

T320.04



Teleco Automation

**TELECO AUTOMATION
TVGSM000/TVGSM100**

OPERATING INSTRUCTIONS

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1 GENERAL

1.1 OBJECT OF THIS MANUAL


This manual is dedicated to the installation and use of the electronic programmer TVGSM000/TVGSM100 by TELECO AUTOMATION Srl. The manual contains the following indications:

- General information (technical specifications)
- Explanation of the individual functions and the installation procedure
- Function programming procedure and data insertion

The information contained in this manual was verified while the manual was being drafted. The manufacturer reserves the right to carry out any modifications to the described products at any given moment without giving prior notice.

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 This symbol denotes points that require particular attention.

1.2 SAFETY INFORMATION

► The device TVGSM000/TVGSM100 incorporates a state-of-the-art GSM-Quad Band module. To correctly install and use this product scrupulously respect the indications laid out in this manual. Operating the TVGSM000/TVGSM100 in the vicinity of radio, television, telephones or electronic devices in general could lead to noise interference.

The product could be subject to interference that may influence its performance.

Never install the device in the vicinity of pacemakers, acoustic prostheses or general electronic medical equipment as it could adversely effect the correct running of these appliances.

It must be understood that TVGSM000/TVGSM100 is operated by radio frequency and that no mobile phone operator is able to guarantee connection at any given moment. For this reason the device cannot be used with personal emergency systems.

2 TECHNICAL CHARACTERISTICS

2.1 CONFORMITY DECLARATION

This product conforms to the European Union standards.

We declare that this product conforms to the standards EN 50081-1:1991, EN 55022, CEI EN139-4/A2:2003, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-6, EN61000-4-8.

A copy of the product's "Conformity declaration" can be obtained from the manufacturer.

The GSM ENFORA module is declared to conform to the ETSI standards, EN61000-4-6, EN61000-4-3, EN55022 class B, 3GPP TS 51.010-1.

2.2 TECHNICAL SPECIFICATIONS

Power supply 12 Vdc

Power consumption during transmission 250 mA, 1.6A peak

Power consumption with an active relay 120 mA

Power consumption with two active relays 150 mA

Power consumption at rest 80 mA

Overall dimensions (l x h x d) 100 x 65 x 25 mm

Carrier GSM ENFORA GSM0308-11

Operating temperature range: from -30°C to +70°C.

Type of temperature sensors: NTC, probe with a thermoplastic cover

Operating range (°C): -40/+105

12V Lead support battery.

Types of output: relays with a maximum nominal switching capacity of: 5A 230V ac;

Types of input: opto isolation for devices/peripheral devices that have NC/NO contacts.

The box is provided with a label containing the product's general specifications.

3. PACKING

3.1 DISPOSAL OF THE PACKING AND THE PRODUCT

The cardboard packing can be disposed of according to the local differential waste disposal rules in force.

The TVGSM000/TVGSM100 product, which is composed of electronic components, is deemed to be a component part of an installation and must be disposed of by an authorised body.

4 INTRODUCTION

The TVGSM000/TVGSM100 is a reception device that commands two outputs and alarm signals in input via the GSM cell phone network. It is fitted with two independent inputs (expandable to 10/12 via a serial connection) and two independent outputs (expandable to 10 via a serial connection). It is possible to configure the device either by sending commands via SMS or by means of a serial connection with a PC, programming receiver telephone numbers, times, inhibitions, input and output activation, alarm messages, not to mention the reset of the settings and monitoring the status of the device in all its functions.

Opening an input and in general the activation of all commands sent by a cell phone will force the memorised and associated numbers to be called and an SMS message to be sent to them.

The product is also fitted with a radio receiver interface for TVLINK radio controls; it is supplied with an internal antenna and has the possibility to be fitted with an external antenna if reception is poor.

5 FUNCTIONS

- 1- Radio receiver compatible with TVLINK encoding with the possibility of memorizing transmitters with different functions:
 - Standard transmitters up to 7 channels.
 - Transmitter with survival, the transmission time for these transmitters is based on a value sent during the memorisation stage (for example: water transmitter) or set to one hour if this information is missing.
 - Transmitters that send temperature values, these transmitters send a particular channel that has been linked to a temperature value;
- 2- The possibility of activating two outputs via SMS (or more outputs with a slave device connected to the serial line) with either bi-stable, mono-stable or timer controlled relays (from 0 to 9999 seconds);
- 3- The possibility of associating (up to 8 telephone numbers) with a remote event, sending an SMS a phone call or both;
- 4- The possibility of associating 2 inputs, an SMS signal (or more inputs with serial connection to ulterior slave devices);
- 5- Temperature value detection by means of two probes and the possibility of requesting the given value via an SMS; the possibility of receiving an SMS in automatic with the temperature value when it exceeds a minimum or maximum set value (temperature threshold);
- 6- The possibility of expanding the inputs and the outputs by means of modules connected via a serial cable;
- 7- (Only using the support battery) Blackout indications, mains reset and correct operating indications;
- 8- The possibility of programming via PC using a serial line connection, saving the installation data and personalising the memorised numbers (associated personal data);

- 9- Function indications via LEDs;
- 10- Remote transmitter programming buttons;
- 11- The possibility of inserting and cancelling up to 300 telephone numbers with gate opening functions, if the number in arrival corresponds to one of the memorised numbers the corresponding output relay is activated (see figure in paragraph 6.3).

6 INSTALLATION

In order to guarantee security and safety of the operator and the correct operation of the device you have acquired, the TVGSM000/TVGSM100 must only be installed by qualified personnel. The following standards must also be respected.

1. Environment conditions.

The TVGSM000/TVGSM100 device (the appliance and all its connected cables) must be installed in sites that are without or far away from the following:

- Dust, humidity, high temperatures;
- Direct exposure to the sun's rays;
- Objects that radiate heat;
- Objects that produce a strong electromagnetic field;
- Liquids or corrosive chemical substances

Avoid all rapid changes in temperature and/or humidity.

2. Protection grade.

During the TVGSM000/TVGSM100 installation stage it is possible to obtain a protection grade of IP54 by mounting the container as shown in the diagram, using the relative cable pipes.

3. Power supply.

Respect the following standards:

- Don't use cables longer than 3 metres;
- The external power device (e.g. plug-in power devices), must respect the directive EN 60950 (electrical safety);
- Do not invert the power supply poles.

6.1 Wiring

In relation to the figure in paragraph 6.3:

- Connect the desired peripheral device to the OUT2 binding posts 1,2 and 3 according to the technical specifications (see paragraph 2.2);
- Connect the desired peripheral device to the OUT1 binding posts 4,5 and 6 according to the technical specifications (see paragraph 2.2);

The first time the device is started up both outputs have their contacts set to NC and COM, solenoid relays not activated).

- Connect an additional antenna to binding posts 7-8 if necessary (see chapter 5);
- Connect a 12 Vdc power supply to binding posts 9-10;
- Connect the 12 V support battery to binding posts 11-12;
- Connect the desired alarm to the IN1 binding posts 13-14 (line type NC/NO),
- Connect the desired alarm to the IN2 binding posts 15-16 (line type NC/NO),

(If you do not intend to use one or both of these inputs bridge the contact between 13-14 and/or 15 and 16.)

- Connect and NTC type temperature probe to binding posts 17-18 (see paragraph 2.2);
- Connect and NTC type temperature probe to binding posts 19-20 (see paragraph 2.2);

The TVGSM000/TVGSM100 device is fitted with a serial port RS232 with which it is possible to:

- check the correct working order of the device;
- check the correct installation of the device;
- carry out tests;
- connect additional inputs or outputs by means of a slave device;
- set the parameters necessary for the correct operation of the device.

To connect the TVGSM000/TVGSM100 to an external PC you must use the standard serial cable supplied in the kit or one that has similar characteristics.

If you have an RS232/USB converter it is possible to connect the device to a USB on the PC.

6.2 SWITCHING ON

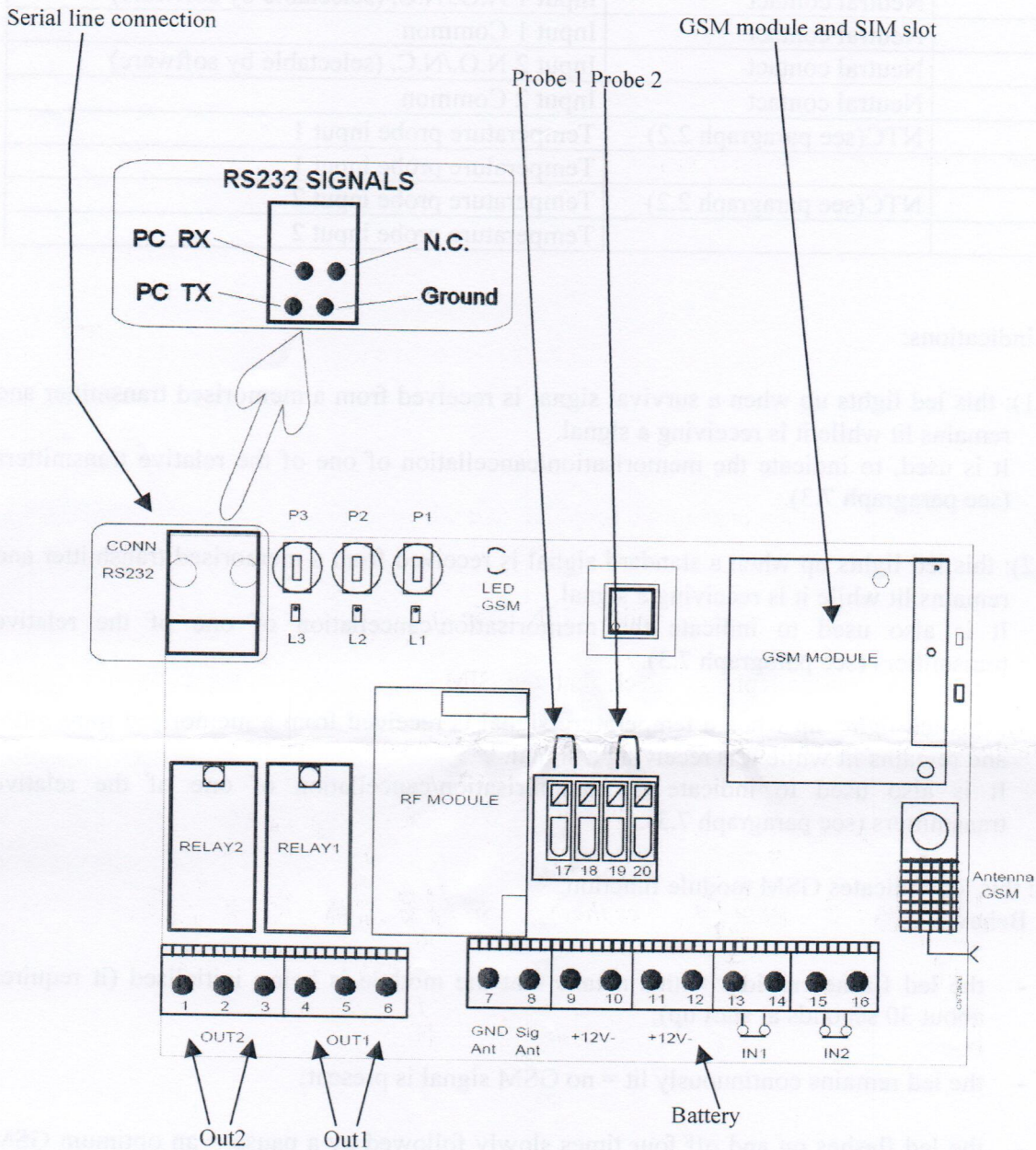
Once you have finished fitting the base of the container and wiring up the TVGSM000/TVGSM100 and having checked that the inputs are bridged you need to:

- Insert the SIM card (it must not require a PIN code and must have the answering machine function disabled) into GSM carrier;
 - ▶ Note: Using a cell phone check that the SIM card is functioning correctly before inserting it.
- Supply the TVGSM000/TVGSM100 card with a 12 Vdc power supply;
- Make sure the antenna is in a vertical position (if connected externally);
- Wait for the LED of the GSM to light up and for it to find the network (see paragraph 6.4).

▶ *Note: Check with your cell phone supplier that your SIM card can receive messages via SMS.*

▶ *Note. In the case of a weak GSM signal reception, indicated by the relative LED (see paragraph 6.3), you are advised to install an external antenna.*

6.3 HARDWARE DESCRIPTION



Number	Type/Polarity	Description
1	Relay2	N.O. neutral contact 5A-230V
2	Relay2	N.C. neutral contact 5A-230V
3	Relay2	COM neutral contact 5A-230V
4	Relay1	N.O. neutral contact 5A-230V
5	Relay1	N.C. neutral contact 5A-230V
6	Relay1	COM neutral contact 5A-230V
7		GND Radio control antenna
8		Radio control antenna signal
9	Positive	Power supply 12V dc
10	Negative	Power supply 12V dc

11	Positive	Battery 12 V
12	Negative	Battery 12 V
13	Neutral contact	Input 1 N.O./N.C. (selectable by software)
14	Neutral contact	Input 1 Common
15	Neutral contact	Input 2 N.O./N.C. (selectable by software)
16	Neutral contact	Input 2 Common
17	NTC(see paragraph 2.2)	Temperature probe input 1
18		Temperature probe input 1
19	NTC(see paragraph 2.2)	Temperature probe input 2
20		Temperature probe input 2

6.4 LED indications:

Led 1 (L1): this led lights up when a survival signal is received from a memorised transmitter and remains lit while it is receiving a signal.

It is used, to indicate the memorisation/cancellation of one of the relative transmitters (see paragraph 7.3).

Led 2 (L2): this led lights up when a standard signal is received from a memorised transmitter and remains lit while it is receiving a signal.

It is also used to indicate the memorisation/cancellation of one of the relative transmitters (see paragraph 7.3).

Led 3 (L3): this led lights up when a temperature signal is received from a memorised transmitter and remains lit while it is receiving a signal.

It is also used to indicate the memorisation/cancellation of one of the relative transmitters (see paragraph 7.3).

Led gsm: this led indicates GSM module function.

Behaviour:

- the led flashes rapidly = this means that the module is being initialised (it requires about 30 seconds at start up);
- the led remains continuously lit = no GSM signal is present;
- the led flashes on and off four times slowly followed by a pause = an optimum GSM signal is present; three flashes on and off = a good GSM signal is present; two flashes on and off = a sufficient GSM signal is present; one flash = insufficient GSM signal is present (the signal is checked every minute)
- the led flashes four times rapidly followed by a pause in which it remains lit = no SIM card is present;
- the led flashes slowly = the SIM card is protected by a PIN code.

7 PROGRAMMING

7.1 COMMANDS VIA SMS

SMS texts are used for both setting the device functions as well as for requesting information from the device.

The SMS commands with their descriptions and stored default values for each determined parameter are laid out in the following table. The default password is "12345".

If the password is different from the default value, use the one you have set in place of "12345" in the following table.

Note 1: The SMS text is written in capital letters but the command can be written in small letters.

Note 2: At the receipt of a SMS which is not one of those included in table I (example: credit detail SMS), the device sends the message to the first telephone number in the memory.

Note 3: insert the international dialling code before the telephone number you want to memorize (for example +44 for UK); the dialling code isn't requested in some nations. In these case, insert a 0 before the standard telephone number.

Note 4: the device answers to the setting controls with a confirmation SMS and a telephone call; to the controls referred to the outputs ("OUT...") the device answers with the sending of a telephone call.

Table I

	DESCRIPTION	SMS COMMAND	DEFAULT VALUE
1	CHANGE OR PERSONALIZE THE PASSWORD	PWD12345,xxxxx,xxxxx	12345
2	MEMORIZE A TELEPHONE NUMBER WITH CALL RECEIPT AND SMS ENABLING (maximum 8 numbers, x = stored position of the telephone number to be inserted; y = number of telephone digits, max. 19 characters for each telephone number; if it exists it will be overwritten);	TELx,yyyyyyyyyyyyyy	-
3	CANCEL ONE OF THE 8 TELEPHONE NUMBERS (x = memory position of the inserted telephone numbers)	DELx,12345	-
4	CHECK THE MEMORIZED TELEPHONE NUMBERS WITH CALL AND SMS RECEIPT ENABLED: all the memorized numbers will be sent;	NUM?,12345	-
5	COMPLETE RESET OF ALL INSERTED PARAMETERS AND DELETION OF ALL MEMORIZED TRANSMITTERS: the initial values are reset to the memorized default values;	RESET12345	-
6			All numbers

	<p>ENABLE THE NUMBERS TO WHICH WILL BE SENT SMS; the SMS command is followed by the memory position of the telephone number you wish to be sent to; for example with SMS145 the SMS will be sent to the numbers in positions 1,4 and 5;</p> <p>DISABLE A TELEPHONE NUMBER SO THE SMS WILL NOT BE SENT TO IT</p>	<p>SMSxxxxxxxx</p> <p>DSMSxxxxxxxx</p>	<p>inserted have SMS activated by default</p>
7	<p>ENABLE A TELEPHONE NUMBER SO A CALL WILL BE SENT TO IT, the VOC command is followed by the memory position of the telephone numbers you wish to call; for example with VOC145 will be enabled a call to positions 1,4 and 5</p> <p>DISABLE A TELEPHONE NUMBER SO IT WILL NOT BE CALLED</p>	<p>VOCxxxxxxxx</p> <p>DVOCxxxxxxxx</p>	<p>All numbers inserted have CALL activated by default</p>
8	<p>ACTIVATION OF THE OUTPUTS 1,2,..... the outputs to be activated are indicated by a sequence (x,x,x,x,..) (up to 10 outputs using the serial line expansion); naturally it is also possible to activate just one output at a time (example: OUT12345,ON,1)</p> <p>ACTIVATING ALL OUTPUTS</p>	<p>OUT12345,ON,1,2,....</p> <p>OUT12345,ON,11</p>	
9	<p>DEACTIVATION OF THE OUTPUTS 1,2,..... the outputs to be deactivated are indicated by a sequence (x,x,x,x,..) (up to 10 outputs using the serial line expansion); naturally it is also possible to deactivate just one output at a time (example: OUT12345,OFF,1)</p> <p>DEACTIVATING ALL OUTPUTS</p>	<p>OUT12345,OFF,x,....</p> <p>OUT12345,OFF,00</p>	
10	<p>ENABLING THE INPUTS 1,2,.....the inputs to be enabled are indicated by a sequence (x,x,x,x,..) (up to 12 inputs using the serial line expansion); naturally it is also possible to enable just one input (example: INP12345,ON,1)</p> <p>ENABLE ALL INPUTS</p>	<p>INP12345,ON,x,....</p> <p>INP12345,ON,13</p>	
11	<p>DISABLING THE INPUTS 1,2,... the inputs to be disabled are indicated by a sequence (x,x,x,x,....) (up to 12 inputs using the serial line expansion); naturally it is also possible to disable just one input (example: INP12345,OFF,1)</p> <p>DISABLE ALL INPUTS</p>	<p>INP12345,OFF,x,....</p> <p>INP12345,OFF,00</p>	
12			-

	REQUEST OF THE OUTPUTS STATE; the number of each output is sent with its state value <i>on</i> or <i>off</i> .	OUT?	
13	SET THE OUTPUT RELAY WITH A MONO-STABLE FUNCTION (active for 0,5sec.); SET THE OUTPUT RELAY WITH A BI-STABLE FUNCTION (ON/OFF); SET THE OUTPUT RELAY WITH A TIMER CONTROLLED FUNCTION (on for yyyy sec.) x is the number of the output.	OUTRE _x ,M OUTRE _x ,B OUTRE _x ,Tyyyy	Bi-stable
14	REQUEST OF THE INPUTS STATE; the number of each input is sent with its state value <i>on</i> or <i>off</i> .	STO,IN	
15	ACTIVATE SMS SENDING AT THE TURNING ON; DEACTIVATE SMS SENDING AT THE TURNING ON;	PWON PWOFF	Not active
16	MEMORIZE TELEPHONE NUMBERS FOR GATE OPENING; all these numbers activate with a call the output 1; it is possible to memorize one number at a time (for example MAC12345,xxxxxxxxxxx) or more numbers, maximum 10, for each message. (set output 1 with mono-stable function) If it's added 'U' followed by a number between 1 and 9999 after the telephone number, the telephone number becomes "service limited"; it acts only the times that are specified in this command(in this case 120). After that the number will be deleted from memory.	MAC12345,xxxxxxxxxxx x,xxxxxxxxxxx,..... MAC12345,xxxxxxxxxxx xU120;xxxxxxxxxxx,..... ...	-
17	CANCEL A TELEPHONE NUMBER FOR GATE OPENING; it is possible to delete one number at a time (for example DAC12345, xxxxxxxxxxxx), maximum 10 numbers for each message.	DAC12345,xxxxxxxxxxx x,xxxxxxxxxxx,.....	-
18	CANCEL ALL THE TELEPHONE NUMBERS USED FOR GATE OPENING	DAC12345,12345,12345	-
19	SET THE INPUT INHIBITION TIME (x is the input and mm is the time in seconds from 00 to 59); an alarm will be sent if the input variation lasts for a period of time superior to the set value.	INIB _x ,mm	00
20	SET THE INPUT N.O. or N.C.(x is the input, m is the value: 1 = NO for high activation 0 for low activation = NC);	STO _x ,m	0

21	SET THE SMS TEXT FOR ALARM INPUT 1; mmm... = text to associate with alarm input 1 (max.127 characters);	TEXT1,mmm....	Input name
22	SET THE SMS TEXT FOR ALARM INPUT 2; mmm... = text to associate with alarm input 2 (max.127 characters);	TEXT2,mmm....	Input name
23	SET THE SMS TEXT FOR ALARM INPUT 3; mmm... = text to associate with alarm input 3 (max.127 characters);	TEXT3,mmm....	Input name
24	SET THE SMS TEXT FOR ALARM INPUT 4; mmm... = text to associate with alarm input 4 (max.127 characters);	TEXT4,mmm....	Input name
25	SET THE SMS TEXT FOR ALARM INPUT XX (up to 12), coming from a serial peripheral expansion; mmm... = text to associate with alarm input XX (max.127 characters);	TEXTXX,mmm.....	Input name
26	SET THE SMS ASSOCIATED WITH SURVIVAL mmm... = text to associate (max.127 characters);	MTXS,mmmm.....	Text associated with survival
27	SET THE SMS ASSOCIATED WITH SURVIVAL AND STANDARD TRANSMITTERS mmm... = text to associate (max.127 characters);	MTXN,mmmm.....	Text associated with survival and standard transmitters
28	SET THE SMS ASSOCIATED WITH TEMPERATURE CONTROL TRANSMITTERS mmm... = text to associate (max.64 characters);	MTXT,mmmmm.....	Text associated with all transmitters with thermal probes
29	INTERNAL PROBES TEMPERATURE REQUEST	TEMP?	-
30	SET THE MINIMUM AND MAXIMUM TEMPERATURE THRESHOLD FOR AUTOMATICALLY SENDING THE TEMPERATURE VALUE (s = + o - , XX = temperature value in C°);	TEMP1sXX,sXX TEMP2sXX,sXX	-20,+85 -20,+85;
31	DISABLE THE TEMPERATURE THRESHOLD ENABLE THE TEMPERATURE THRESHOLD	TEMPOFF TEMPOFF	Disabled

32	REQUEST DEVICE FUNCTIONING	CKE	-
33	ACTIVATION OF THE SURVIVAL FOR TRANSMITTERS	ALARM,ON,S	Active
34	DEACTIVATION OF THE SURVIVAL FOR TRANSMITTERS	ALARM,OFF,S	-
35	ALARM ACTIVATION FOR STANDARD AND WITH SURVIVAL TRANSMITTERS	ALARM,ON,N	Active
36	ALARM DEACTIVATION FOR STANDARD AND WITH SURVIVAL TRANSMITTERS	ALARM,OFF,N	-
37	ALARM ACTIVATION FOR TEMPERATURE CONTROLLED TRANSMITTERS	ALARM,ON,T	Active
38	ALARM DEACTIVATION FOR TEMPERATURE CONTROL TRANSMITTERS	ALARM,OFF,T	-
39	SET THE MINIMUM AND MAXIMUM TEMPERATURE THRESHOLD FOR TEMPERATURE CONTROL TRANSMITTERS (s = + o - , XX = temperature value in C°);	TXTEMPsXX,sXX	-20,+85

7.2 PROGRAMMING VIA PC

The programming of the device via PC is carried out by a serial line connection using *Teleco Automation GSMPC software*; for the installation and operating procedure consult the relative manual *software installation and user instructions Ver. 1.41*".

7.3 TRANSMITTER OPERATING PROCEDURE(only for TVGSM100)

You are kindly asked to note that the check on the alarm received by a transmitter is carried out after 5 minutes since the first time the alarm was received. This is true in the case you memorized 2 or more channels of a transmitter(only for multichannel transmitters), too.

Example: in the case you memorized two channels of a standard transmitter and the TVGSM100 received an alarm by the first channel you have memorized, the next check on the transmitters alarm is carried out after 5 minutes even if the TVGSM100 receive meanwhile an alarm by the second channel memorized.

Settings:

- Memorization

It is possible to memorize three different types of transmitter and modify the set SMS messages for each category.

Three buttons P1, P2, P3 and three leds L1, L2, L3 are located on the card, with the following functions:

- P1: Memorizing a transmitter with survival.
Press and hold down the button, L1 lights up and remains lit.
Send the remote signal to be memorized, correct memorization is indicated by L1 flashing.
- P2: Memorizing standard transmitters
Press and hold down the button, L2 lights up and remains lit.
Send the remote signal to be memorized, correct memorization is indicated by L2 flashing.
- P3: Memorizing transmitters with temperature information
Press and hold down the button, L3 lights up and remains lit.
Send the remote signal to be memorized, correct memorization is indicated by L3 flashing.

- Cancellation

The same buttons are also used for cancelling:

- P1: Cancelling a transmitter with survival.
Press the button twice and hold it down, L1 lights up and flashes slowly
Send the remote signal to be cancelled, correct cancellation is indicated by L1 lighting up and remaining lit.
- P2: Cancelling single standard transmitters
Press the button twice and hold it down, L2 lights up and flashes slowly
Send the remote signal to be cancelled, correct cancellation is indicated by L2 lighting up and remaining lit.
- P3: Cancelling single transmitters with temperature information.
Press the button twice and hold it down, L3 lights up and flashes slowly
Send the remote signal to be cancelled, correct cancellation is indicated by L3 lighting up and remaining lit.

- Total cancellation

To cancel the entire memory content for a category of transmitters:

- P1: Cancelling transmitters with survival.
Press the button three times and hold it down. L1 lights up and flashes rapidly
Hold the button down for 10 seconds, correct cancellation is indicated by L1 lighting up and remaining lit.
- P2: Cancelling standard transmitters

Press the button three times and hold it down. L2 lights up and flashes rapidly
Hold the button down for 10 seconds, correct cancellation is indicated by L2 lighting
up and remaining lit.

P3: Cancelling transmitters with temperature information.

Press the button three times and hold it down. L3 lights up and flashes rapidly

Hold the button down for 10 seconds, correct cancellation is indicated by L3 lighting
up and remaining lit.

8 GUARANTEE CONDITIONS

The product is under guarantee for a period of 2 years from the production date (this can be found on the label inside the appliance).

The guarantee does not cover appliances that do not have a product serial number label.

The guarantee covers the free repair of device components that left the factory in a defective condition.

In cases where repair is impossible or repetitive failure of the same type the manufacturer may decide to replace the appliance which falls however within the terms of the original guarantee.

The guarantee does not cover parts that are defective for the following reasons:

- Negligence or inappropriate use.
- Incorrect installation.
- Damage that is not deemed to be caused by defects that occurred during the production of the appliance.