

GSM-SWITCH

GSM Remote Controller

User Manual



Description:

The GSM-SWITCH is a Single Output Relay system with normally open and closed contacts and provides a low cost solution for a wide range of applications only requiring a simple GSM Switch, but with a 30 amp rated Relay on board for switching high currents such as Heating and Lighting circuits and has internal time clocks that can be programmed in several time zones.

The system has the flexibility to have a separate internal power supply connected on board if required and therefore can be supplied with or without this facility

A Battery back up on board provides not only an 8 hour continuous of operation of the system but will send a power down or power restored alerts in the event of power failure.

In addition the GSM-Switch can be ordered with or without an R.F Radio Control Receiver and Transmitters as required which can mirror the GSM Functions.

As with most GSM Remote systems the unit is activated by calling its cell phone number and the system will identify the number as authorized and then, will reject the call without answering and switch on the device connected to it. And therefore there is no call costs involved when controlling the unit via voice call, only when controlling the system via SMS

The system is able to load up to 250 numbers in the white list as authorized users and the single output relay can be programmed to switch on for a pre-determined length of time whenever the GSM-SWITCH is called, alternatively the output relay can be permanently switched on or off by sending the GSM-SWITCH a text message without effecting the default settings when Called

Alternatively you can program the unit by using the Software programming package supplied with the system and explained in the separate Soft-ware Manual enclosed.

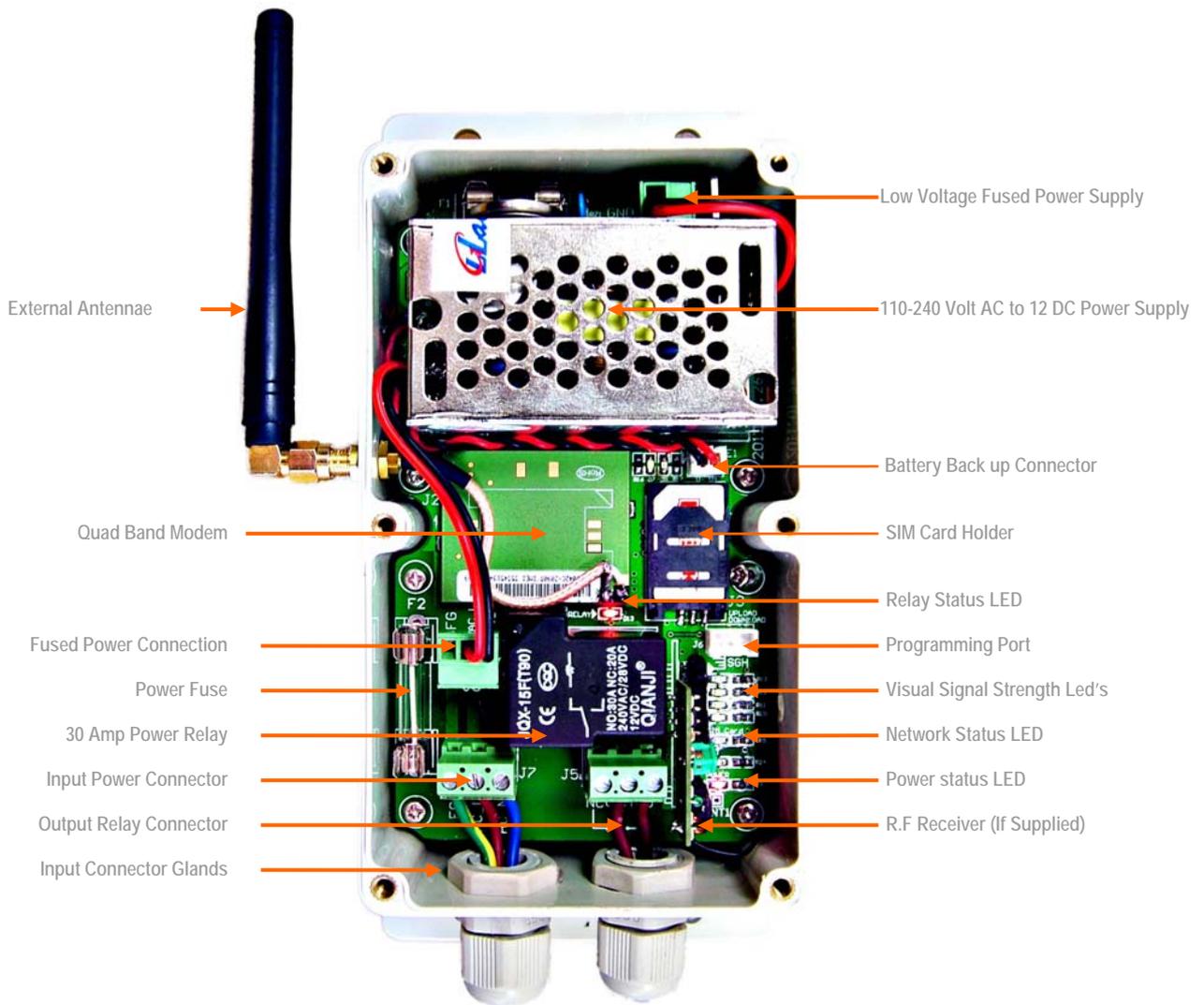
Requirements:

A mobile phone Network SIM card with sufficient credit to send confirmation text messages when initially programming the GSM-SWITCH, the unit accepts any Global Network SIM Card as the system is fitted with a Quad Band Modem.

Power Supply

If the system is not being used with the on board mains Power supply the system will need a Regulated 12 Volt Power supply which has its own input connection on board and separately fused for Protection.

GSM Switch Schematic Diagram



Specifications

- Quad Band
- 1 Output Relay 30 Rated Switching 16 amps Nominal Rated
- Power Supply on Board if Supplied 80-240 Volts 12 Volts 1.3amps
- High Voltage fused 6 amps
- Low Voltage fused 2 amps
- Battery Back Up 8 Hours Standby
- Enclosure IP-65 supplied with Gland entries
- R.F Receiver 9 If Supplied 433 MHz's Option 315MHz's 868 MHz's
- On Board Diagnostic Status Led's
- C.E Approval

Functions

- 250 Users n Caller ID programmable visa SMS or Software
- Output Relay switching 1 Second to 12 Hours on voice call activation
- Relay options Temporary –Permanently Latching
- Power down and Power Restored Functions
- Remote Relay status options
- Automated Relay Status latching on-Latching Off
- R.F Functions and back up (If Supplied)

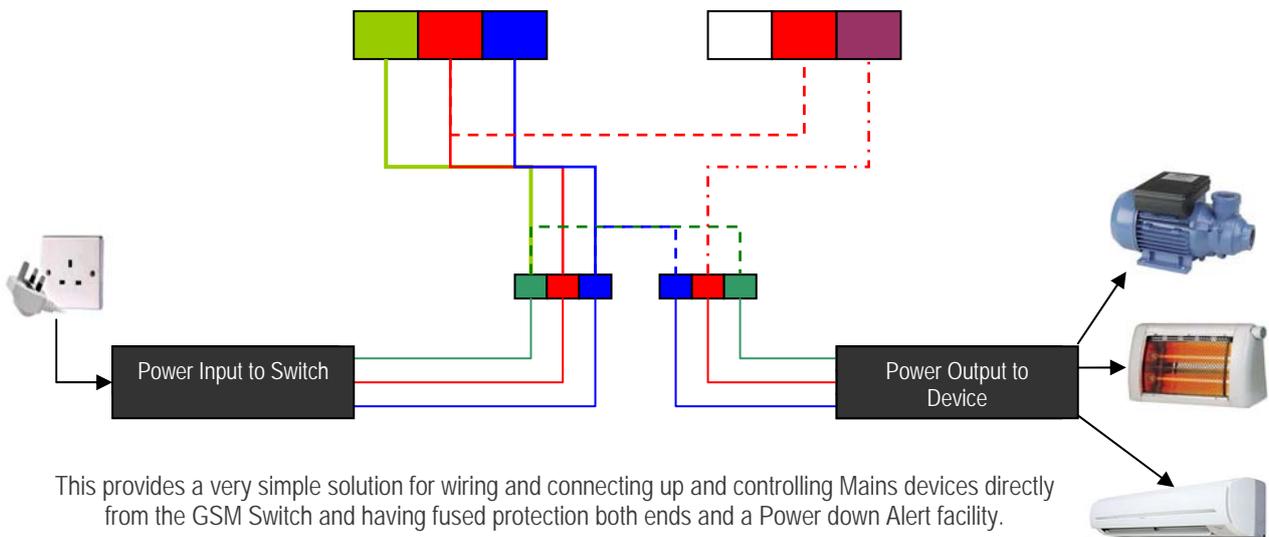
Installation:

The **GSM-SWITCH** comes with an IP65 Enclosure and can be mounted internally or externally as required and if supplied with an Internal Power supply you will only require to provide mains power 110-240 directly to the unit and connect as identified as Earth/Power and Neutral on the control board of which provides fused mains protection to the device being controlled.

The low Voltage output is connected to the main controller and further fused for further protection of the system.

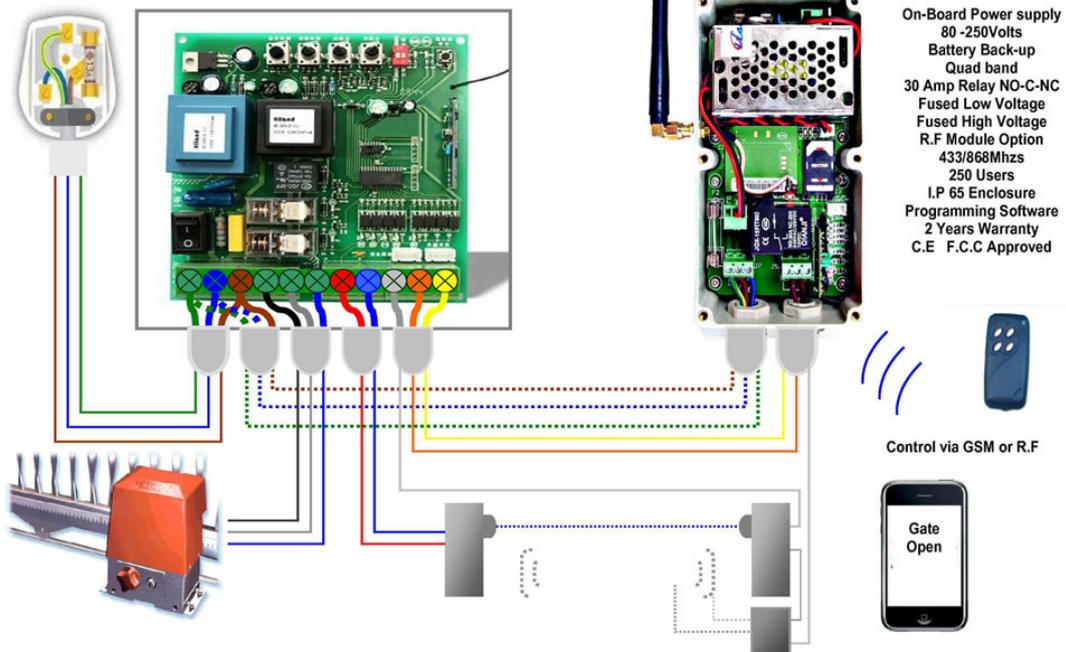
As the GSM-Switch has a 30 amp rated relay on board and 20 amp terminals it is therefore possible if controlling say 3 KW devices and only require taking a four core Mains cable to the device and feed the controlled device direct as per the diagram explanation, thus saving the time on installation costs and providing a more tidy installation and a simple plug and play solution.

Connections Mains Power Input and Output with Mains Power Supply on Board



This provides a very simple solution for wiring and connecting up and controlling Mains devices directly from the GSM Switch and having fused protection both ends and a Power down Alert facility.

Wiring Explanation for controlling Gate Pulse Start Loop and Photocell protection giving full Remote Control over the system via GSM or R.F



Setting up and Programming

Once you have installed the **GSM-SWITCH** and make the required connections to the device to be controlled the SIM Card can now be installed in the Holder as indicated in the schematic drawing and the Power Supply can be connected and switched on.

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 and the Voicemail function as this can also affect the system with some networks which can activate the voicemail before the system has read the incoming telephone number!*

On most SIM Card Network systems now the PIN requests are disabled but it is worth checking first and removing the Voice Mail function.

The Signal Led (Green) on the board will oscillate infrequently until it finds and logs on to the Network and will then flash every 3 seconds constantly and if does not happen then the unit has not logged on and it may be required to use an extension antennae or alternative network provider or re-seat the SIM CARD.

At this stage the visual bank of LED signal indicators immediately above the Network LED will also illuminate to indicate the system has logged on to the Network and will indicate either one to four bars of signal strength

Once the system has logged on the Network the one thing you also can do is to establish is the "actual Signal Strength" at the Location of the Installation to secure constant signal strength for the reliability of the **GSM-SWITCH** and this can be done by simply sending the following SMS Text message to the unit.

***PSSW*SGH? And this is the only command that does not require a password and you will receive the following similar SMS Message subject to the actual Signal strength**

Signal strength < 18 >

This Signal Strength range can typically vary from "**3-31**" of which it is suggested that a consistent Signal Strength acceptable should be at least 12 and above as the signal network strengths can vary dramatically and a typical acceptable signal strength would be circa **<10>-<15>** and in the even of a Signal strength below **<7 >** it would be suggested You install and external antenna to improve the Signal strength.

Programming the GSM-SWITCH

The GSM-SWITCH is programmed by either sending it SMS text commands from a mobile phone or using the soft-ware provided and explained under separate cover.

The password command must pre-fix all SMS text commands and the default password can be changed to any other 5 digit number of which must be noted as if lost or forgotten the only resolve is for the unit to be reset by the factory.

Remember that all SMS text commands must always be sent in **CAPITAL LETTERS** and **DO NOT** add spaces or any other characters otherwise the system will simply ignore the text messages and not perform the commands.

Programming via SMS and Default Command

The **GSM-SWITCH** is pre- programmed and can be controlled by sending certain SMS Text Messaging to the unit and is password protected with a factory default setting of five digits preset at ***PSSW12345** and this prefixes any commands to the unit and the unit is also set up as factory default to initially accept any incoming telephone call which will activate the relay for one second, again which is set as factory default.

The security mode would normally be activated after all the authorized numbers are stored into the system and confirmed as correct as if any of the numbers have been incorrectly stored that persons number will not be able to access the system.

Changing the Password

It is possible to Change this password to another 5 digit number by sending the following SMS Text message to the unit and we assume the new Password is **54321**

***PSSW12345*NPW=54321**

You will receive the following message back from the unit to confirm the password has been changed

NPW=54321

The new password is now ***PSSW54321**

Checking Signal Strength

***PSSW*SGH?**

The system will now send back a report to indicate the Signal Strength at the location of the *GSM-SWITCH* and you will receive a similar message as follows.

SIGNAL STRENGTH < 14 > which indicates a mid range of Signal Strength and is acceptable to maintain a constant network as the networks will vary and can drop as low as < 7 > and any lower the unit can well log off the network and Latch off the Relay if active and gives the indication that the unit is faulty when it is only subject to a low or loss of Signal Strength.

In this instant the unit will consistently search and communicate with the network until it have re-established a network link and log back on and appear as an intermittent fault and If this continues to happens on a regular basis it is suggested you install an additional External Antenna.

Setting up the Security mode.

This function as explained can be operated in two modes of security which can be set as desired and the factory default is **“Open Mode”** meaning any person who has access to the actual SIM Card telephone number of the unit can operate the system and this is usually only used for setting up the system or for low security applications based on applications of convenience.

The other mode of operation is the **“Security Mode”** which only allows the persons who have their telephone numbers entered into the security list of the unit to access the system and this is usually also done once all the pre-programming of the telephone numbers has been programmed into the system and the Latch times set.

This mode of command would normally be done once all the telephone numbers have been programmed into the system and you would then set the **“Security Mode”** and to program this you would send the following SMS Text message to unit.

***PSSW54321*SSM=ON** and the unit will return the following SMS Text Message.

SSM=ON and the **“Security Mode”** is on

To set the system back to **“Open Mode”** you would send the following SMS text message to the unit

***PSSW54321*SSM=OFF** and the unit will return the following SMS Text Message.

SSM=OFF and the **“Open Mode”** has been set to factory default.

Setting the Latching time for the unit when called

The *GSM-SWITCH* can be programmed to latch the Relay from a period of from 1 second up to 12 hours when called and this allows a vast range of flexibility for many applications from Automatic gates to switching on heating and lighting and remote re-setting of servers etc.

The unit comes preset to latch the relay for a period on 1 second and to change this latching period time to say 1 hour you would use the following programming command which is always calculated in seconds with 5 digits and therefore the command would be sent as **03600**.

To pre-program to unit to latch the relay for 1 hour when called you would send the following SMS Text message to the unit, using the new password ***PSSW54321**

***PSSW54321*RLY=03600** and the unit will return the following SMS Text Message.

RELAY SET - 03600 and the Relay of the unit will now latch for one hour whenever the unit is called (**Subject to authorization of the number if Security Mode Set**)

In addition to the pre-programmed latching time when the unit is called, it is also possible to temporary or permanently latches the Relay via SMS Text message without affecting the existing programming function when the unit is called.

If it is required to latch the relay temporarily for say 2 hours you would use the following SMS text command and again based on seconds.

***PSSW54321*RLYT=07200** and the unit will return the following SMS Text Message.

RELAY TEMP 07200 and the relay has been temporarily latched for 2 hours as set in seconds.

If you require latch the Relay permanently **"ON"** and back **"OFF"** again this can be done by using the following SMS Text commands.

To latch the relay permanently **"ON"** you would send the following SMS text command to the unit.

***PSSW54321*RLYP=ON** and the unit will return the following SMS Text Message.

RELAY <P> ON

To latch the relay permanently back **"OFF"** you would send the following SMS text command to the unit.

***PSSW54321*RLYP=OFF** and the unit will return the following SMS Text Message.

RELAY <P> OFF

If you need to check the status the Relay and what mode it is you can send a SMS Text request using the following command.

***PSSW54321*RLY?** And the unit will return the following SMS Text Message. (Example assuming Relay is still part active after programming to be on for 2 hours and 1 hour remaining.

RELAY ON 03600

If the relay has been programmed as permanently on the unit will return the following S.M.S Text message.

RELAY ON <P>

If the Relay is inactive the unit will return the following SMS Text message.

RELAY OFF

SMS Report after latching the unit by calling the unit

It is possible to receive a text message whenever the Relay is latched via Phone Call which will report both **Relay On** and **Relay Off** to the user that has called the unit and only practical for certain infrequent applications and the factory default for this function is off.

To enable this function you would send the following SMS text message to the unit.

***PSSW54321*RLYM=ON** and the unit will return the following SMS Text message

RLYM-ON and the unit will return both **Relay On** and **Relay Off** status SMS Text messages when called.

To turn this function off you would send the following SMS Text Message to the unit.

***PSSW54321*RLYM=OFF** and the unit will return the following SMS Text Message

RLYM=OFF and this function is now disabled.

Programming in the administrator number in the system

It is possible to program 1 administrator number into the system that will be recognized as authorized number that have programming access to the system as well as activate the device it is connected to.

To add 09876543210 as the administrator you would send the following SMS text message to the unit

***PSSW54321*ADM1=09876543210**

This administrator number is the telephone number that will receive the Power Down and Power Restored messages.

Programming in the authorized telephone numbers in the system

It is possible to program up to **250 Land line or Mobile Phone** Numbers into the system that will be recognized as authorized numbers that can access the system and activate the Device it is connected to.

All telephone numbers can be programmed into the system using only the 7 digits of the telephone number as the system will scan the numbers of the last digits and accept and authorize that number to allow access to the system and will then reject the incoming call and activate the Relay as set and operate the device it is connected to.

Any Unauthorized numbers calling the unit will result in the system rejecting the call and refusing access to the system or the device the system is connected to.

It is Possible to program up to **5 telephone numbers** Into the system using the same SMS Text command and you would use the following command to enter the first 5 examples of numbers, based on using the last 7 digits of the number.

***PSSW54321*CLD01=1212121,CLD02=1313131,CLD03=1414141,CLD04=1515151,CLD05=1616161** and the unit will return the following SMS Text Message.

```
CLD01=1212121
CLD02=1313131
CLD03=1414141
CLD04=1515151
CLD05=1616161
END
```

Please note that you can 5 telephone numbers into the system using the same SMS text command only for up to the first 25 authorized users as if you are actively entering in excess of 25 numbers you would be using the software to program and administrate

Replacing one number in the Authorized List

If you wish to just replace a number you can just replace say number 6 in the list by sending the following SMS Text command

***PSSW54321*CLD06=156561** and the unit will return the following SMS Text Message.

CLD06=1561561 and the previous number **"1717171"** has been replaced with **"1561561"**

If the list number is more than 25, you can only program individual telephone number in 1 text message like the below example

***PSSW54321*CLD26=1735399**

If the list number goes above 100, you would send the text command like the following example

***PSSW54321*CLD100=1324590**

If you require checking or confirming what numbers are in the **"Authorized List"** you can either request all of the numbers in the list or request any particular one number in the list.

To request a single number stored you would send the following SMS Text Message to the unit.

***PSSW54321*CLD05?** And the unit will return the following similar SMS Text Message.

CLD05=1616161

Setting the Operating Time for Output relay

The system has the function to activate the output relay up to twice a day at a programmable time section. To program the operating time for output relay you would send the following text command to the unit.

***PSSW54321*SMW=SS,MM,HH,TTT,G;**

SS is a 2 digits value stand for seconds

MM is a 2 digits value stands for minutes

HH is a 2 digits value stand for hours

TTT is a 3 digits value stand for Turn ON time in seconds

G stands for Group (Time Section) number **1 - 2**

For example assume that you want the output relay to turn on for 20 seconds at 8.30am, you would send the following SMS message to the unit.

***PSSW54321*SMW=00,30,08,020,1;**

The unit will return the following SMS Text Message.

SMW=00,30,08,020,1;

For example assume that you want the output relay to turn on for 100 seconds at 6.00pm for the second time section, you would send the following SMS message to the unit.

***PSSW54321*SMW=00,00,18,100,2;**

The unit will return the following SMS Text Message.

SMW=00,00,18,100,2;

Setting the Time Clock

To set the time, you can send the following SMS command to the unit. The time must enter in 24 Hour format.

***PSSW54321*TSET=SS,MM,HH;**

SS is a 2 digits value stand for seconds

MM is a 2 digits value stands for minutes

HH is a 2 digits value stand for hours

For example to set the time 8.00am, you would send ***PSSW54321*TSET=00,00,08;** to the unit and the unit will return the following SMS text message **TSET=00,00,08;**

To check the time clock you may send text command ***PSSW54321*TREAD?** to the unit and the unit will return the following SMS text message **The time is SSMMHH: 00,00,08;**

Power down Alarm

The system has the function to send a text alert in the event the main power is lost and the system is relying on battery backup and the only number to receive these alerts will be the number as set as the ADM1 number.

When the mains power to the unit fails the ADM1 number will receive the following text message from the unit

POWER DOWN

When the mains power to the unit is restored the ADM1 number will receive the following text message from the unit

POWER RESTORED

Learning Mode for Remote Controls

It is possible to add remote controls for the system to do so you must have additional identical remote control with you. To program them to the system, you would send the following text command to the unit

***PSSW54321*LEARN**

Then press the Activate or Deactivate Relay button on the remote if it is programmed successfully you would receive **LEARN PASS** text message from the unit otherwise it will return **LEARN FAIL** text message

Note: You are allowed to add up to 5 remote controls to operate the system

Reset the GSM-SWITCH

To reset the system to factory default you would send the following SMS Text message to the unit.

PSSW54321*RESET and the unit will return the following SMS Text Message.

<UNIT RESET>

Warning!

This command will reset the password to *PSSW12345 and the reset the output latch time to 1 second and completely wipe the numbers stored with the memory of the system!

LIST OF SMS COMMANDS

*PSSW12345	FACTORY DEFAULT PASSWORD
*NPW=	CHANGE PASSWORD
*SGH?	CHECK SIGNAL STRENGTH
*SSM=ON / *SSM=OFF	SET SECURITY MODE
*CLD01= 01 - 250	ADD AUTHORIZED USER NUMBERS
*CLD01? 01 - 250	CHECK AUTHORIZED USER NUMBER
*RLY=	SET DEFAULT LATCHING TIME
*RLYT=	TEMPORARY LATCHING
*RLYP=ON / *RLYP=OFF	PERMANENT LATCHING
*RLY?	CHECK RELAY STATUS
*RLYM=ON / *RLYM=OFF	TURN RELAY SMS REPORT ON/OFF
*ADM1=	ADD ADMINISTRATOR
*SMW=	SET OPERATING TIME FOR RELAY
*TSET=	SET TIME CLOCK
*LEARN	LEARNING MODE FOR REMOTE CONTROL
RESET	RESET UNIT

Warranty

The Witura Technology Sdn Bhd company will warranty the
WT-1009 "GSM switch" V5

against any defective parts and workmanship for a period of 1-year warranty.

Witura Technology Sdn Bhd shall, at its option, repair or replace the defective equipment upon the return of such equipment to any Witura branch.

This warranty applies **ONLY** to defects in components and workman-ship and **NOT** to damage caused by situations beyond the control of Witura, such as incorrect voltage, lightning damage, mechanical shock, water damage, fire damage, or damage arising out of abuse and improper application of the equipment

The WT-1009 is a product of Witura Technology Sdn Bhd and Manufactured by the Witura Corporation Sdn Bhd

WARNING

For safety reasons, only connect equipment with a telecommunications compliance label. This includes customer equipment previously labelled permitted or certified.