

2T-Technology

Voyager 4G - 2Relay – 200 User



Installer Manual

Use the camera on your Phone to scan the QR code below to get the Installer App for Android or iPhone



← iPhone Installer App

Android Installer App →



Contents

Installation Steps.....	3
Wiring Diagram for 4G-2R GSM Device	4
For 4G Operation: Setting the APN	7
Setting into 2G mode.....	7
Getting The Installer Setup App.....	7
Starting with The App	9
Setting Call In Phone Numbers. 10 at a time	10
Setting Call In Phone Numbers. 1 at a time	11
Setting Door Mode	12
Diagnostics	13
Options for Security Settings.....	15
Program the Control Phone.	15
Keeping a PAYG SIM on the GSM Network	16
Trouble Shooting Guide	17

Installation Steps

1. If there is a SIM installed in the GSM device skip to step 3.

2. If there is no SIM installed then you will have to

A) Obtain a SIM with at least €10 or £10 credit.

B) When obtaining the SIM ask that voice mail is turned off.

C) Vodafone PAYG SIM cards don't have a PIN number on the SIM.

But some other operators still put a security PIN on their SIM cards. This must be removed before using the SIM in the GSM device.

D) Place the SIM into the SIM card slot on the GSM device. See the wiring diagram on the next page, to see how the SIM is inserted.

3. Wire up the GSM device as shown on the wiring diagram (see the next page).

The GSM device can be powered by +12V to +24V DC or +12V to +24V AC.

- The Power Supply must be capable of supplying a minimum of 1.0 Amp to the GSM device.
- Using AC or DC Voltage from a control panel should work well once the voltage is in the 12V to 24V range and is capable of supplying at least 1Amp
- Please do not use voltage sources specified at 100mA or 500mA or anything less than 1 Amp.

4. You must use the antenna supplied. It has been matched to the GSM unit.

5. Please place the power supply within a meter or two of the device. Long runs of narrow cable will cause problems.

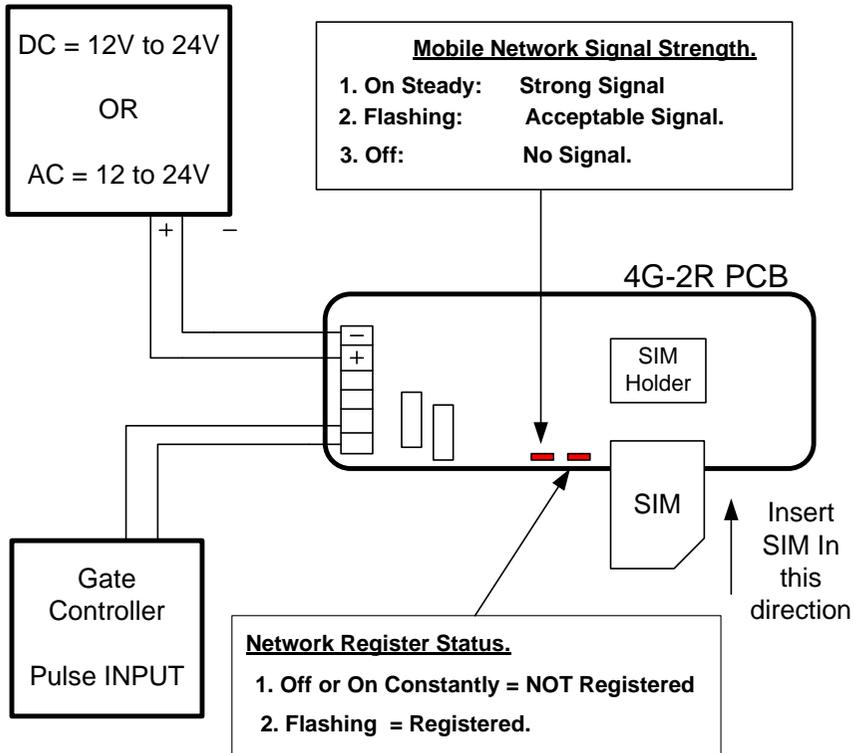
For longer runs of power cable between the power supply and the device, please follow these requirements:

Up to 2 meters - Use minimum 0.5mm^2 (20 gauge)

Up to 4 meters - Use minimum 0.75mm^2 (18 gauge)

Up to 8 meters - Use minimum 1.0mm^2 (16 gauge)

Wiring Diagram for 4G-2R GSM Device



6. Apply power to the GSM unit.

Initially the Register light will turn on constantly but it will then start to flash to show it has registered on the network. It may flash every 3 seconds or even faster at two times a second.

7. Give the 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. If the signal strength light fails to light at all you may have to **1) change the position of the antenna to pick up a GSM signal, 2) Change the SIM to get better Signal Levels on a different Network 3) Contact your supplier for a High Gain Antenna.**

8. Set the Control Phone

Setting the control phone is important to allow the principal user to receive important messages and Top up reminders from the GSM device.

Send this text.

Control phone
xxxxxxxxxxx

Receive This TxT Response

Control phone
xxxxxxxxxxxxx
programmed.

9. Check Reception levels

Initial installation is now complete. Use the SMS text command below to confirm signal level is acceptable for the GSM device.

Send this text.

Diag Levels

Receive This Text Response

See table for response explanation

Example Response	Meaning
VME+4G-2R	VME+ = Voyager Mobile Entry
57 -200	SW version 5.7 200 user model
Signal Level XX	The Current Signal Level <u>For 2G operation:</u> this number needs to be 10 or higher. <u>For 4G Operation:</u> this number needs to be 15 or higher.
Mode is XG	Current mode of operation 2G = 2G Mode 4G = 4G Mode

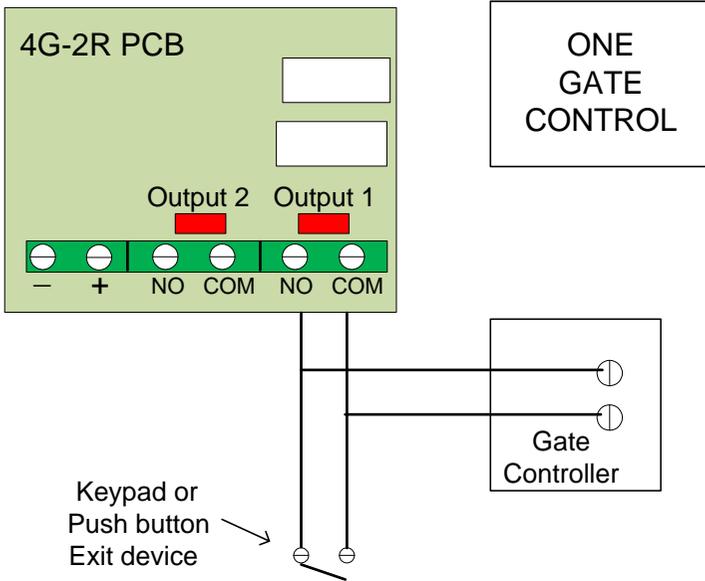
10. Test Operation - Place a Telephone Call to the Device.

The GSM unit defaults to open access so with no programmed Telephone numbers any caller can open the gate.

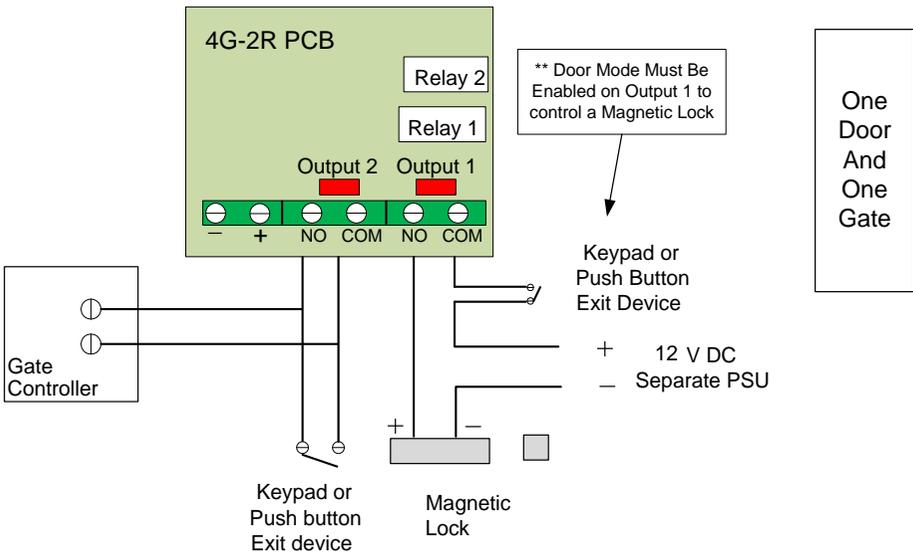
Call the GSM unit from your mobile. The GSM device sees the incoming call and hangs up the call. The GSM unit will pulse Output 1. The LED for Output 1 will come on for 3 seconds. This is a no cost call.

The diagrams on the following pages give three example control systems.

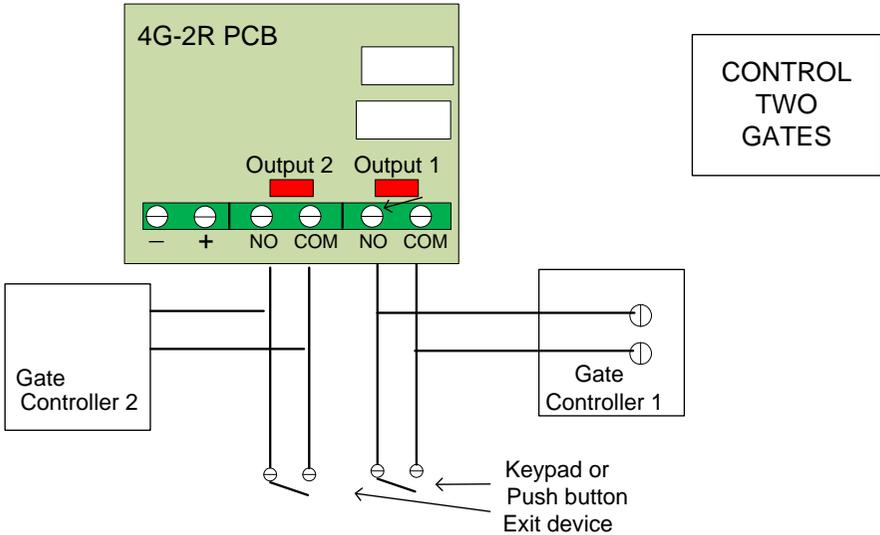
Wiring Diagram For Controlling One Gate



Wiring Diagram For Controlling One Door and one Gate



Wiring Diagram For Controlling Two Gates



For 4G Operation: Setting the APN

To Operate on 4G you will need a SIM that is capable of 4G VOLTE operation. It must have data capability. Using 4G mode will incur SIM Data charges from your network operator.

Send this text.

APN XXX.YYYYYY.COM

The Device can not create a response to this command

For Example APN live.vodafone.com

You will need to obtain the APN code from your network provider. Google Vodafone APN or O2 APN etc.

Setting into 2G mode

This GSM device can be set to operate in 2G mode permanently if required.

Send this SMS Text

Switch 2G

Receive this Text

Starting Switch to Requested Band 2G

To Revert to 4G set the GSM device back to Auto use “Switch Auto”

Getting The Installer Setup App



For a download link, for the App,

1) go to our website at

<http://2t-tec.com/download/>

2) On this page go to the heading " **Voyager Mobile Entry Switch 4G**

Voyager Mobile Entry Switch 4G



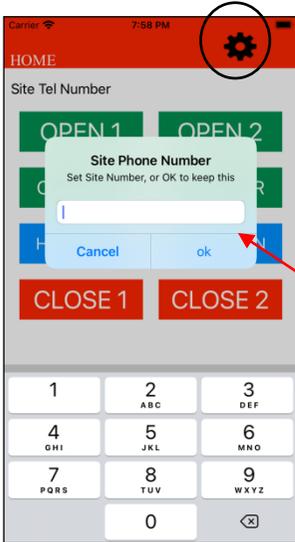
Here you will find links for iPhone and Android Installer and End User Phone Apps.

The Installer App contains most of the programming options for use with the GSM device. Some additional options, where you must send an SMS text to the device, are covered later in this manual. Please use this manual in conjunction with the phone App.

Starting with The App

This section covers some of the main points of interest when using the Phone App for programming the GSM device. We will cover five sections here which should give an overview of what can be done, but there are many other items that can be configured with the Phone App.

First Screen



If you need to change the Phone number that the App is communicating with. Or if this GSM device has a security code enabled. Then configure these settings by pressing the configuration wheel. (** Please note to enable the Security code requires sending an SMS text. See “Options for Security Settings” later in this manual.. Setting it as Enabled in the App just tells the App that the Security code is on, in this device.)

Enter the Phone Number for the GSM device at this site. Then

press ok.



Once the Phone number is entered this first screen can be used for immediate control of the two Outputs.

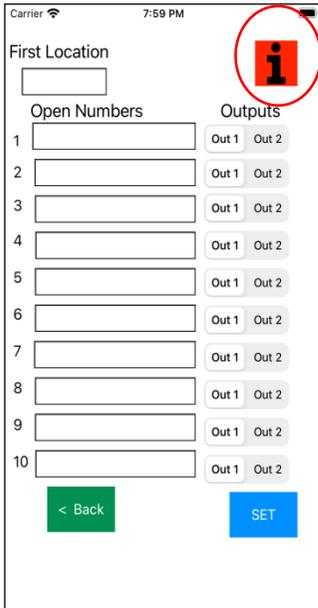
Control Output 1

Control Output 2

Select other screens in the App to configure Phone Numbers, Door Mode and other items.

Setting Call In Phone Numbers. 10 at a time

The GSM device defaults to open access. With no programmed Open Telephone numbers any caller can open the gate or door. The GSM device sees the incoming call and hangs up the call. The GSM device will pulse the Relay. This is a no cost call.



**** Use I button for info on this screen**

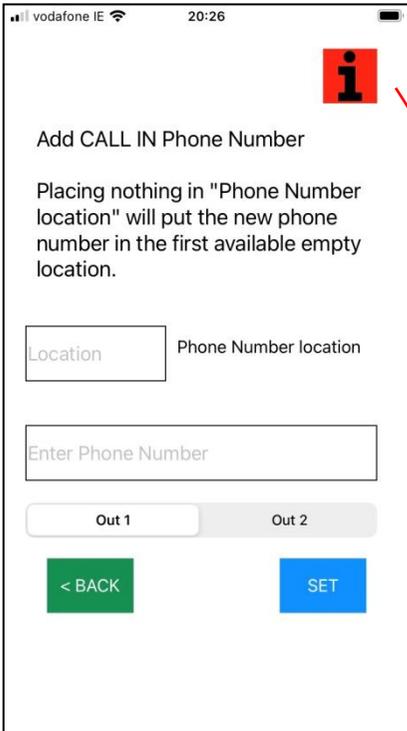
Programming open phone numbers with this screen in the App creates a white list where only programmed, Open phone number have access to open gates or doors.

This screen allows ten phone numbers to be programmed at a time. Use the last 10 digits from any telephone number, ignoring any international codes.

Any programmed Open number can pulse Output 1 or Output 2 (Possibly: Main gate or Side gate)

Setting Call In Phone Numbers. 1 at a time

Open Phone numbers can be programmed one at a time. These can be programmed in a specified location or in the next free location. This screen can be used if you only have a small number of Open Numbers to add, or if you need to replace existing Open Phone Numbers at some time in the future.



Use the "i" Information screens to get useful details on using this programming screen

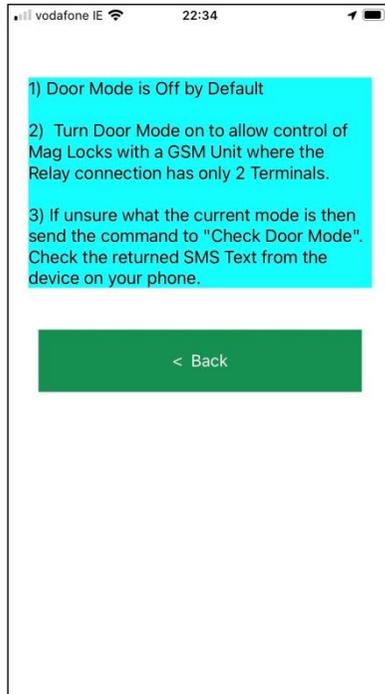


Setting Door Mode

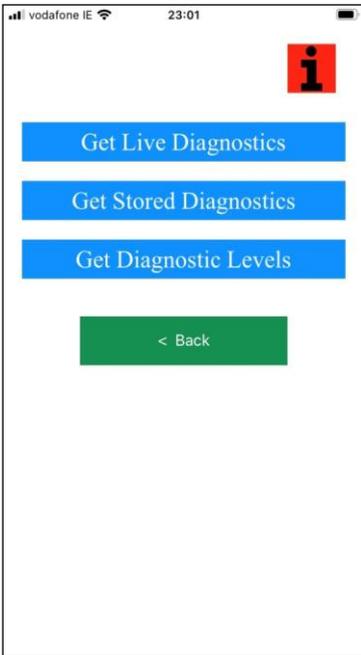
The Voyager 4G -2R is capable of controlling a door through a Magnetic Lock on Output 1. To do this the operation of the relay at the COM and N/O terminals needs to change. To get this to work go to Menu item MORE then go to DOOR MODE and set “Door Mode On”



Use the “i” Information screens to get useful details on using this programming screen



Diagnostics



Diagnosing Problems

When On Site the following tools can be used to diagnose problems with this system.

- 1) LEDs on the PCB (Displaying Registration status and Signal Level)
- 2) Tones and activity from the Phone Network, when calling the device.
- 3) Diagnostic SMS Text Response

When remote from the site the following tools can be used to diagnose problems with this system.

- 1) Phone Network Tones and device activity when calling the device.
- 2) Diagnostic SMS Text commands

The table below lists the SMS Text commands that can be used to diagnose problems with an installed GSM device.

Text to Send	Response received	Result
Test	GSM device Test	Gives basic indication that device is on the network and can respond to SMS text commands.
Diag levels	For Detail description see the Table in section on installation at 9. Check Reception levels	This gives basic details on the device and signal level
Diag stored	This returns the stored values recorded over the last 5 days.	Features such as the Signal Strength, ability to register etc. are recorded over the last 5 days, and returned.
Diag Live	These are the current values, not yet stored.	

For Diag stored and Diag Live, a typical response to these commands is as follows:

VME-IK 1 NV: SS too low: 5 Not checking SS: 0 Cant register: 0 OS Problem: 0 State stuck: 1

The Details of this response is given as follows:

Returned Text	Meaning
VIME-IK 1 NV:	Product Code, Software Version, 1 = 1.0 and NV means non volatile or stored.
SS too low:	Number of times Signal strength below an acceptable threshold.
Not checking SS	Network not giving a response to the request for Signal Level. Device may reset. When was the SIM last topped up?
Cant register:	Network not allowing the SIM or the device to register on its Network. Device will not function. When was the SIM last topped up?
OS Problem	Internal device problem. Device may reset.
State stuck	Internal device problem. Device may reset.
4G->2G	Number of times the unit dropped to 2G on a call.

Options for Security Settings

A security code can be enabled for this device. Once enabled every text message must have the security code at the end of the text command. The code can also be changed to one of your preference.

If you require the security of a security code , it is easier to finish the device configuration first and set the Security code when finished.

Text to Send	Response	Result
Code on 8531	Security Code On	Now every command sent must be followed by the current code.
Code off 8531	Security Code Off	Code is off
Change XXXX YYYY	Security code changed	XXXX = New Security Code YYYY = old security code

Program the Control Phone.

Programming the Control phone is important, particularly for GSM devices that operate in open access mode for their normal operation. Top up messages generated by the GSM device then have a phone number to send this text to. This then uses credit from the SIM and will keep that SIM on the network

Another use of the Control phone is that it can be programmed to allow someone other than the person programmed as phone 1 to receive important messages from the system. This may be necessary should the installer have responsibility for maintaining the system.

Text to Send	Response	Result
Control Phone 08XXXX	Control Phone 08XXX programmed	Control Phone now set.
Send Control Phone	Control Phone 08XXX	This is how we check if control phone is set

Keeping a PAYG SIM on the GSM Network

Network operators have requirements to keep a PAYG SIM on the GSM Network.

- 1) Credit must be used, so the device must place a text or make a telephone call.
- 2) The SIM must be topped up regularly. How regularly depends on the SIM type in use. 30 day bundle deal SIMs are becoming increasingly common and this SIM would need to be topped up once a month.

Therefore to keep a PAYG SIM on the network:

- A) Register your SIM with the Network Operator. Monitor the credit and keep the SIM topped up. Do not assume that because the SIM has credit that it does not need to be topped up.
- B) Set the Control Phone as the principal users phone number.
- C) Set the number of days between the top up messages.

The GSM device will send top up warning messages to the end user on 10 day intervals. This is the message sent by the device.

GSM unit keep SIM on Network.
Please check SIM credit

The frequency of sending this text message can be controlled as follows. So to send this text every 20 days, follow this example.

Send this text.

Credit expiry 20

Receive This TxT Response

Credit expiry every
20 days

Should the customer have a bill pay SIM then to disable this text message send the command "Credit alarm off"

Trouble Shooting Guide

Question: I have powered up the unit. How will I know when it is ready to operate?

Answer:

1. Give the unit about two minutes to start up.
2. The Registered LED will flash every three seconds or faster at two times per second. Also the Signal Strength LED must be flashing, or on constantly.
3. Send the SMS text “Test” to the GSM device. It will respond with “GSM device test Call”

Question: I have powered up the unit. The Registered LED is flashing every second but the signal strength LED is not lighting at all

Answer:

1. With low 4G signal levels the Signal Strength light may not flash but the unit may operate correctly. So check calling the device and sending it a text.
2. This 4G device is capable of dropping back to 2G mode, if 4G signal levels are poor. But this can take up to 30 minutes. So take a break and give the device 30 minutes to adapt.
3. If there continues to be problems with the unit, due to low signal levels then re locate the GSM unit and antenna so that a better signal level is achieved, or change the SIM in the device for another network, so that a better signal level is achieved.
4. If problems persist please contact your supplier to obtain a high gain antenna to solve your signal level problems.

Question: I am sending a text messages to the GSM unit but I’m not getting any response.

Answer: Check the following

1. Confirm the unit has power and is registered on the network by checking the ‘Registered’ LED is flashing.

2. Confirm the SIM in the device has credit and has been topped up in the last 2 months. Having credit on the SIM is not enough. A PAYG SIM must be topped up regularly.
3. Check the Signal strength LED is on constant or flashing. If not signal levels may be poor.
4. Check the spelling and the format of the text, matches that described in this manual. Do not use return to move to the next line when creating a text command.

Question: What are the most common issues or questions for your technical support department?

Answer:

The most common questions we get relating to our GSM devices, in technical support, are:

- a) Questions arising because a Pay As You Go SIM is used and has no credit and is unable to send text responses to text commands.
- b) Questions arising because a Pay As You Go SIM is used and may have credit but has not been topped up within the required top up period of the network operator. This leads to the SIM being de registered from the network with a gradual removal of its capabilities.
- c) The device operates sometimes but not at others. This can be a SIM or a Signal Level Problem.

In all instances above getting a New SIM (straight from the network provider) will likely resolve your problems.

Should you want to program with SMS Text; this table lists SMS Text commands that can be used to configure the GSM device.

Text to Send	Response received	Result
Open 1 xxxxxxxx	Open number xxxxxxx Programmed.	1 is a sample it can be 1.....to..200 xxxxxxxx phone number to be programmed Numbers can be programmed per location. Or just put into any empty location by leaving out the index (1..200)
Remove xxxxxxxx	Open number xxxxxxx removed.	xxxxxxxx phone number to be Removed If a telephone number is stored more than once in the device then this command will only remove the first occurrence it finds. Other occurrences will remain.
Set Y xxxxxxxx xxxxxxxx xxxxxxxx ...	Phone numbers from Y Programmed (Y is first number location so: replaced by 1 or 11 or 22 if programming 10 numbers.....)	A number of telephone numbers can be set. Up to a maximum of ten numbers. The location of the first number to set is given(Y) followed by the phone numbers to set(xxxxxxxxxxxxxxxxx..... <u>Example:</u> Set 1 0852323233 0662424242 will set the first 2 Open Numbers.
Get Y	Open Number 1 872730901 2 872730902 3	10 numbers can be requested from the device, starting with location Y. For example: Get 1 will get the first 10 Open Numbers. Get 40 will get the last 10 Open Numbers.
Gate open	Gate txt received	Open the gate permanently
Gate close	Gate txt received	Close the gate permanently

Gate open XXX	Gate txt received	Open the gate for XXX minutes. This command can work for 5 minutes or many hours such as 8, 12 or 16 hours
Test	GSM Gate unit test Call	This text can confirm the device is on the network and has credit to send an SMS Text response.
Pulse time XX	Pulse time XX	Change Pulse Switch, pulse time to XX seconds. The default is 3 seconds. This should only be used if the Gate Controller requires a different pulse time.
Pulse time 2 XX	Pulse time 2 set to XX	Change Pulse Switch, pulse time to XX seconds for Output 2.
default	Restored to Factory Settings.	Return the GSM device to the factory default settings. This may be useful if the system needs to be returned to the factory default state. Caution: All programmed Telephone numbers will be cleared.
Gate Lock on	Gate Lock on	This function locks access from people ringing into the device.
Gate Lock off	Gate Lock off	This function allows access to people ringing into the device.

2T-Technology



<http://www.2t-tec.com>