WT-009

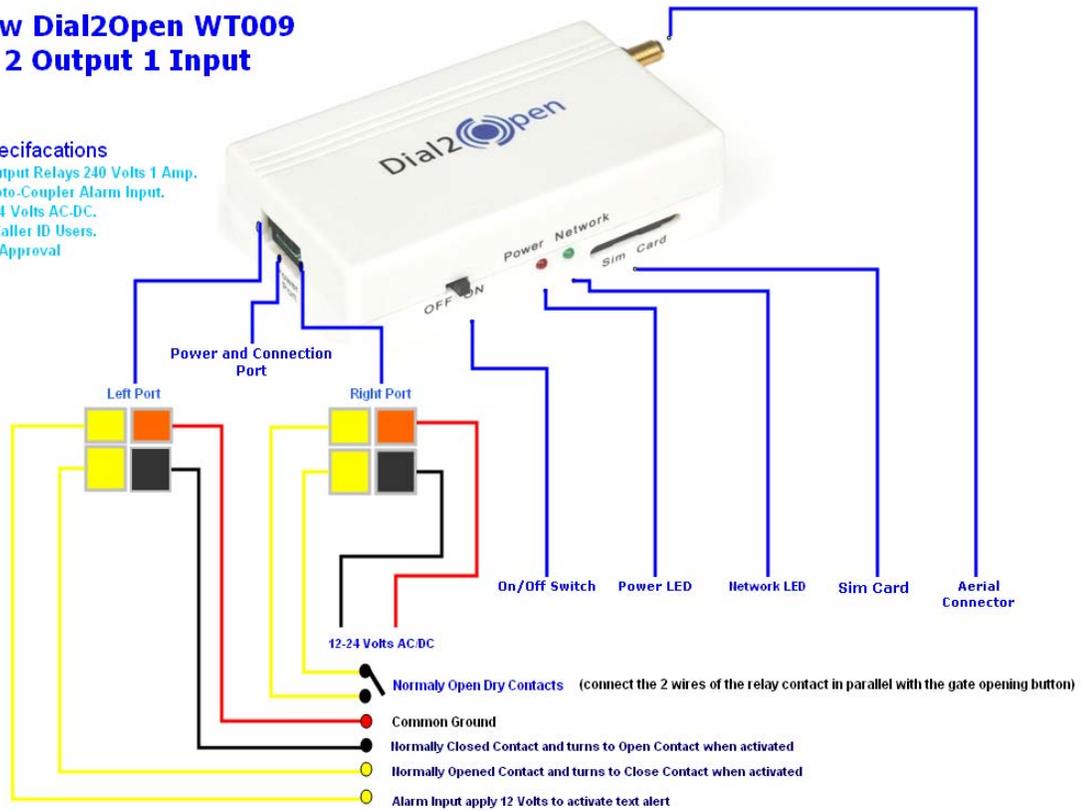**GSM "Dial to Open" Device**

User Manual

Dial2Open

Electronic KIT to convert your gate into a GSM gate

New Dial2Open WT009
2 Output 1 Input

Specifacations
2 Output Relays 240 Volts 1 Amp.
1 Opto-Coupler Alarm Input.
12-24 Volts AC-DC.
64 Caller ID Users.
C.E Approval

Power and Connection Port

Left Port

Right Port

On/Off Switch   Power LED   Network LED   Sim Card   Aerial Connector

12-24 Volts AC/DC

Normaly Open Dry Contacts   (connect the 2 wires of the relay contact in parallel with the gate opening button)

Common Ground

Normally Closed Contact and turns to Open Contact when activated

Normally Opened Contact and turns to Close Contact when activated

Alarm Input apply 12 Volts to activate text alert

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WT-009 "Dial to Open" Device Diagram

Contents

1. Introduction

"Dial to open" Device is an electronic board manufactured by Witura Corporation Sdn Bhd that links to a SIMCOM 300 GSM module, supplied with it.

The purpose of this device is to be installed in parallel of the low voltage opening button of an electric gate to enable it to be opened by means of a GSM phone.

It has a relay whose contact has to be connected in parallel with the button which opens the gate. It has a White List of numbers who are enabled to open the gate, up to 99.

When the "Dial to Open" Device receives a call, it will check to see if the calling number is in the list. If it is in the list it will reject the call (so there will be no charge – at least with today's charging procedures) and click the relay momentarily.

2. Advantages of WT-009 "Dial to Open" Device

1) Safe – nobody can clone your phone as easily as they can do with a standard remote control
2) Flexible – you can add or remove anybody number in a minute with an SMS
3) Cheap – you don't need to buy a remote control for each member of your family
4) Convenient – no matter if you change car, or if you have different gates to open. Your phone will always be with you all the times your remote controls were somewhere else!

3. WT-009 "Dial to Open" Device Operating Instructions

Installation

To install the "Dial to Open" Device you need to connect the 2 wires of the relay contact in parallel with the gate opening button. The relay contact can stand 48V 1A maximum, this is enough for its operation but don't try to switch higher voltages or currents.

You also need to provide the power by means of 12 to 24 VAC or 12 to 24 VDC. The power supply must be able to supply 2.4 Amps. DO NOT USE A GATE CONTROL PANEL AS THE POWER SUPPLY. Don't use telephone battery chargers! Most of them rely on the phone battery and are unable to supply the power needed.

You should install the WT-009 "Dial to Open" Device in a place where there is GSM signal coming from the operator you want to use. Check it with a phone before proceeding with the installation. If you need to install the device in a place with little signal, you may consider using an external antenna that we may supply as an option to be purchased separately with 5m cable.
You should then insert the SIM of the operator you want to use and program in the White List the numbers enabled to open the gate using the command WHL.

Note: You must remove the PIN request from the SIM before inserting it in the unit, otherwise the device will not work. In order to do so, insert the SIM in a phone and disable the PIN request (usually there is a security menu that enables you to do so). If you don't do it, and switch-on the unit more than 3 times you will have to reset the PIN using the PUK!!

4. WT-009 Programming Instructions

You can program the WT-009 with SMS commands using your phone. It is safe to do so because in addition to the fact that other people may not know the number of the SIM inserted in it, we also use a Password that makes it impossible for anybody, who doesn't know it, to access the system by chance.

Remember that commands must be CAPITAL LETTERS. It is PWD **not** pwd, CAP **not** Cap etc.

Don't add spaces or any other character.

Attention: Please program the WT-009 unit systematically begin with programming the white list first.

The 2 SMS commands that you will certainly use in the "Dial to Open" Device are the following:

#PWD: Password

#WHL: White List (add or remove numbers)

You could also use the following, though not necessarily:

#ACM: Access Mode

#CAP: Change password

#GOT: Gate pulse time

#CSQ: Check Signal Quality

Once you issue a command with an SMS, you will receive a confirmation SMS.

#PWD

Password. This command must always come first. Use 6 digits as a password.

The standard default one, when the device comes from the factory, is 123456.

We suggest that you change it, using the #CAP command.

In all the following examples we will use 123456 as an example of password.

#WHL

White List. This is the command that you will use most. It is used to add or remove numbers that are enabled to open the gate into the White List. You can add up to 99 numbers in the list. Every position must be indicated in the command and we advise you to keep a list written somewhere to know which numbers are in and in which position.

- To add a number, the syntax of the command is the following:

  #PWD123456#WHL01=3593334444

Where 01 is the position in the list and 3593334444 is the number enabled.

Please note that it is possible to program up to a maximum of 10 digits for a number. If it has more digits you should use the rightmost ones. For example, if your number is 33446665555 you should program 3446665555.

If your number appears as +393489999888 you should not program the country code (+39). If your number has only 9 digits or less, it is not a problem. The important thing is that you don't exceed 10 digits.

- To check which is the number in a place of the list:

  #PWD123456#WHL01?

  Example of Returned Message
  WHL01:
  3446665555

- To erase a number:

  #PWD123456#WHL01D

  Returned Message
  WHL01-OK

- To erase all number

  #PWD123456#WHL99D

  Returned Message
  DELALL-OK

  *Note: To erase the number stored in place 99 in the list only, you would send the command **#PWD123456#WHL99=0000000000***

#ACM

Access Mode. This command allows you to open only to people that are in the white list or to anybody calling the SIM number.

- **#PWD123456#ACM0 (it is a zero)**

  Warning! With the above command you allow free access to anybody calling!!

  Returned Message

ACM-OFF

- **#PWD123456#ACM2**

  With the above command, you allow only people that are in the **white list** and **administrator list**. This is the standard and recommended option.

  Returned Message
  ACM-ON

#CAP

Change Password. Use this command to change the password with a new one that you will chose for your device (don't forget it or you will have to send the unit back to us to reset it, and this has a cost!)

The #CAP command must be issued 2 times to be sure you don't digit a wrong one. Of course it must be preceded by the old password.

For example, to change the password 123456 into the new password 333444 you need to send the following SMS:

- **#PWD123456#CAP333444#CAP333444**

  Example of Returned Message
  CAP:
  333444

#GOT

Gate pulse time. This command is useful in case you need to keep the button pressed longer. The standard time is 1 second (Maximum 99 seconds). You can change it with the GOT command.

The syntax of the command is the following:

- **#PWD123456#GOT02**

  With the above command, the opening time has been set to 2 seconds.

  Returned Message
  GOT:
  02

#CSQ

Check GSM signal quality. This command is useful to see what is the GSM network signal level your "Dial to Open" Device is receiving.

If you send the command: **#PWD123456#CSQ?**

You should receive an SMS with signal quality in range 0 to 31 (if it is 0 we doubt it will ever answer...). You should have a signal above 12 to be sure of being able to open the gate in any condition. Better if above 16. You should add an external antenna if this is not the case, or eventually even change operator with another that serves your area better.

Example of Returned Message
CSQ=<21>

5. Additional Input & Output Programming Instructions

The WT-009 also comes with additional 1 Input and 1 Output. The output is connected to an on-board relay which can be activated by sending an SMS command. The Input can be used to generate alarms when triggered. It also can be programmed to count the input active pulses up to 1ms fast or activate the output relay.

Note: When used as counters input work only in ACTIVE HIGH mode, they count ONLY High Going Pulses.

5.1) Input Settings

One of the most important functions is to receive alarms. In order to do this properly, you must program the administrator numbers, turn on the function of the input and tell the WT-009 which are the recipient numbers and who should receive the alert message for the particular input.

5.1.1) Programming the Administrator Number

The 8 administrator numbers can be programmed with a text command via SMS.

Text Command:
#TEL[N]=XXXXXXXXXX

N stands for administrator number **1 – 8** (position)
XXXXXXXXXX stands for the phone number you want to program as administrator.

- To add a number, the syntax of the command is the following:

  #PWD123456#TEL1=3593334444

  Example of Returned Message
  TEL1:
  3593334444

Please note that it is possible to program up to a maximum of 16 digits for a number.

- To check all the administrator number in the list:

  #PWD123456#TEL?

  Example of Returned Message
  TEL1:
  3593334444
  TEL2:
  0000000000
  TEL3:
  0000000000
  TEL4:
  0000000000
  TEL5:
  0000000000
  TEL6:
  0000000000
  TEL7:
  0000000000
  TEL8:
  0000000000

  Note: Programming the administrator numbers is necessary in order to operate all the below functions and to receive text alerts when the relays activated.

5.1.2) Setting the Recipient that will Receive Alert Message

The unit can only send text alerts to 1 or all 8 of the programmed administrator's mobile phone numbers and this function can be changed at any time by sending the following commands by SMS message to the unit.

Text Command:

#RERN=XXXXXXXX

XXXXXXXX stands for **8** digits value: ON (**1**) or OFF (**0**) for the 8 administrators

For example, if we assume only administrators 1, 2, 3, and 4 are to receive text alerts you would send the following SMS message to the unit.

- **#PWD123456#RERN=11110000**

Example of Returned Message
RERN:
11110000

Note: *You can only put 1 in the first 4 digits of the text command if there are only phone numbers stored in* ***#TEL1***, ***#TEL2***, ***#TEL3*** *and* ***#TEL4***. *The rest should be 0.*

- To check the setting of which recipient will receive alert messages
  #PWD123456#RER?

Example of Returned Message
RERN:
11110000

5.1.3) Editing the Input Alert Message

The Input Alert Message can be edited and programmed up to 100 characters long. You can change the displayed text by sending the following commands by SMS message to the unit. *Note: Only support normal abc/ABC English text, no special characters*.

Text Command:
#STR=XXXXX...

XXXXX stands for the display text that you want to program

For example, if you want the alert message to display "**Garage Opened!**" when received a text alert; you would send the following SMS message to the unit.

- **#PWD123456#STR=Garage Opened!**

Example of Returned Message
String:
Garage Opened!

5.1.4) Turn On the Function of Input

To turn on the function of input, you can send the following commands by SMS message to the unit.

Text Command:
#CTR=X

X stands for ON (**1**) or OFF (**0**) value

- To turn on the input, the syntax of the command is the following:
  #PWD123456#CTR=1

  Returned Message
  CTR=<1>

5.1.5) Setting the Counter Alert Value for Input

An alert message will be sent when the increment of alarm counter reaches the alert value (**Default: 500**). It is possible to set the alert value up to maximum value of 65535 times. To set the counter alert value of input, you can send the following commands by SMS message to the unit.

Text Command:
#COA=XXXXX

XXXXX stands for **5** digits value: The number of times

For example, assume you want it sends a counter alert message each time the input has triggered for 5 times, you would send the following SMS message to the unit.

- **#PWD123456#COA=00005**

  Example of Returned Message
  COA=00005

5.1.6) Setting the Feature of Input

This input can be programmed to behave differently, it can count the input active high pulses, generate an alarm message or activate relay. To program the input, you can send the following commands by SMS message to the unit.

Text Command:

#CTC=F

F stands for input function **1** - **5**

Function Descriptions

Function **1**:
- Function as counter
- Sends a counter alert message once alarm counter reaches the alert value

Function **2**:
- Function as counter
- Activate the output relay 2 to stay on
- Sends a counter alert message once alarm counter reaches the alert value

Function **3**:
- Function as counter
- Activate the output relay 2 to stay on
- Sends an alert message once triggered
- Sends a counter alert message once alarm counter reaches the alert value

Function **4**:
- Function as counter
- Activate the output relay 2 for 1 second
- Sends a counter alert message once alarm counter reaches the alert value

Function **5**:
- Sends an alert message once triggered

For example, assume you want it to send an alert message each time the input triggered, you would send the following SMS message to the unit.

- **#PWD123456#CTC=5**

    Example of Returned Message

    CTC=<5>

5.1.7) Reading the Total Increment Counter Value

To read the total increment counter value, you can send the following SMS message to the unit.

Text Command:
#COU?

- The syntax of the command is the following:

  #PWD123456#COU?

  You will receive the total increment value from the unit by SMS.

  Example of Returned Message
  INC:
  00015

5.1.8) Reading the Sub Increment Counter Value

To read the sub increment counter value, you can send the following SMS message to the unit.

Text Command:
#COT?

- The syntax of the command is the following:

  #PWD123456#COT?

  You will receive the sub increment value from the unit by SMS.

  Example of Returned Message
  COT:
  00015

Note: *The sub increment counter value will be reset automatically each time the alarm counter reached the alert value.*

5.1.9) Reset the Total Counter Value

To reset the total counter value, you can send the following SMS message to the unit.

Text Command:
#CLA

- The syntax of the command is the following:

   #PWD123456#CLA

   Example of Returned Message
   RECO-OK

5.2) Output Settings

5.2.1) Activate the Output Relay to Stay On for a Specific Time

To activate the output relay, you can send a text command via SMS specifying the number of seconds the output should stay on to the unit. It is possible to set up to maximum of 65,535 seconds

Text Command:
#RLY[N]=XXXXX

N stands for number **1** or **2** of Output
XXXXX stands for **5** digits value: The number of seconds

For example, assume you want to turn on the output relay number 2 for 1 hour, you would send the following SMS message to the unit.

- **#PWD123456#RLY2=03600**

   Example of Returned Message
   RLY2=03600

- To check the status of output relay

   #PWD123456#RLY?

   Example of Returned Message
   RLY1:
   03580
   RLY2:
   00000

Note: The reply message will be send to the recipients (The Administrators) only when the relay has turned on/off. This is to notify the administrators when someone outside the list activates the relays.

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5.2.2) Activate the Output Relay to Stay On

To activate the output relay to stay on, you can send the following commands by SMS message to the unit.

Text Command:

#RLOP[N]=X

N stands for number **1** or **2** of Output
X stands for ON (**1**) or OFF (**0**) value

- To activate the output relay number 2 to stay on indefinitely, the syntax of the command is the following:

  #PWD123456#RLOP2=1

  Returned Message
  RLOP2-ON

Note: *The reply message will be send to the recipients (The Administrators) only when the relay has turned on/off. This is to notify the administrators when someone outside the list activates the relays.*

5.2.3) Setting the Output Relay 2 to Supply Voltage or use Dry Contact when Activated

To set the output relay 2 to supply DC voltage when activated, please adjust the jumper according to the below diagram

Note: *Relay 2 will supply DC voltage only according to the output DC voltage of adapter used. When 24VAC adapter is used, the voltage supplied would be 33VDC.*

To set the output relay 2 to use dry contact (Default) when activated, please adjust the jumper according to the below diagram

5.3) Reset the WT-009 (Method 1)

To reset the unit, you can send the following SMS command to the unit.

Text Command:
*REST#XXXXXX

XXXXXX stands for 6 digits password based on **#PWD** and it can be changed anytime with **#CAP** command

Example:
- To reset the unit (with default password 123456), the syntax of the command is the following:

   *REST#123456

   Returned Message
   REST-OK

5.4) Reset the WT-009 (Method 2)

To reset the unit using this method, you will need to supply a DC 12 – 40V at the input and turn on the unit. The network LED will stay lit for 1-3 seconds and off. Once the network LED stops lit, the DC power supply at the input needs to disconnect immediately in order to successfully reset the unit.
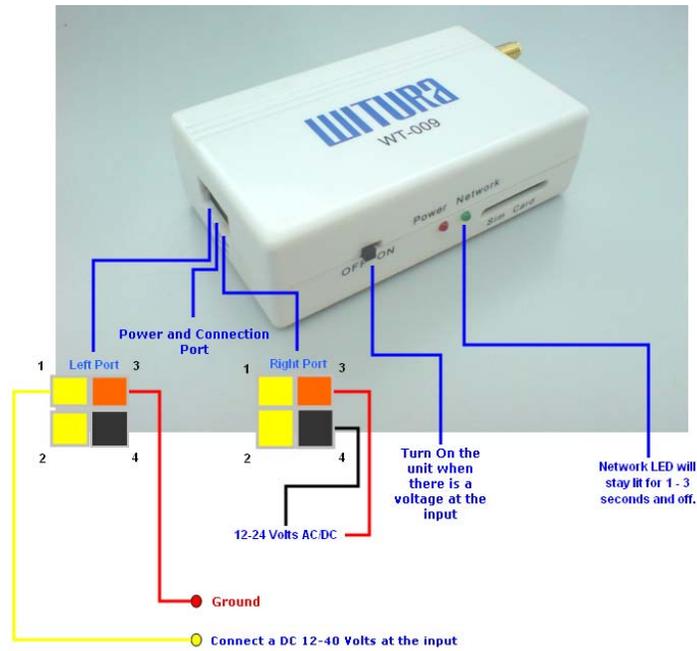
5.5) Auto Restart System

The WT-009 can continuously monitor the system status of its own. When there is a problem with system operation or the module is not working properly, it will restart the system automatically to avoid the unit stopped working. After 15 seconds of system failure, it will restart the system for 30 seconds and then the system will be ready to use.

Some phones cannot open the gate:

Verify that they send the caller ID when calling another phone. Check that the number you see in the other phone is what you have programmed in the "Dial to Open" Device

I have inserted the SIM but the unit doesn't work:

Check to have removed the PIN request from the SIM. If you didn't do it and you have switched-on the unit more than 3 times, you may need to use the PUK. Check with SIM instructions for details

I have checked in all possible ways but still the unit doesn't work:

Try to change operator.

Is it possible to open to anybody?

Yes, you can do it using the #ACM command.

Please be aware that some networks will disable a SIM if it is not used to make a call or send a text message over a period of time, please check with your network