM Cards have a PIN that the phone user must enter when turning
on their phone. This is stored in the SIM and must be removed for
the Gate Unit to work. This is done by placing the SIM in any mo-
bile phone and going to the 'Settings', then 'Security' menus.
Then Turn Off the PIN Code request.

**2. Insert the SIM in the Gate Unit. Note the telephone number of
the SIM. You will need this for programming the Gate Unit.**

**3. Wire the Gate Unit to the Intercom and Transformer as shown on
the top part of the wiring diagram. Later we will wire to the gate
controller and the Infrared receiver.**

4. Mount the antenna as high as possible for this installation.

**5. Connect the Transformer 240V side to the mains. The Power Light
should come on, on the Gate Unit.**

**6. Give the Gate Unit about 2 minutes to register when first
turned on. When the Signal Strength light is on constantly or
flashing the unit has registered on the network.**

7. Programme the first Open Number into the Gate Unit.

Programme the first Open Number into the Gate Unit.

Send this text.	Expect This TxT Response

*Ensure No Spaces
  in Tel Number

open 1
08????????

Open number
08????????
Programmed

❑ Further Open Numbers can be programmed in the same fashion.
❑ Record the numbers programmed into the table given at the
   end of this manual.

8. Now call the Gate Unit from the telephone number programmed in the last step.
The device should recognise the calling number as one that has been programmed into it. It will drop the call and switch on the Pulse Switch. The light on the front of the Gate Unit at the Pulse Switch will come on. (See the wiring diagram, to identify the light at the pulse switch.)

If the Gate Unit does not recognise the number programmed, make sure that this phone sends its caller ID when making a call. In Nokia phones this is turned on in menu item 'Settings', 'Call', 'Send my caller ID'.

9. The time that the Pulse Switch is closed for is set in the factory to 3 seconds. This time can be extended and can be set at anything from 1 to 60 seconds. This may be necessary if the gate controller requires a longer pulse.

Set the Pulse Switch to close for 10 Seconds.

Send this text.	Expect This TxT Response

Pulse Time 10

Pulse Time 10

If the Gate Unit functions properly on the last test we are ready to proceed. If it did not function properly then go back through the installation steps to confirm correct set up. If necessary refer to the end of this manual at the section "Fixing Problems".

Intercom Installation Steps

10. If you have reached this point, it is time to wire the Gate Unit to the Gate Controller (that operates the gates) and the Infrared receiver. . (See the wiring diagram.)

11. The Gate Unit uses the same technology as a mobile phone. When any mobile phone is near audio amplifiers, speakers or microphones then radiation from the mobile phone is picked up by the audio equipment.

❏ So when installing the system keep the Gate unit and its antenna as far away from the intercom as possible. Normally the gate unit will be on one side of a pillar with the intercom on the other, this is ideal.
❏ Also keep the antenna of the Gate Unit as far away from the Gate Unit as possible. Run the antenna up the wall of the pillar where the gate unit is mounted.

12. Now program the phone list, with the phone numbers that the Gate Unit will dial once the intercom button has been pressed.

Program the first number the unit will call when the intercom button is pressed.

Send this text.   Expect This TxT Response

| phone 1
01??????? | Phone 1
01???????
Programmed |

Remember to put the full telephone number into the device including area or country codes, that you would have to use if calling that number from any mobile phone.

Program the Second number as follows:

Send this text.   Expect This TxT Response

| phone 2
08???????? | Phone 2
08????????
Programmed |

And Finally (if required) program the third number as follows:

Send this text.   Expect This TxT Response

| phone 3
08???????? | Phone 3
08????????
Programmed |

❏ Record the numbers programmed into the table given at the end of this manual.
❏ Numbers programmed as phone numbers that the intercom will call are also automatically added to the open telephone list so that these numbers will automatically open the gate if they ring into the Gate Unit.

13 Now we can place a test call, from the intercom, to the first phone number we have programmed. Watch the lights on the Gate Unit during this sequence to see when the switches are operating.

(a) Press the intercom button.

(b) When the first phone number dialed rings, answer the phone. You will hear the gate calling.

(c) Press **✱ 1** on the phone keypad. This will open the audio channel between the gate and the phone.

(d) If you do not wish to open the gate for the caller, press the **#** button on the phone keypad. This will guarantee that no further numbers are dialed.

(e) Pressing **✱ 2** will cause the Pulse Switch to close. When connected to the Gate Controller this will cause the gate to open.

(f) Pressing **✱ 3** will cause the Pulse Switch to close followed by the Delay Switch opening. When connected to the Gate Controller this will cause the gate to open and then cause the gate to remain open as the Delay Switch will break the Infra Red beam just as if an obstacle was blocking the beam.

(g) Pressing **✱ 4** will cause the Delay Switch to return to its normal position and when connected to the Gate Controller this will cause the gate to close.

(h) Calling a gate left open by sending **✱ 3** will close the gate.

14 Once this test functions properly, and you have completed all wiring to all devices you MUST close the openings on all cable glands entering the box of the Gate Unit.
This step ensures that the Gate Unit is waterproof and can withstand all environmental conditions. Even if you haven't connected a cable to a part of the system you must ensure that there is a cable running through the cable gland so that the Gate Unit is sealed when the gland is closed.

Audio Level.

Test the audio level between the intercom and a remote phone. The house phone may be the best one to test to. If the audio level is low at either end then this can be adjusted using the Speaker and microphone levels at the intercom. (adjustable by removing the front cover of the intercom itself.) Increasing the microphone level at the intercom will increase the audio level at the house phone. Increasing the speaker level at the intercom will increase the audio volume at the intercom. **Be careful however, as increasing these levels too much may cause a large echo at the house phone.**

Gate Voice ON – Gate Voice OFF

Normal operation of the Gate Unit is for the person pressing the intercom button NOT to be able to hear phones ringing while he is waiting. This offers security against the caller hearing an answering machine and realising that the house is not occupied. This is good security. However if required this operation can be changed by sending the following text to the Gate Unit.

Send this text.   Receive This TxT Response

Gate voice ON

Gate voice ON

Now the caller will hear the complete sequence of calling telephones from the Gate Unit and the person answering the call from the intercom can have an immediate conversation with the caller

without having to press $*$ 1

Delay Switch – Delay Time

The Delay switch opens 20 seconds after the Pulse switch closes. The Delay switch breaks the infrared circuit and holds the gate open 20 seconds after $*$ **3 is pressed on the remote phone. If the position where the gates are held open needs to be changed then the time when the Delay Switch is opened needs to change. For example if you want the Gate to be held open later in its opening sequence you can change the Delay Time to 25 seconds as follows.**

Send this text.   Receive This TxT Response

Delay Time 25

Delay time 25 Seconds

Installation of Gate Contact

15. If it is required to know whether the gate is open or closed then connect a set of contacts to the Gate Unit. Connect the switch of the contacts to IP/1 and IP/2 as shown on the wiring diagram below.
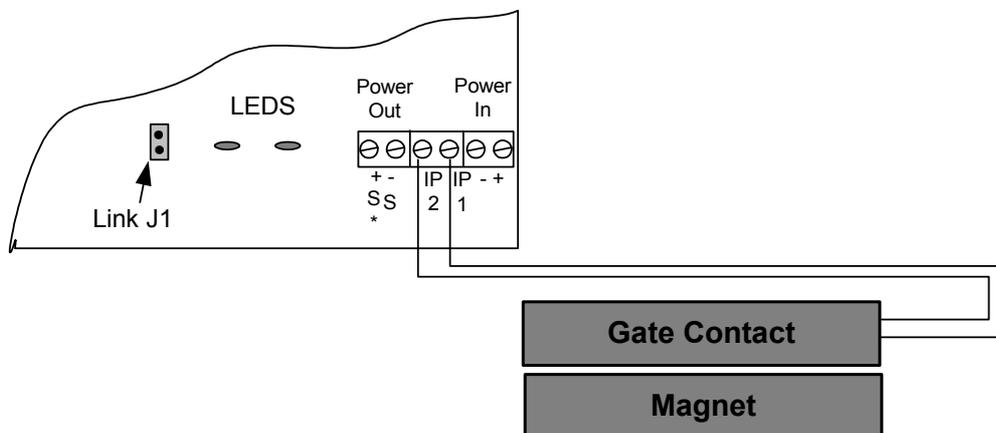
Figure 1: Wiring diagram for contacts to track Gate Open or Closed status.

❑ The contacts can be from a relay driven by the gate controller, or a magnetic contact (shown above), or a limit switch fitted to the gate.
❑ When the gates are closed the contacts are closed, when the gates are open the contacts are open.
❑ When the contacts are fitted and the Link is on J1 the Gate Unit will issue a Gate Alert if the gate is open for longer than one hour.
❑ If it is not necessary to use the gate contact then it can be left out and bypassed by removing the link from J1 which is on the front of the Gate Unit PCB.

To Check whether the Gate is Open or Closed.

Send this text.   First Receive TxT Response.

Gate Status

Gate txt received

Then Receive the Gate status Response.

Gate Status Closed
OR
Gate Status Open

❑ If the link is not on J1 and the user asks for gate status then the Gate Unit will respond with "Gate Status Unknown"
❑ If the link is on J1 but you have not fitted or connected the contacts the Gate Unit will always respond with Gate Status Open.

Installation For Mobile Network

16. The Gate Unit can be used with bill pay or pre pay SIM cards.
For pre pay cards the ability for the user to get an indication when credit is falling low is useful and allows the user to add credit when required. Confident that he can keep the gate unit topped up with credit the user will be happy to use a pre pay SIM card.

The system is factory configured for a Vodafone SIM. To use a different network requires that you program a different Credit code.

Set the Credit Code
For example to set the credit code for O2 in Ireland.

Send this text.   Receive This TxT Response

| Credit Code *100# | | Credit Number set. |

There are different codes for different networks. This table gives a list of those that can be used.

Network	Ireland	UK
Vodafone	*174#	*#1345#
O2	*100#	*#10#
Meteor	*#100#	
Orange(UK only)		Orange not currently giving credit. (Use a bill pay SIM)

Turn Off The Credit Warnings.
Should the User switch to a Bill-Pay SIM or if credit monitoring is no longer required, it can be turned off as follows.

Send this text.   Receive This TxT Response

| Credit Alarm Off | | Credit Alarm Off |

To Check the Remaining Credit on a SIM.
Send this text.   Receive This TxT Response

| Gate Credit | | Credit = XX.XX |

Advanced Installation Options.

17. If required the Gate Unit can be programmed with a Control Phone. If programmed, this is the telephone number that Credit Low Warnings will be sent to. Also, if this number is programmed, the warning that "Your gate is open", if the gate is open for more than one hour, will be sent to this telephone number.

❑ The telephone number for the Control Phone must be a mobile number.
❑ If a Control Phone is not set then the system simply picks the first mobile in the phone list to send these warning messages to. As the first mobile in the list is normally that of the homeowner most installations will not require a control phone number programmed.

To Set a Control Phone.
Send this text.　　　　　Receive This TxT Response

Control Phone 08????????	Control Phone number 08???????? Programmed

To Check the control phone programmed:
Send this text.　　　　　Receive This TxT Response

Send Control Phone	Control Phone: 08????????　OR Control Phone Not Set

18. If required in the future you may need to check phone numbers programmed in the phone list or the open list.

To Check Numbers in the Phone List.
For example to check what number is programmed into the first phone number in the list.
Send this text.　　　　　Receive This TxT Response

Send Phone 1	Phone 1: 08????????

To Check numbers in the Open List.
For example to check what number is programmed into the first open number in the list.
Send this text.　　　　　Receive This TxT Response

Send open 1	Open 1: 08????????

19. If required in the future you may need to remove phone numbers programmed in the phone list or the open list.

To Remove Numbers in the Phone List or the Open list.

For example to remove a number that is programmed into either the phone list or the open list.

Send this text.   Receive This TxT Response

| Remove 08???????? |

| Phone Removed OR Number not found. |

- If a number is in both the Phone List and the Open List then it will have to be removed twice with the command given above. It is only removed from the Gate Unit once for each of these commands sent.

20 It is possible to reset the unit back to factory settings.

ENGINEER RESET – Return to Factory Settings.

*Warning: Pulse Time, Delay Time, Credit code, credit alarm and other factory settings will revert to their factory settings.

Send this text.   Receive This TxT Response

| Default |

| Restored to Factory Settings. |

ENGINEER RESET – Remove all Phone Numbers from the SIM.

*Warning: This command will clear all programmed telephone numbers from the Open and Phone lists.
*Warning: This command can take up to 3 minutes to complete. Do not send any other commands to the Gate Unit until this command completes.

Send this text.   Receive This TxT Response

| Default SIM |

| SIM Cleared |

Options for Security Settings

21 If extra security is required when using the Gate Unit it is possible to enable a requirement for a security code when configuring the unit.

When the security code is on, then all text messages sent to the Gate Unit must be followed by the four-digit security code for this specific Gate Unit. The four-digit gate code is written on the front of this manual.

The security code is OFF by default when the Gate Unit leaves the factory. It can be turned on as follows:

To Turn on the Requirement for a Security Code.

Send this text. Receive This TxT Response

Security Code

| Security Code ON # # # # |

| Security Code ON |

An example of programming an Open phone number into the Gate Unit when the security code is ON is given next.

Program an Open number with security code ON.

Send this text.   Expect This TxT Response

Security Code

| open 08???????? #### | | Open number 08???????? Programmed |

To Turn off the Requirement for a Security Code.

Send this text.   Receive This TxT Response

| Security Code OFF #### | | Security Code OFF |

To check whether the Security Code is On or Off.

Send this text.   Receive This TxT Response

| Send Code Status | | Security Code ON OR Security Code OFF |

User Commands.

There are a number of commands that the user will need to use to operate the Gate Unit. These instructions all start with the word Gate.

To Check the Remaining Credit on a SIM.

Send this text.   Receive This TxT Response

| Gate Credit | | Credit = XX.XX |

To Close an Open Gate.

Send this text.   Receive This TxT Response

| Gate Close | | Gate Status Closed |

To Open a closed Gate.

Send this text.   Receive This TxT Response

| Gate Open | | Gate Status Open |

To LOCK the gate so that it can not be opened by incoming calls.
The user may require this if leaving this location for some time.

Send this text.   Receive This TxT Response

| Gate Lock ON | Gate Lock ON |

To UNLOCK the gate so that it can again be opened by incoming calls.
At a later stage the user may require to enable the gate once more
for control by mobile phones.

Send this text.   Receive This TxT Response

| Gate Lock OFF | Gate Lock OFF |

If the Jumper J1 is fitted and contacts connected to IP/1 and IP/2.

To Check whether the Gate is Open or Closed.

Send this text.   First receive this TxT Response

| Gate Status | Gate txt received |

Then   Receive this Gate
status Response.

Gate Status Closed
OR
Gate Status Open

Fixing Problems.

Q1. I am sending a text messages to the Gate Unit but I'm not getting any response.

Check the following:

1. Is the PIN removed from the SIM Card? Put the SIM card into any mobile phone. When the mobile is powered up the phone should not look for a PIN if it has been disabled. If the mobile looks for a PIN then you must turn off the PIN request.

2. Is the Signal Strength LED flashing or on constantly? If it is OFF then either the device is not registered OR there is not enough signal strength for the device to work.

3. Move the position of the antenna to obtain a stronger signal level. On occasions you will find that some operators have no signal strength in certain location while another will have good signal strength. This will require changing the SIM to one from an operator who has good coverage at this location.

Q2. I am sending a text message to the gate but I'm getting the following response.

Command Error

Check the following:

1. Check the spelling of the txt message sent. Quite often this response comes from a command which is almost correct but is spelt wrong.

2. Has the requirement for a security code been turned ON? If a security code is required then it must be added to the end of the text message being sent.

Q3. I am sending a text message to the gate but I'm getting the following response.

Invalid Command

Check the following:

1. Check the spelling of the txt message sent. Quite often this message can come from wrong spelling.

2. Check the details of the command being sent against the details in this manual.

Q4. There is a large echo at the house or mobile phone when a conversation is ongoing from the intercom.

This can be caused by two factors.

1. Occasionally due to poor signal levels this can happen on any mobile phone conversation. You may find that it is not present on further calls from the intercom.

2 If the microphone level adjustment on the intercom (adjustable by removing the front cover of the intercom itself) is turned too far to increase the audio level at the house phone or a mobile then this can lead to echo. Turn down the microphone level at the intercom.

Q5. Some numbers that I have programmed into the phone list work, but others do not.

Check the following:

1 You must always program the full telephone number into the device. So if there are area codes that you would need to use if you were dialing this number from a mobile phone then you must program this into the device for this number.

2 Call the number that is causing you a problem from your own mobile phone. Use the number exactly as you have programmed it into the gate unit. Confirm that you can call it without a problem.

3 When programming telephone numbers into the device do not leave a gap between an area code and the number.

4 Check the number that is not working by getting the device to send you the number in the location you programmed it. Use the "Send Open X" OR "Send Phone X" commands to get the number. Confirm that the returned number is correct.

Q6. "Network Busy" OR "Person Unavailable"
    On occasion the network will be busy or will decide not to place your call to the gate unit for some reason.

Check the following:
    1. Make sure the Signal Strength LED is flashing or always on.

Solution
    Normally this problem can be resolved by simply placing the call again. The gate unit will respond without a problem.
    Should the network insist that the call can not be placed then the simplest solution is to send a text to the gate. Send "Gate Open" to open the gate and "Gate close" to close the gate. The device will send you a text response if these commands have been received.

REGISTER OF TELEPHONE NUMBERS PROGRAMMED INTO THE GATE UNIT.

Phone 1	
Phone 2	
Phone 3	
OPEN 1	
OPEN 2	
OPEN 3	
OPEN 4	
OPEN 5	
OPEN 6	
OPEN 7	
OPEN 8	
OPEN 9	
OPEN 10	
OPEN 11	
OPEN 12	
OPEN 13	
OPEN 14	
OPEN 15	
OPEN 16	
OPEN 17	
OPEN 18	
OPEN 19	
OPEN 20	
OPEN 21	
OPEN 22	
OPEN 23	
OPEN 24	
Control Phone	

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