



**GPS MODULE (MGPRS-X)**

**Installation Manual**

August, 2006

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# I - Chapter. Introduction

## I – 1. Introduction to MGPRS-X

GPRS MGPRS-X module is a device that performs two basic tasks when connected to an alarm control panel.

1. It checks the connectivity between the alarm control panel and the Alarm Receiving Centre.
2. It sends the alarm information using the GPRS/SMS network as primary communication path and the PSTN line as back-up.

The MGPRS-X operates in conjunction with the VISORALARM receiver, located in the ARC, that works as an IP alarm receiver (instead of the conventional PSTN line receiver) and as a GSM Receiver (installing SMS boards with a SIM card in the VISORALARM unit). The VISORALARM receiver sends the alarms to the automation software (SwAut) through a serial port. It is also in charge of receiving the supervision messages of multiple IP Modules (A10, G10 or MGPRS-X) units and generating the corresponding alarm in case of failure in the reception. For further information on the IP receiver VISORALARM check the manual of the unit.

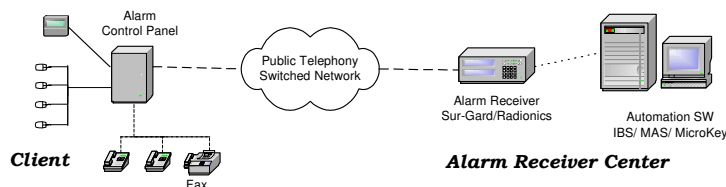
### I – 1.1 Working scenario

A traditional security scenario consists of a control panel (CP), located in the client environment and an alarm receiver center (ARC) located in the security company's control center. The CP contains a group of sensors which trigger a series of alarms or events which, when produced, are sent to the ARC to be processed.

Communication between the above is traditionally carried out over the telephone line so that both ends can initiate a call to the remote end: the CP in order to notify events and the ARC for bi-directional tasks (activation, teleloading and general control).

The communication protocol varies depending on the manufacturers who usually tend to use their own solutions. Protocols generally used are Contact- ID, 4+2, SIA, Contact-ID Expanded, etc.

The CP is placed as the first connection element to the PSTN so that it can priorities the customer's telephone line.

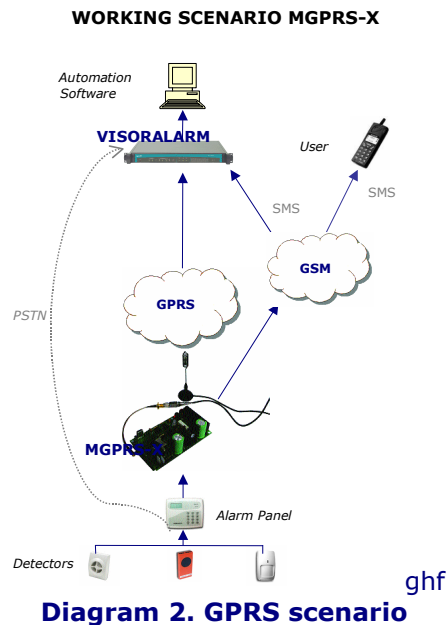


**Diagram 1.** Traditional security scenario

Within the general working scenario the MGPRS-X unit is located at the client side, next to the CP. The unit monitors the communications lines (GPRS & PSTN) availability, reporting changes through the GPRS / GSM network.

The unit is completely transparent for the alarm control panel transmitting all the alarms generated by the panel using CONTACT-ID protocol.

The unit can also use the GSM network alternatively when the GPRS network is not available. The unit also allows the programming of two phone numbers for the SMS sending being the first of them the phone number of the Receiver and the second one a mobile phone number (guard, user).



## I - 1.2 Operating Mode

The GPRS MGPRS-X module connected to the alarm control panel performs two tasks:

- Sending of alarms from the control panel to the VISORALARM receiver
- GPRS Connectivity Supervision to the VISORALARM receiver.

### I – 1.2.1 Sending of alarms

The supported alarm sending protocol is Contact-ID. This format sends alarms through DTMF digits complying with the following format:

AAAA MM QEEE GG CCC S

where AAA is the client number, MM the type of message, Q an event qualifier, EEE the type of alarm, GG the group or partition number, CCC the zone number and lastly S is the frame validation digit.

The GPRS MGPRS-X unit supervises permanently the PSTN line. It also analyzes the phone numbers dialed through the PSTN line. When the control panel dials the ARC phone number the MGPRS-X units intercepts the call and confirms the GPRS connectivity with the IP VISORALARM sending a polling signal. If the VISORALARM receiver responds to the polling the MGPRS-X sends the handshake to the control panel allowing the panel to send the pending events. If the VISORALARM receiver does not respond to the polling the MGPRS-X unit would let the control panel to

send the events through the PSTN if it is available. If it's not available the MGPRS-X confirms that there is GSM coverage and gets the alarms from the control panel to send them via SMS to the Receiver. To summarize, the alarms will be sent via GPRS in the first place, if it's not possible via PSTN line and lastly via SMS.

The IP VISORALARM receiver on receiving an alarm from an MGPRS-X stores this in a non-volatile internal memory. When the operation has successfully finished, it sends the acknowledgement to the MGPRS-X originating the alarm so that this in turn sends to the associated control panel. If the alarm storage memory cannot store the alarm, no acknowledgement is given.

As regards the SwAut, the Teldat VISORALARM behaves as an alarm receptor that sends alarms received through a serial port. The Teldat VISORALARM can emulate a Sur-Gard or a Radionics 6500 receptor or an Ademco 685. The serial line parameters are configurable as well as those relative to the emulated receptor (link-test, receptor and line identifier, start and end frame characters, etc.)

### **I – 1.2.2 Supervision**

The monitoring traffic is encrypted UDP traffic. The Ethernet frame size does not exceed 70 bytes. The monitoring interval, the number of retries and time between retries are all configurable.

The Teldat VISORALARM received monitoring messages from the A10s. If these are registered, they are assumed alive and an acknowledgement response is sent to them; if the A10s are not registered, they are ignored. Periodically the status of all the registered A10s is checked and all those which have not notified their availability (i.e. those which have not responded since the last check) an alarm is generated. This is a 350 code alarm from the Contact-ID protocol (Communication trouble) which is received in SwAut.

In order to prevent the Teldat VISORALARM from sending hundreds or thousands of communication failure alarms when faced with a situation of general failure of IP traffic reception, the device itself monitors the network access through echo ICMP packets (ping) to a known address: if the echo ICMP packets (ping) towards this address fail then a code 356 alarm is generated from the Contact-ID protocol (Loss of central polling).

### **I – 1.2.3 Additional features**

In order to simplify installation and updating of the registered MGPRS-Xs, the IP VISORALARM receiver has additional facilities.

To install new MGPRS-Xs, the Teldat VISORALARM possesses configuration patterns associated to installer passwords. These permit you to automatically register new MGPRS-Xs in the supported MGPRS-Xs list and at the same time enable the MGPRS-X to request the necessary configuration for start up. The VISORALARM can simultaneously have multiple patterns; the choice of one or other depends on the installer password used in the MGPRS-X to request the service.

In order to maintain and update the registered MGPRS-Xs base, the Teldat VISORALARM has commands available to remotely update one or multiple configuration parameters used by the MGPRS-Xs.

## II - Chapter. MGPRS-X Description

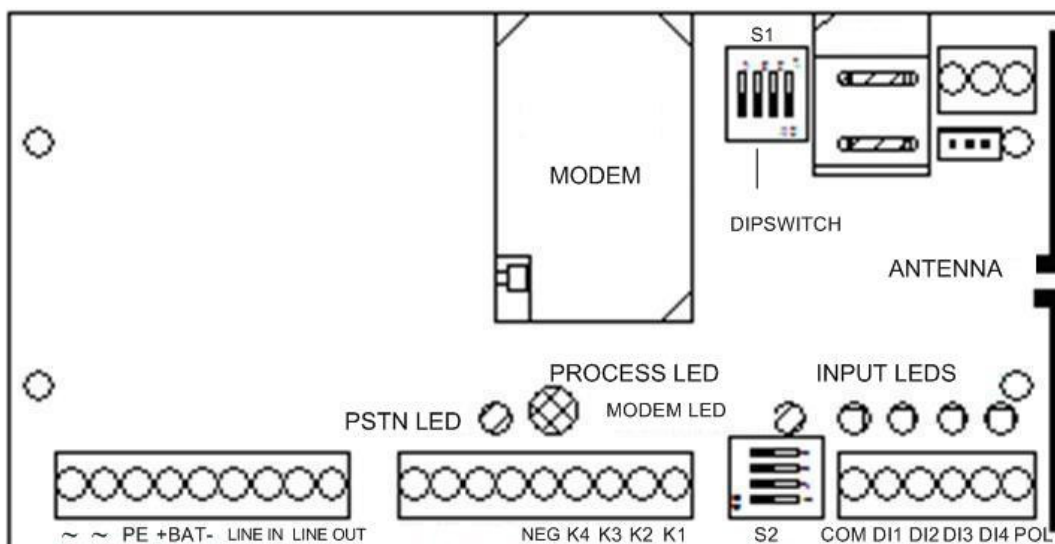
### II – 1. General Description

The communication Unit MGPRS-X transmits the alarms from the alarm panel that use CONTACT-ID protocol to the Central Receiver via GPRS or SMS. The Unit is connected to the PSTN of the alarm panel. When the alarm panel sends an alarm, the MGPRS-X unit intercept it, sending the alarm through IP channel via GPRS. In case the GPRS connection is not available the module won't intervene, letting the alarm to be sent through the PSTN line. If the PSTN is either available it would be sent via SMS. Therefore the priority of the communication channels is as follows: GPRS, PSTN, SMS.

The Unit can also monitor the GSM line by performing a permanent polling with the unit predefined frequency and supervise the PSTN line notifying any change in the line via GPRS. The communication Unit MGPRS-X transmits the alarms from the control panel to the Central Receiver via GPRS.

### II – 2. Installation Instructions

Due to the size and consumption of the unit it is possible to install it in the same box where the rest of the security equipment is located. Four adhesive feet are supplied to make the installation of the unit easier in any available part of the alarm control panel. The connection of the unit with the security system is shown in the following diagram.



**IMPORTANT:** Before proceeding to fix the unit in the chosen spot inside the box, disable the PIN of the SIM CARD, insert it in the SIM-card holder, connect the antenna to the modem and make the electric connections according to the above scheme.

## Description of the choc blocks:

Choc Block	Description
~	AC current supply. 18Vac
PE	Ground
+ BAT -	DC power supply. When AC current is provided to the MGPRS-X this output will be used to charge a battery supplying 13,8 Vdc.
LINE IN	PSTN line IN
LINE OUT	Phone line output to the TIP and RING of the control panel
AI1	Not Applicable
ANC	Not Applicable
AI0	Not Applicable
NEG	Common to the Outputs. Negative. (see connection schemes)
K4	No Use. Output 4 in Open Colector (máx. 75 mA)
K3	Output 3 in Open Colector (máx. 75 mA) It switches with the PSTN line is loss or restore.
K2	Output 2 in Open Colector (máx. 75 mA) It switches with the GPRS coverage is loss or restore.
K1	Output 1 in Open Colector (máx. 75 mA) It switches with the GSM connectivity is lost or restored.
COM	Common for the entries (see connection schemes)
DI1	Input 1 (máx. 24 Vac/Vdc) It sends an alarm and restore of General Alarm by default (Event 130)
DI2	Input 2 (máx. 24 Vac/Vdc) It sends an alarm and restore of Emergency by default (Event 122)
DI3	Input 3 (máx. 24 Vac/Vdc) It sends an alarm and restore of Duress by default (Event 121)
DI4	Input 4 (máx. 24 Vac/Vdc)

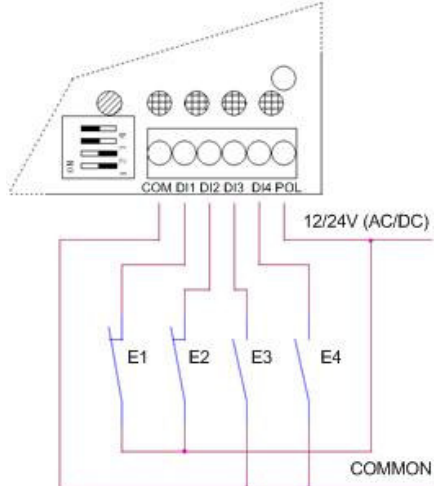
POL	Entries Polarization
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2.1 Entries connection scheme

These are the different options of connection:

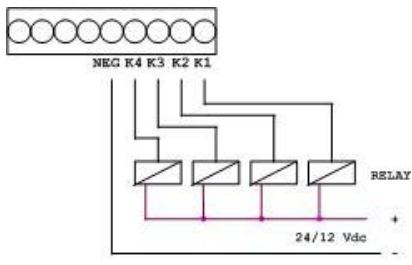
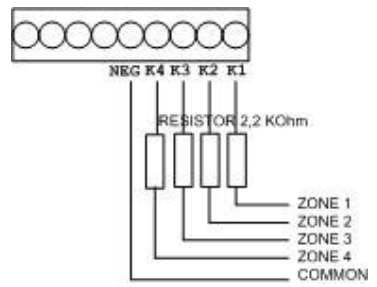
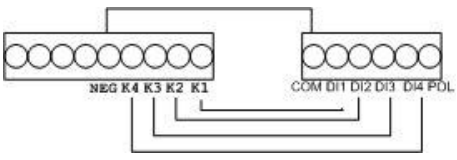
	<p><b>Idle-Switched off LED:</b> Closed Contact</p> <p><b>Activated-Switched on Led:</b> Open contact</p> <p>Dipswitch Position. All are ON.</p>
	<p><b>Idle - Switched off Led:</b> Open Contact</p> <p><b>Activated-Switch on LED:</b> Closed Contact</p> <p>Dipswitch Position. All are OFF</p>
	<p><b>Entries connected to outputs of the open collector of other devices that are activated by negative voltages.</b></p> <p>Dipswitch position is OFF</p> <p>Input LED: <b>Switched off</b> when the collector is positive <b>Switched on</b> when the led is negative</p> <p>This connection is only possible with connection with polarization with DC current.</p>



	<p><b>Combined Input contacts:</b></p> <p>Ex. Of the diagram: E1 and E2 Closed at idle, Opened when activated.</p> <p>E3 and E4 opened at idle and closed when activated.</p> <p>Dipswitch position is ON for E1 and E2 and OFF for E3 and E4.</p> <p>Input Led switched off when the entries are at idle and switched on when they are activated.</p>
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## 2.2 Output Connection schemes

These are the different options of connection:

	<p><b>Outputs of the unit connected to relays that allow other devices to operate.</b></p>
	<p><b>Outputs of the unit connected to zones of the control panel.</b></p>
	<p><b>Outputs of the unit connected too entries of the MGPRS-X unit.</b></p>

## III - Chapter. Configuration

The module should be configured for the proper sending of the alarm signals going to the VISORALARM Receiver.

It is recommended to program the unit by sending programming SMS messages to the unit (For further details see: *III – 1 SMS Programming of the MGPRS-X*). Several programming fields can also be configured connecting a tone phone to the LINE OUT connections of the unit or making a phone call to the SIM card inserted in the MGPRS-X unit (see *III – 2 Local Programming*)

The first step for programming the units is define the pattern for them. There are some rules to follow in the configuration of this pattern that will improve its performance. These are:

- a. **Keep-alive-timer** It is recommended to configure a value above 60 sec.
- b. **Keep-alive-retries.** It is recommended to configure a value above 4
- c. **Keep-alive-retries-timer.** Must be 9.
- d. **Callback-phone:** In the GPRS patterns this field should contain the phone number that the alarm panel will dial when sending the alarms to the conventional PSTN receiver. This phone number will be use to identify that the phone call that comes from the PSTN line connected to the MGPRS-X is made by the Alarm Panel.
- e. **Usr-password:** The code entered in this field will modify the default password for the MGPRS-X programming (2468) after the registration of the unit on the VISORALARM Receiver. Note: a hardware reset of the unit does not recover the factory default password 2468.

### III – 1. SMS Programming of the MGPRS-X Unit

The module should be configured for the proper sending of the alarm signals coming from the alarm panel to the VISORALARM Receiver through SMS messages. For that and before powering the unit put the dipswitch S1, with all the switches simultaneously in the "ON" position. Power the unit and wait until the process LED turns from green to red. From that moment the unit will be ready to be configured in its different areas: IP, SMS, entries and GPRS Network APN.

IP Configuration.

#### 3.1.1 IP configuration

In this area it is configured the IP connectivity with the receiver. Send an SMS to the phone associated to the SIM card located in the unit with the following fields:

1. Enter the password: 2468
2. Enter the GPRS register number: #1#
3. Enter the 4 digit client code pressing two keys for each digit according to the following table:

CONTACT-ID	0	1	2	3	4	5	6	7	8	9	B	C	D	E	F
Keys to press	00	01	02	03	04	05	06	07	08	09	11	12	13	14	15

Press # to confirm the customer account

4. Enter the Public IP address of the IP Receiver (only one press per digit). 12 digits have to be entered, so if the IP address of the Receiver is 10.24.6.1 the following sequence must be pressed: 010 024 006 001.

Press # to confirm the end of the sequence entered.

5. Enter the UDP port that the VISORALARM Receiver uses (only one press per digit). A maximum of 5 digits can be entered. Press # to confirm the end of the sequence entered.

6. Enter the installer password (only one press per digit). Press # to confirm the end of the sequence entered. The installer password should be asked to the Central Receiver in order to be the same as the password in the configuration pattern that is required for the unit.. Press # to confirm the end of the sequence entered.

PROGRAMMING SUMMARY:

Password#1#customer account(two press per digit)#Ip address#UDP

Port#Installer Password#

IMPORTANT: Once the module has registered in the receiver the password will be changed to the one that is associated to the installer password. Please, contact your ARC for more information

### 3.1.2 SMS Configuration.

Send a SMS to the phone associated to the SIM card located in the unit with the following fields:

1. Enter the password: 2468 (default value)
2. Enter the SMS configuration Register number: #2#
3. Insert the Receiver phone number including the country code number. (i.e.34 – Spain). Press # to confirm the end of the sequence entered. NOTE: All alarms sent to this number will be CONTACT-ID formats.
4. All the preceding steps are necessary for programming the unit. If it is chosen to introduce a second phone number for the reception of SMS, continue as follows: Insert the second mobile phone number for the reception of the SMS, including country code number (i.e.34 – Spain). Press # to confirm the end of the sequence entered. NOTE: All alarms sent to this number will be TEST formatted alarms.

PROGRAMMING SUMMARY:

Password#2#Reciver SMS phone number#User SMS phone number (Optional)#

### 3.1.3 Digital Entries Programming

Send an SMS to the phone associated to the SIM card located in the unit with the following fields:

1. Enter the password: 2468
2. Enter the Entries configuration register number: #3#
3. Enter the event codes: They will need to be entered in the inputs order, event 1 for input 1, event 2 for input 2 and event 3 for input 3 and pressing two keys for each digit according to the following table:

CONTACT-ID	0	1	2	3	4	5	6	7	8	9	B	C	D	E	F
Keys to press	00	01	02	03	04	05	06	07	08	09	11	12	13	14	15

Each event code should be introduced after entering a valid value for the event qualifier (1 or 3) and always according to the previous table. For example, if an event code is programmed with a value "1" (alarm) for its event qualifier, the

unit will send the event code with the qualifier value "1" for alarm and the qualifier value "3" for its restore.

Example: For the event 1 999 it will be inserted the following code: 01 09 09 09. The unit will send "1999" when triggered and "3999" when restored.

#### PROGRAMMING SUMMARY:

Password#3#Entrie 1#Entrie2#Entrie3#

Ex: 2468#3#01010300#01010202#01010201#

### 3.1.4 GPRS Network APN Programming

Send an SMS to the phone associated to the SIM card located in the unit with the following fields:

1. Enter the password: 2468
2. Enter the Entries configuration register number: #4#
3. Telecom Provider APN. Press # afterwards
4. Network UserName. Press # afterwards
5. Network Password. Press # afterwards

#### PROGRAMMING SUMMARY:

Password#4#APN#Username#Password#

### 3.1.5 Area and Zone on entries Programming

Send an SMS to the phone associated to the SIM card located in the unit with the following fields:

1. Enter the password: 2468
2. Enter the Entries configuration register number: #5#
3. Input the Area and Zone codes pressing two keys for each digit according to the table on previous chapter. It is required to enter the area and zone of all entries and in its corresponding order (entry 1, entry 2 and entry 3)

#### PROGRAMMING SUMMARY:

Password#5#Area+Zone of Entry 1#Area+Zone of entry 2# Area+Zone of entry 3#

## III – 2. Local Programming of the MGPRS-X Unit

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The module should be configured for the proper sending of the alarm signals coming from the alarm panel to the VISORALARM Receiver. The programming of the unit is divided in:

1. Programming of the IP parameters
2. Programming of the SMS parameters

To program the unit and before powering the unit put the dipswitch S1, with all the switches simultaneously in the "ON" position. Power the unit and wait until the process LED turns from green to red. From that moment the unit will be ready to be configured through the following ways:

1. from a call made from a fixed or mobile phone using its keypad
2. from a telephone connected to the LINE OUT connectors.

### 3.2.1 Programming of the IP parameters.

This configuration includes the following parameters: customer account, Public IP address of the VISORALARM Receiver, UDP port, installer password for the desired pattern configured on the VISORALARM receiver.

4. Dial the phone number installed in the MGPRS-X or just hang up if you have a phone connected to the LINE IN connectors. When the unit answers the call the process LED will turn to orange.
5. Enter the password: 2468
6. Enter the 4 digit client code pressing two keys for each digit according to the following table:

CONTACT-ID Digits	0	1	2	3	4	5	6	7	8	9	B	C	D	E	F
Keys to press	00	01	02	03	04	05	06	07	08	09	11	12	13	14	15

Press # to confirm the customer account

4. Enter the Public IP address of the IP Receiver (only one press per digit). 12 digits have to be entered, so if the IP address of the Receiver is 10.24.6.1 the following sequence must be pressed: 010 024 006 001.

Press # to confirm the end of the sequence entered.

5. Enter the UDP port that the VISORALARM Receiver uses (only one press per digit). A maximum of 5 digits can be entered. Press # to confirm the end of the sequence entered.
6. Enter the installer password (only one press per digit). Press # to confirm the end of the sequence entered. The installer password should be asked to the Central Receiver in order to be the same as the password in the configuration pattern that is required for the unit.

#### PROGRAMMING SUMMARY TABLE:

Fill in the following information table before programming

RED	G10 Unit phone number									ORANGE	Password				Client code number				R10 Receiver IP Address												UDP Port					Installer password					GREEN								
	6	0	9	0	0	0	9	9	9		2	4	6	8	1	1	2	2	3	3	4	4	#	0	1	0	0	2	4	0	0	6	0	0	1	#	6	5	5	3		5	#	1	2	3	4	5	#
																							#													#							#						#

**IMPORTANT:** The maximum period / delay of time between typing each key shouldn't be longer than 10 seconds. Otherwise the unit will hang up and the process will need to be restarted. In the same way, if a mistake is made during the introduction of the data (incorrect password or erroneous range for values, etc.) the unit will cut the communication and the process will have to be restarted also. In both cases, the process LED turns red to indicate that the configuration is not correct.

#### VERY IMPORTANT:

Once the unit is connected in normal operating mode it will register in the VISORALARM Receiver and the rest of the parameters will be programmed. It is necessary that the pattern used for the module configuration contains the phone number programmed in the control panel programmed in the field *callback-phone*. This is the number that will be used to detect if the control panel is making a phone call to the Receiver.

### 3.2.2 Programming of the SMS parameters.

If no GPRS connectivity is available the MGPRS-X unit will let the control panel to send the events through the PSTN line. If this one is not available the MGPRS-X unit can be programmed to send the events via SMS in Contact –ID format to the ARC.

The unit will also be capable to send through SMS the alarms associated to the Inputs to an end user or patrol. To see the entries functionality go to the following section. To program the SMS sending do as follows:

5. To program the unit and before powering the unit put the dipswitch S1, with all the switches simultaneously in the "ON" position. Power the unit and wait until the process LED turns from green to red. From that moment the unit will be ready to be configured. If the unit has the dipswitch S1 in ON position and has just been configured the LED would be green and ready to complete the SMS configuration.
6. Dial in the unit phone number or just hang up if the phone is connected to the LINE IN connectors. The process LED, when the unit picks up/answers the call, will change to orange colour
7. Enter the password: 24241
8. Insert the Receiver phone number including the country code number. (i.e.34 – Spain).
9. If it is chosen to introduce a second phone number for the reception of SMS by a user or a patrol, press "#" and the second mobile phone number for the reception of the SMS, including country code number (i.e.34 – Spain).

Once all parameters are inserted correctly, the unit will hang up and the process LED will change to green colour to indicate that the unit has been correctly configured. Then, it is necessary to finish the configuration process as follows: disconnect the power supply feeding the unit, modify the dipswitch to the desired position and reconnect the unit to the power supply again.

#### PROGRAMMING SUMMARY TABLE:

Fill in the following information table before programming

RED	MGPRS-X phone number						ORANGE	Password					Receiver phone number 1								Receiver phone number 2 (optional)							GREEN										
	6	0	9	0	0	9		9	9	2	4	2	4	1	3	4	6	0	2	9	9	9	0	0	0	#	3		4	6	0	2	9	9	9	0	0	1

**IMPORTANT:** The maximum period / delay of time between typing each key shouldn't be longer than 10 seconds. Otherwise the unit will hang up and the process will need to be restarted. In the same way, if a mistake is made during the introduction of the data (incorrect password or erroneous range for values, etc.) the unit will cut the communication and the process will have to be restarted also. In both cases, the process LED turns red to indicate that the configuration is not correct.

### III – 3. Option Selector

The unit has a dipswitch S1 that allow to configure the working mode of the unit. Following are the options available:

- a. **Programming Mode:** This mode is used to configure the unit. The position of the switches of the dipswitch is as follows:

switch	1	2	3	4
Position in Programming Mode	ON	ON	ON	ON

- b. **Normal Working Mode:** When the unit is powered this way, the way the unit work is the same as described in the point 6– NORMAL WORKING MODE. The position of the switch 1 has to be OFF

Switch	1	2	3	4
Position in Normal Working Mode	OFF	-	-	-

- c. **Reset – Configuration erase:** To erase the programming it is necessary to un-power the unit, put the Option Selector according to the instructions in the following table and power the unit again. When the process LED blinks the unit has returned to the default values.

Switch	1	2	3	4
Reset	ON	OFF	ON	OFF

- d. **Delay in the notification of GSM coverage failure:** when the GSM coverage disappears the output k3 switches. The switching be delayed 30 or 120 seconds according to the selector position.

Switch	1	2	3	4
Reset	ON	-	-	OFF

## IV - Chapter. Normal Operating mode

### IV – 1. Unit initialization

To operate the unit in the normal working mode the switch 1 from the dipswitch S1 must be OFF and the unit powered. After powering the unit, with this configuration in the dipswitch, the green LED of the status modem will be switched on and it will start to blink after a few seconds. In that moment the unit is ready to transmit.

The process LED starts in green, then it switches off for an instant and then:

1. It will indicate the coverage level for a few seconds. The process LED will show the GSM coverage of the unit with the following protocol of colours:

Coverage	Led
0-1	Red
2-3	Orange
4-5	Green

2. If the GPRS connectivity to the receiver is available the process LED will stop showing the coverage and it will start to blink in green. In this situation the LED will indicate that the channel has been opened correctly and the VISORALARM Receiver is answering to the polling. If the connectivity is lost then the process led will show coverage level again. The unit will retry to connect to the VISORALARM every two minutes
3. If there's no connectivity with the Receiver VISORALARM the LED process will indicate the GSM coverage again.

### IV – 2. PSTN Led status

The status of the PSTN led works as follows:

- Led ON: PSTN line is available
- Led OFF: PSTN line not available
- Led Blinking: The unit is in process of restoring the PSTN line

A PSTN line failure will be detected in 3 seconds while a restore will take 15 seconds.

Every time the line changes the status, cut or restore, an event 354 will be sent to the Receiver.



## IV – 3. General functionality of the unit

When the unit is powered for the first time after being programmed it registers in the VISORALARM receiver getting:

1. Configure the operating parameters from the pattern identified by the installer password.
2. Register in the Receiver and synchronize the polling.

Once registered, if there is connectivity via GPRS to the VISORALARM, the unit sends the polls of the GSM line via GPRS according to the predefined periodicity. If the polling got interrupted the VISORALARM Receiver will indicate it sending a signal to the Alarm Management Software after waiting the total time of retries.

If, being the PSTN line connected to the unit and, this one, becomes not available, the unit will send a message notifying this fact. Also, the unit will send the restore signal when the PSTN line becomes available.

If the phone number dialled is the Central Station one and If exists connectivity to the receiver VISORALARM the unit will take the alarm and send it through GPRS. In case the phone number is not the Central Station one or there is no connectivity then the unit will let the call goes through the PSTN line (If exists).

If there's no PSTN line, the unit has been programmed to send alarms via SMS and there's is GSM coverage the alarms will be sent via SMS.

The maximum number of events accepted per alarm panel call is 10. Once the units receive 10 events it ends the call and starts sending the alarms through GPRS. This process last between 1 to 3 seconds per alarm event. If another alarm panel call is received during this process the call will be sent through the PSTN line.

## IV – 4. Events sent from the MGPRS-X Module to the VISORALARM receiver

The unit is capable of sending own events when one of the following situations appears:

- a. Cut and restore of PSTN line
- b. Power Supply fault
- c. Entries events

Event Description	Notes	Event Contact ID	Configurable
- PSTN line cut notification	With a 15 seconds delay	XXXX 1 354 00 000 S	No
- PSTN line restore notification	With a 15 seconds delay	XXXX 3 354 00 000 S	No
- Power supply loss - Power supply restore	Bat<13,5Vdc Bat>12,7Vdc	XXXX 1 301 00 000 S XXXX 3 301 00 000 S	No
- Low Battery - Low Battery Restore	Bat<11,8Vdc Bat>12,7Vdc	XXXX 1 302 00 000 S XXXX 3 302 00 000 S	No
- Empty Battery	Bat<11,4Vdc	XXXX 1 311 00 000 S	No

- Battery Restore	Bat>12,7Vdc	XXXX 3 311 00 000 S	
- Activation of the Input DI1	Alarm	XXXX 1 130 00 000 S	Yes
- Deactivation Input DI1	Restore Alarm	XXXX 3 130 00 000 S	(Event Code)
- Activation of the Input DI2	Emergency	XXXX 1 122 00 000 S	Yes
- Deactivation Input DI2	Restore Emergency	XXXX 3 122 00 000 S	(Event Code)
- Activation of the Input DI3	Duress	XXXX 1 121 00 000 S	Yes
- Deactivation Input DI3	Restore Duress	XXXX 3 121 00 000 S	(Event Code)

## IV – 5. Events sent from the MGPRS-X Module to the User

Events sent from the MGPRS-X Module to the User

The unit is capable of sending own events when one of the following situations appears:

- Power Supply fault
- Entries events

Event Description	Notes	Event Contact ID	Configurable
- Power supply loss	Bat<13,5Vdc	AC POWER ON	No
- Power supply restore	Bat>12,7Vdc	AC POWER OFF	
- Low Battery	Bat<11,8Vdc	LOW BAT	No
- Low Battery Restore	Bat>12,7Vdc		
- Empty Battery	Bat<11,4Vdc	EMPTY BAT	No
- Battery Restore	Bat>12,7Vdc	BAT OK	
- Activation of the Input DI1	Alarm	ALARM 1 ON	Yes
- Deactivation Input DI1	Restore Alarm	ALARM 1 OFF	
- Activation of the Input DI2	Emergency	ALARM 2 ON	Yes
- Deactivation Input DI2	Restore Emergency	ALARM 2 OFF	
- Activation of the Input DI3	Duress	ALARM 3 ON	Yes
- Deactivation Input DI3	Restore Duress	ALARM 3 OFF	

To configure the SMS test desired on the entries it is required to send a SMS to the phone associated to the SIM card located in the unit with the following fields:

- Enter password: 2468 (default value)
- Enter the Entry programming register: #4# entry DI1, #5# entry DI2, #6# entry DI3
- Enter the desired text for the activation: Press # afterwards
- Enter the desired text for the restore: Press # afterwards

### PROGRAMMING SUMMARY

Entry DI1: Password #7# Desired text for the activation # Desired text for the restore #

Entry DI2: Password #8# Desired text for the activation # Desired text for the restore #

Entry DI3: Password #9# Desired text for the activation # Desired text for the restore #

When one of the entries DI1, DI2 or DI3, is activated or restored the corresponding event will be sent to the ARC via GPRS or SMS and to the user or patrol.

## IV – 6. Outputs Operating Mode

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The K1, K2, K3 and K4 outputs may be activated remotely. By default the outputs K1, K2, K3 switch when the GPRS connectivity, GSM Coverage or PSTN line are lost and the K4 is free for remote activation. It is also possible to activate all of them remotely and it depends on the switch 3 of the dipswitch S1 in the following manner:

1. If the 3th switch of the Dipswitch S1 is ON only the K4 output is available to be activated remotely. It is managed through SMS messages in the following manner: password#C#4#1# to activate it and password#C#4#0# to restore
2. If the 3th switch is OFF then all outputs may be activated remotely through the following messages:  
 Output K1: password#C#1#1# to activate and password#C#1#0# to restore  
 Output K2: password#C#2#1# to activate and password#C#2#0# to restore  
 Output K3: password#C#3#1# to activate and password#C#3#0# to restore  
 Output K4: password#C#4#1# to activate and password#C#4#0# to restore

## IV – 7. Configuration Report

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It is possible to inquire the unit about the configuration of the unit and its actual status. The unit will send a set of SMS back with the reporting requested. For reporting issues is required to send a SMS message with the following format:

- a. To report the IP, SMS, Entries Event, GPRS Network the SMS format is: password#A#
- b. To report the entries status the SMS format is: password#B#
- c. To report the output status the SMS format is: password#C#

## IV – 8. Important Considerations

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- If, after connecting the power supply to the unit, the modem status LED doesn't turn on, disconnect it, wait 60 seconds and reconnect again the power supply to the unit
- In the same way, if after connecting power supply to the unit, the modem status LED permanently stays on, it could mean either that the antenna connection is defective or that there is not a valid SIM card on the SIM card-plug (for example because the PIN code has not been disabled). In this case, disconnect the power supply, check both possibilities and reconnect power supply again.
- Response time periods from the GPRS network can be long at certain times. For that reason the unit will perform the retries with a minimum retries-timer of 9 seconds.
- The unit stores a maximum of 10 events for every phone call of the control panel. In case of loss of connectivity while sending the 10 events to the ARC, those events will be sent via SMS. In case that the GSM coverage is lost the alarms not sent will be stored in the units until the GSM coverage returns.
- When the connectivity with the receiver fails the unit will try to reconnect every 2 minutes.
- Polling Recommendations:
  - It is necessary to enter the field callback-phone with the phone number that is programmed in the Control Panel to call the ARC.
  - A polling (keep-alive signal) higher than 60 seconds is recommended.
  - It is also recommended a keep-alive-retries value higher than 4 to avoid false loss of communication alarms.
- The FCC and IC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by TELDAT Security, may void the user's authority to operate the equipment.
- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  - Reorient or relocate the receiving antenna
  - Increase the separation between the equipment and receiver
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
  - Consult the dealer or an experienced radio or television technician for help
- This product emits radio frequency energy, but the radiated output power of this device is far below the FCC radio frequency exposure limits. Nevertheless, the device should be used in such a manner that the potential for human contact with the antenna during normal operation is minimized. The system antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all the persons and must not be

co-located or operating in conjunction with any other antenna or transmitter.

- Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
- To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropic radiated power (e.i.r.p.) is not more than that permitted for successful communication. This device has been designed to operate with the antennas having a maximum gain of 3 dB. Antennas having a gain greater than 3 dBi are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

## V - Chapter V. General Features

### Power Supply

TENSIÓN RANGE	18 Vac: 10.5 VDC – 14 VDC
STAND-BY COMPSUMTION	30 mA
PEAK CURRENT	260 mA

### Size and Weight

LENGTH x WITH x HIGH	154 x 85 x 15 mm.
WEIGHT	150 gr

### Environment specifications

TEMPERATURE	On: 5° to 35°C.	Off: -20° to 60°C.
RELATIVE HUMIDITY	On: 8% to 80%.	Off: 5% to 90%.

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