

# GSM REMOTE CONTROL AND TELEMETRY DEVICE 2 OUT / 2 IN / 2 AD GSM-C622



*User Manual*

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## 1. Introduction

The C622 is an GSM modem for the supervision and control of remote inputs and outputs.

The C622 allows the remote control, via a mobile phone, two electric supplies (relay outputs 10A 250Vac) via validated SMS messages preceded by a 4 digits password. The relays can be switched for a chosen time (from 1 to 19 seconds) or permanently or up to a reset command. In case of permanent switching, if desired, the status of the relays is stored and reset after a power off and a power on. After a relay has been switched, the GSM remote control replies to the mobile which sent the command with a SMS or making a voice call lasting some ring tone; in the last case the user gets, at no cost (only the ring), the information that the command has been executed. The C622 includes a Phone Directory containing 200 entries; the mobile numbers existing in the Directory can activate the relay 1, in monostable or bistable mode with a plain ring to the device without engaging the line and, then, at no cost (Opengate function).

The C622 has two digital optoisolated inputs controlled by means a continuous voltage ranging between 10V and 30V or with clean contacts. The state of the inputs can be sensed at every time sending a SMS message. One by one, every input can be set up to send a warning when the input value exceeds or falls below the set threshold.

When a warning event happens on the inputs (digital or analogical ones), the GSM remote control sends by its own a warning SMS including a text, customizable for every input, up to five mobile numbers. After the warning SMS has been sent, the C622 even makes a voice call lasting some ring in order to draw the user attention on the arrival of the message.

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## 2. Information

This handbook contains important information to install and use the GSM remote control C622; please read the handbook before to install or to put the device in use. The guarantee is no more valid if the instructions hereafter described are not followed. We cannot be kept as responsible for any damage to people or goods caused by the missed obedience to the safety instructions. The card may be damaged by electrostatic discharges; hold the device by the borders and avoid to touch the components.

### 2.1 Notice

During use of the C622 Short Messages (SMS) can be generated automatically. Costs may occur for you by this SMS traffic. Devices which are made out of modules have to be considered as an industrial product from the safety perspective.

### 2.2 Instruction regarding the safety

- Before opening of a device always pull the mains adaptor or make sure that the device is disconnected from the power supply.
- Components, modules or devices have to be build into a housing before they are put into operation. During installation they should not be connected to any power supply .
- You should only use tools on components, modules or devices if they are disconnected from the power supply and the electric charge, which may still be stored in some components, inside the device has been discharged.
- All cables and wires which are energised and connected to the device, the module or components have to be checked regularly for any damage of the isolation shield or fractures of the cables. If the supply cables are visibly damaged the device has to be taken out of operation immediately until the faulty cable has been exchanged.
- When using components or modules it is necessary to strictly observe the specification given in the corresponding description of these components.
- Devices which operate with >35 Volt have to be connected by a specialist.
- Before putting a device into operation, it has to be clarified, whether this device or module is meant for the field of application. In case of doubt ask specialists or the manufacturer of the device.
- Do not install this unit near medical device like pacemakers or hearing aids.
- Switch off the unit when flying.
- Do not place near the body, used in portable application is prohibited.
- Do not install near petrol station, fuel depots, chemical plants.



- Information relating to reducing the use of hazardous substances in electrical and electronic equipment, and disposal of waste. The symbol of bins crossed reported to the equipment or the packaging indicates that the product at the end of its useful life should be collected separately from other waste. The proper collection for the start of the next disused for recycling, treatment and disposal environmentally compatible helps to avoid possible negative effects on the environment and health and promotes reuse and / or recycling of materials which is composed the equipment. The improper disposal of the product by the keeper includes the application of administrative sanctions provided for by current legislation.

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## 2.3 Allowed applications

The device is built for the remote switching, via GSM network, of electrical devices and for the remote retrieval of the information regarding the inputs. Furthermore, the device can automatically generate SMS messages after one or more inputs have changed the state. Different uses from those here described are not allowed.

## 3. SIM setup

Get an active SIM card by a mobile GSM phone supplier. Insert the SIM in any mobile phone and disable the PIN request procedure. Verify that the command has been executed: turn the phone off and then on, verify that the phone gains the GSM network without need to insert any SIM unlock code. Erase the SMS messages that could exist in the SIM. Erase the numbers that could exist in the SIM directory. Verify that the function of ID send is enabled. Take away the SIM from the mobile and install it in the C622 according the corresponding notch. In order to withdraw the SIM, lightly push inward with a finger the SIM, remove the finger, the SIM is now unlocked, remove it.

## 4. Signal LED

**The green LED** indicates the state of the GSM connection with the net (mobile phone provider):

LED off: it means that the device is off.

LED fast blinking: the LED turns on for 0,5 sec with a period of 1sec: it displays the phase of network research,

LED slow blinking: the LED turns on for 0,3 sec with a period of 3 sec: it displays that the C622 is connected to the Network; it will, then, be able to send and receive SMS or to receive voice calls.

LED turned on: it displays that a call is running or the incoming or the sending of a SMS.

**The yellow LED** indicates the state of RUN; during the regular work it emits a blink on about 3 seconds

## 5. Programming (Setup) and Command SMS

The programming of the device and the request of specific operations to be done on the C622 side occurs sending to the GSM remote control (to the phone number of the inserted SIM) SMS messages. All the programming parameters and the phone numbers of the Users are saved in the non volatile memory of the device (they remain stored even cutting the power supply). The phone numbers programmed in the Phone Directory are stored in non volatile mode in the SIM inserted in the GSM remote control.

- Type with the maximum care the setup and command SMS (Setup) on a mobile phone and send them to the phone number corresponding to the SIM card inserted in the device.

- The device requests a four digit password (initially: "0000" [four zeros]); the password should be present at the beginning of every SMS message; please modify the password only after you came in familiarity with the device. If a SMS is sent with a wrong password, the remote control doesn't send any SMS of reply but makes the yellow LED blink three times.

- Make sure to add the "country code" when the phone numbers are inserted in the C622 (e.g. +39 for Italy).

- The reply messages to the SMS of setup and command are sent to the mobile phone which sent the SMS with the command.

- The C622 distinguishes between the uppercase and lowercase letters: so, e.g., the Q command is different from the q command.

- The C622 expects to read the caller code identifier (caller ID). Either when the voice calls are used (e.g. the Opengate call) or when are sent the Setup or Command SMS it is essential that the calling phone sends its own ID as well. In the mobile device verify that the setting "hide ID" is not set.

- When a SMS is sent, always wait that the C622 sends the reply SMS before to send a new SMS.

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## 6. Setup SMS

These SMS commands are very useful during the installation step: they allow to program the Password of the device, to know the Firmware level and the IMEI code, the strength of the GSM field and to choose the behaviour of the GSM remote control during the startup phase.

### 6.1 Command P (Password) - Password programming

Use this command to program a new password for the device. Every setup and command SMS must begin with the password.

*Sample: 0000P12341234*

Text of the SMS	Description
0000	Current password of the device
P	Command identifier
1234	New password
1234	Repetition of the new password

If the set up is correct, the device replies with the following SMS:  
**Setup command OK Password Updated**

Otherwise, the device will reply with the following SMS message:  
**Password Update Fail**

**Note:**

- The initial password of the device is **0000** (four zeros)
- The password can be setup of **digits** only and should have a **fixed** length of **4 digits**
- **Take carefully note** of the new password of the device

### 6.2 Command F (Firmware) - Read firmware level

This command allows to read the firmware level.

*Sample: 0000F*

Text of the SMS	Description
0000	Password of the device
F	Command identifier

If the command is correctly received, the C622 replies with the following SMS:  
**GSM-C622 R3, PS:5.02.003/AL:6.03.200, 357541000172165**

Text of the SMS	Description
GSM-C622 R3	Device code and software version
PS:5.02.003/AL:6.03.200	Microprocessor firmware version
357541000172165	GSM IMEI code

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### 6.3 Command E (Network) - Request network status

This command can be used during the installation of the device or, more in general, at any time in order to check the quality of the GSM signal.

Sample: **0000E**

Text of the SMS	Description
<b>0000</b>	Password of the device
<b>E</b>	Command identifier

If the command is correctly received, the C622 replies with the following SMS:  
**I TIM BSIC:23 RxQual:7 LAC:AEAD Id:5265 ARFCN:59 PWR:-80dBm**

Text of the SMS	Description
<b>I TIM</b>	Name of the Network operator or code of the Network operator preceded by the Country code
<b>BSIC:23</b>	Identifier of the base station
<b>RxQual:7</b>	Quality of the reception of the signal (0 to 7)
<b>LAC:AEAD</b>	Local area code
<b>Id:5265</b>	Cell identification code
<b>ARFCN:59</b>	Radio channel assigned
<b>PWR:-80dBm</b>	Quality of the radio signal, it can vary from -113 dBm to -51 dBm. In general, comparing with the usual mobile scale: -113 dBm: very weak signal, -111 to -103 dBm: 1 notch, -101 to -95 dBm: 2 notches, -93 to -85 dBm: 3 notches, -83 to -53 dBm: 4 notches, -51 dBm: 5 notches.

### 6.4 Command S (Power Up SMS) - SMS of power up

Every time the device is powered up, it can automatically send a SMS message or to make a voice call to the user mobile displaying the power up event. The message or the call are sent to every user number stored, if no user is stored the SMS is not sent or the call is not made. The sending of the power up message if initially enabled.

Sample: **0000S1**

Text of the SMS	Description
<b>0000</b>	Password of the device
<b>S</b>	Command identifier
<b>1</b>	Command: <b>0</b> disables the sending of power up SMS <b>1</b> enables the sending of power up SMS <b>2</b> enables the voice call of power up

If the command is correctly received, the C622 replies with the following SMS:  
**Setup SMS Power Up ON**  
Or  
**Setup Call Power Up ON**

If number 0 is sent in order to disable this function, the C622 replies with the following SMS:  
**Setup SMS or Call Power Up OFF**

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## 7. Management of the two relays ports

### 7.1 Command O (Output) - Remote switching of the ports

The C622 has 2 digital exit lines connected to 2 power relays which have the contacts (common, normally open, normally closed) available on a clamp board (see the below figure). With the relays, it is possible to remotely control every electric supply.

Sending the ON parameter, the relay is activated, the related LED is switched on and the contact closes.

Sending the OFF parameter, the relay is deactivated, the related LED is switched off and the contact opens.

Sample: **00001ON5**

Text of the SMS	Description
<b>0000</b>	Password of the device
<b>O</b>	Command identifier
<b>1</b>	Digital line exit the command refers to (digit from 1 to 2)
<b>ON</b>	Command type (ON or OFF)
<b>5</b>	time of stay in seconds (number from 1 to 9)

If the command is correctly received, the C622 replies with the following SMS:

**OUT 1 ON 5 sec**

Otherwise, the device will reply with the following SMS message:

**Output Fail**

The exit lines can be switched for a preset time (from 1 to 9 seconds) or in a **permanent way** or up to when an opposite command is issued. In this case, the state of the exit lines is stored in a non volatile storage and reset after a power off and on of the device or in case of a temporary break of the power to the device; this feature can be disabled with the command **OR (Outputs Restore)**.

In order to permanently switch an output it suffices to omit the amount of the stay time of the command SMS.

E.g., in order to permanently activate the relay n. 3, send the following command: **0000O3ON**

The device replies with the following SMS: **OUT 3 ON**

Otherwise, the reply can even be issued with the ring; see the **W** command.

### 7.2 Command OR (Output Restore) - Enables / Disables exit reset

The state of the exit lines is stored in a non volatile storage and reset after a power off and on of the device or in case of a temporary break of the power to the device; this feature can be disabled with the following SMS command:

Sample: **0000OR0**

Text of the SMS	Description
<b>0000</b>	Password of the device
<b>OR</b>	Command identifier
<b>0</b>	<b>O</b> =disables the automatic output reset; <b>1</b> =enables the automatic outputs reset

If the command is correctly received, the device replies with the following SMS:

**Setup Outputs Restore OFF**

If, on the contrary, the function is enabled, the device replies with the following SMS message:

**Setup Outputs Restore ON**

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## 7.3 Command W (Answer) - Activates / Deactivates the reply with the ring

The C622 sends a **SMS reply message** every time it receives and executes an output switching command (command O Outputs). Enabling the function "**ring reply**" the C622, after it has received a valid switching command and performed it, makes a voice call addressed to the mobile which has sent the message lasting some ring to which the user will not answer. In such a way, the user will get at null cost (only ring) the information of the successfully executed command. The function of answer with the ring is initially disabled. In order to activate or deactivate such a function, send a SMS with the command W followed by the digit 1 or 0.

Sample: **0000W1**

Text of the SMS	Description
<b>0000</b>	Password of the device
<b>W</b>	Command identifier
<b>1</b>	<b>1</b> = activates the reply ring; <b>0</b> = deactivates the reply ring

If the command is correctly received, the device replies with the following SMS:

**Setup Answer with Ring ON**

If, on the contrary, the function is disabled, the device will reply with the following SMS message:

**Setup Answer with Ring OFF**

## 8. The Opengate function

### 8.1 Command M (Memory) - Management of the Telephone Directory

The GSM remote control C622 includes a **Telephone Directory** having a capacity of 200 numbers. The numbers of the mobile 'phones inserted in the Directory can activate the output 1 in monostable or bistable mode, with a voice call only (without the engagement of the line and, then, at no cost). The C622 reads the ID of the caller and, if it's present in the active memory, activates the relay of the output 1; the function is named **Opengate**. To add or delete a number of the Directory, send the following SMS command:

Sample: **0000MA+393939002523\***

Text of the SMS	Description
<b>0000</b>	Password of the device
<b>M</b>	Command identifier
<b>A</b>	<b>A</b> to add a number or <b>B</b> to withdraw the number
<b>+393939002523</b>	Mobile phone number to add including the country code
<b>*</b>	End of message sign

If the command is correctly received, the device replies with the following SMS:

**Command OK ID Phone Add in Memory: +393939002523**

or

**Command OK ID Phone Remove in Memory: +393939002523**

or

**ID Phone not present in Memory: +393939002523**

In order to know the status of the Directory, send the command **M?** preceded by the password: **0000M?**

If the command is correctly received, the device replies with the following SMS:

**Memory Status Used, Total: 15,250**

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## 8.2 Command D - Activate / Deactivate the Opengate function

The mobile numbers inserted in the **Telephone Directory** can activate the exit 1, in monostable or bistable mode, with a voice call only (without the engagement of the line and, then, at no cost) using the Opengate function. The C622 reads the ID of the caller and, if it's present in the active memory, activates the relay of the exit 1 for 2 seconds in **monostable**, or switches (changes the state from active to inactive and viceversa) into **bistable**. The function Opengate is initially disabled. In order to activate and enable/disable the Opengate function, send the following SMS message:

Sample: **0000D1B**

Text of the SMS	Description
<b>0000</b>	Password of the device
<b>M</b>	Command identifier
<b>1</b>	<b>1</b> = enables the Opengate function; <b>0</b> = disables the Opengate function (initial set)
<b>B</b>	<b>B</b> = sets the bistable mode; <b>M</b> = sets the monostable mode (initial set)

If the command is correctly received, the device replies with the following SMS:

**Setup: Out1 Gate Opener ON Bistable**

or

**Setup: Out1 Gate Opener ON Monostable**

Otherwise, if the function is disabled, the device replies with the following SMS:

**Setup: Out1 Gate Opener OFF**

## 9. Setup up of the users phone numbers - Command U (Users)

Up to 5 **user phone numbers** can be inserted in the device; it's necessary to insert at least one mobile phone number. The SMS messages sent by C622 on its own following a particular event (Power UP SMS or an SMS generated by an alarm on the inputs) will be sent to the named 'phone numbers.

Sample: **0000U1+393939002523\***

Text of the SMS	Description
<b>0000</b>	Password of the device
<b>U</b>	Command identifier
<b>1</b>	Identifier of the number to set (a digit from <b>1</b> to <b>5</b> )
<b>+393939002523</b>	Mobile phone to be inserted including the country code
<b>*</b>	End of message sign

If the set up is correctly performed, the device replies with the following SMS:

**Setup command OK Phone 1 Updated: +393939002523**

Otherwise, the device replies with the following SMS:

**Phone update fail**

Note:

- The amount of 'phone number stored can be from 1 to 5
- It's necessary to insert one user mobile number, at least
- In order to erase, for instance, the mobile number in the 3rd position, please send the SMS: **0000U3\***
- The maximum length of every number is 16 digits
- Remember to always insert before the number the international prefix; for Italy it's **+39**
- Read carefully the SMS message sent back and verify that either the memory position and the phone number are correct.

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## 10. Management of the inputs

### 10.1 Command R (Read) - Read of the state of the I/O's

It's always possible to remotely know the state of the digital and analogical outputs and inputs sending the SMS command **R**:

**0000R**

Text of the SMS	Description
<b>0000</b>	Password of the device
<b>R</b>	Command identifier

If the command is correctly received, the device replies with the following SMS:

Sample: **OUT1=ON OUT2=OFF IN1=L IN2=H AN1=472(2312mV) AN2=450(2205mV)**

Where:

**ON** = relay is active, red LED on, contact closed

**OFF** = deactivated relay, red LED off, contact open

**H** = tension on, yellow LED on

**L** = tension off, yellow LED off

**472(2312mV)** = Decimal reading of the analogical input 1, between parentheses the corresponding value in mV

**450(2205mV)** = Decimal reading of the analogical input 2, between parentheses the corresponding value in mV

### 10.2 Command C (Call) - Activates / Deactivates the Alert ring

The C622 sends by its own Alert SMS messages to the **user mobile numbers** present in memory. The device sends **one SMS only** to each mobile. To draw the attention on such messages, it is possible to order to the C622 to make, after the SMS sending, even a voice call which lasts some ring (the receiver will not reply to) to notify the user of the arrival of the message. The function of the alert ring is initially disabled.

Sample: **0000C1**

Text of the SMS	Description
<b>0000</b>	Password of the device
<b>C</b>	Command identifier
<b>1</b>	<b>1</b> = enables the Alert ring; <b>0</b> = disables the Alert ring

If the command is correctly received, the device replies with the following SMS:

**Setup call After SMS Alert ON**

If, on the contrary, the function is disabled, the device replies with the following SMS:

**Setup call After SMS Alert OFF**

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### 10.3 Command A (Activate Inputs) - Inputs management reactivation

According to the type of application, the digital inputs reactivation can be set in Automatic or in SMS mode. The Analogical inputs reactivation, on the contrary, always occurs sending a SMS.

#### Reactivation with SMS

In this mode, in case of active input, the C622 sends a SMS to every user mobile number and, if enabled, makes even a voice call to every user mobile number; then it disables the input management. No more SMS (and no ring) will be sent to the Users even though the input again switches status. To notify the C622 to reactivate the management of that input it's necessary to send a SMS command.

#### Automatic reactivation

In this mode, the reactivation of the digital input management occurs automatically when the input itself returns to still state. For example, let's suppose to set the input 1 to work in normal state without tension (command: **0000ID1A#TestInput1\***). Applying a tension to the input 1, this will be activated and the remote control will start the Alarm procedure: the C622 sends SMS (and rings) to the User mobile and after it disables the input management up to when the tension lasts. When the tension drops and the input comes back in the normal state, the input management is automatically reactivated. The remote control will be able again to send a warning sequence if the input becomes active or if the tension is again applied. The same principle is true, reversing the tension condition, for the input set as usually with tension (command: **0000ID1P#TestInput1**).

To select the mode of reactivation, please send the following SMS command:

Sample: **0000A6**

Text of the SMS	Description
<b>0000</b>	Password of the device
<b>A</b>	Command identifier
<b>6</b>	Reactivation mode: <b>6</b> automatic; <b>7</b> with SMS (default condition)

If the command is correctly received, the device replies with the following SMS:

**Setup: Automatic Inputs Reactivation ON**

Or

**Setup: SMS Inputs Reactivation ON**

In the SMS mode, to reactivate the management of the input, it's necessary to send the Command A followed by the input to be reactivated:

Sample: **0000A1**

Text of the SMS	Description
<b>0000</b>	Password of the device
<b>A</b>	Command identifier
<b>1</b>	Input to be reactivated (number from <b>1</b> to <b>4</b> ) or number <b>0</b> to reactivate all the inputs

If the command is correctly received, the device replies with the following SMS:

**Setup: IN1 Reactivated**

Or

**Setup: All inputs Reactivated**

Note:

All the inputs are automatically reactivated after a power off and a power on.

## 10.4 Command ID (Inputs Digital) - Set up of the digital inputs

The C622 can manage 2 input lines connected to as many optocoupler; the LEDs, internal to the optocoupler, are available through a signal LED and a limiting resistor to the input clamps IN1 and IN2 (see the figure below). Setting a continuous tension ranging between 10 and 30 volts to the named clamps, the corresponding LED turns on and the INPUT changes state. The C622 can detect these changes of state of the inputs and send, by its own, to the exiting User mobile numbers a warning SMS (Alert). Every input can be set to work with a existing or missing tension. In either case, the presence or the absence of the tension should have a minimum duration of 2 seconds (which can be increased up to 32 acting on the parameter of additional time of presence) to ring the alarm.

- A (Absent)** - Indicates that the input senses, in normal operation, the tension missing.  
Raising to the input a tension for the set time, an alarm is generated.
- P (Present)** - Indicates that the input senses, in normal operation, a tension.  
Withdrawing the tension to the input for the set time, an alarm is generated.

Sample: **0000ID1A08#Allarm IN1\***

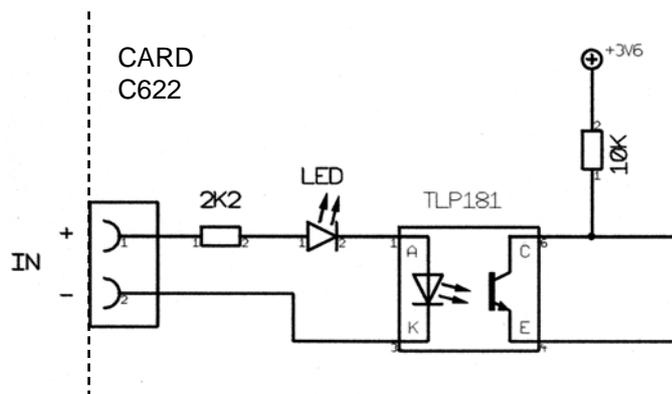
Text of the SMS	Description
<b>0000</b>	Password of the device
<b>ID</b>	Command identifier (Digital Input)
<b>1</b>	Line of digital input the command refers to (number from <b>1</b> to <b>2</b> )
<b>A</b>	Normal run mode ( <b>A</b> = missing tension; <b>P</b> = existing tension)
<b>08</b>	Additional time of presence in seconds; <b>two digits</b> from <b>00</b> to <b>30</b>
<b>#</b>	Beginning of message symbol
<b>Allarm IN1</b>	Text to be associated to the event of the input; maximum of 80 characters
<b>*</b>	End of message symbol

If the command is correctly received, the device replies with the following SMS:  
**Setup IN1 : Normal V Absent - Delay time: 8 sec - Event Text IN1: Allarm IN1**

In the opposite case, the device replies with the following SMS message:  
**Setup Input Fail**

When an input is activated, the C622 automatically sends an Alarm message to the User mobile numbers. Furthermore, if enabled, makes, to the named User mobile, a call that lasts for some ring to draw the attention on the arrival of the SMS. Regarding the above example, if a tension is set and lasts a time longer than 10 seconds (2+8), the C622 sends the following message:

**Alarm IN 1 V Present: Allarm IN1**



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## 11. Command IA (Inputs Analog) - Set up of the analogical inputs

The C622 can manage 2 analogical input lines connected to A/D 10 bit converter. Every input (AN1 and AN2 clamps) has a resistive cutter implemented in order to shield the converter against high tension and adjusted to a maximum tension of 5V. To the **AN** clamps we can raise a continuous tension ranging from 0V to 5V that the C622 converts in a decimal number between **0** and **1023**. The value of a decimal unit equals 5V divided by 1024 or **4,88 mV**. Then, e.g., the number 500 corresponds to 2,44V.

The C622 can gauge the value of the tension existing on the AN clamps and to send to the User mobile numbers a warning SMS (Alert) if the gauged value exceeds or is below the value of the set threshold.

**O** (Over) - A SMS warning is issued if the value in input **exceeds** the set threshold.

**L** (Less) - A SMS warning is issued if the value in input **falls below** the set threshold.

Sample: **0000IA1O0205#Alarm AN1\***

Text of the SMS	Description
<b>0000</b>	Password of the device
<b>IA</b>	Command identifier (Analogical Input)
<b>1</b>	Line of digital input the command refers to (number from 1 to 2)
<b>O</b>	Alarm condition ( <b>O</b> = Exceeds the threshold; <b>L</b> = falls below the threshold)
<b>0205</b>	Alert threshold in a <b>4 digits</b> number ranging from <b>0</b> to <b>1023</b>
<b>#</b>	Beginning of message symbol
<b>Allarm AN1</b>	Text to be associated to the event of the input; maximum of 80 characters
<b>*</b>	End of message symbol

If the command is correctly received, the device replies with the following SMS:

**Setup AN1: Alarm if AN1 Over 0205 - Event Text AN1: Allarm AN1**

in the opposite case, the device replies with the following SMS:

**Setup Input Fail**

If the tension existing on the analogical input 1 exceeds the value of 1V (4,88 mV x 205), the C622 sends, by its own, a warning message to the User mobile numbers. Furthermore, if enabled, makes even a voice call, to the user mobile, lasting some ring to draw the attention on the arrival of the SMS.

Regarding the above sample, the C622 sends a message like:

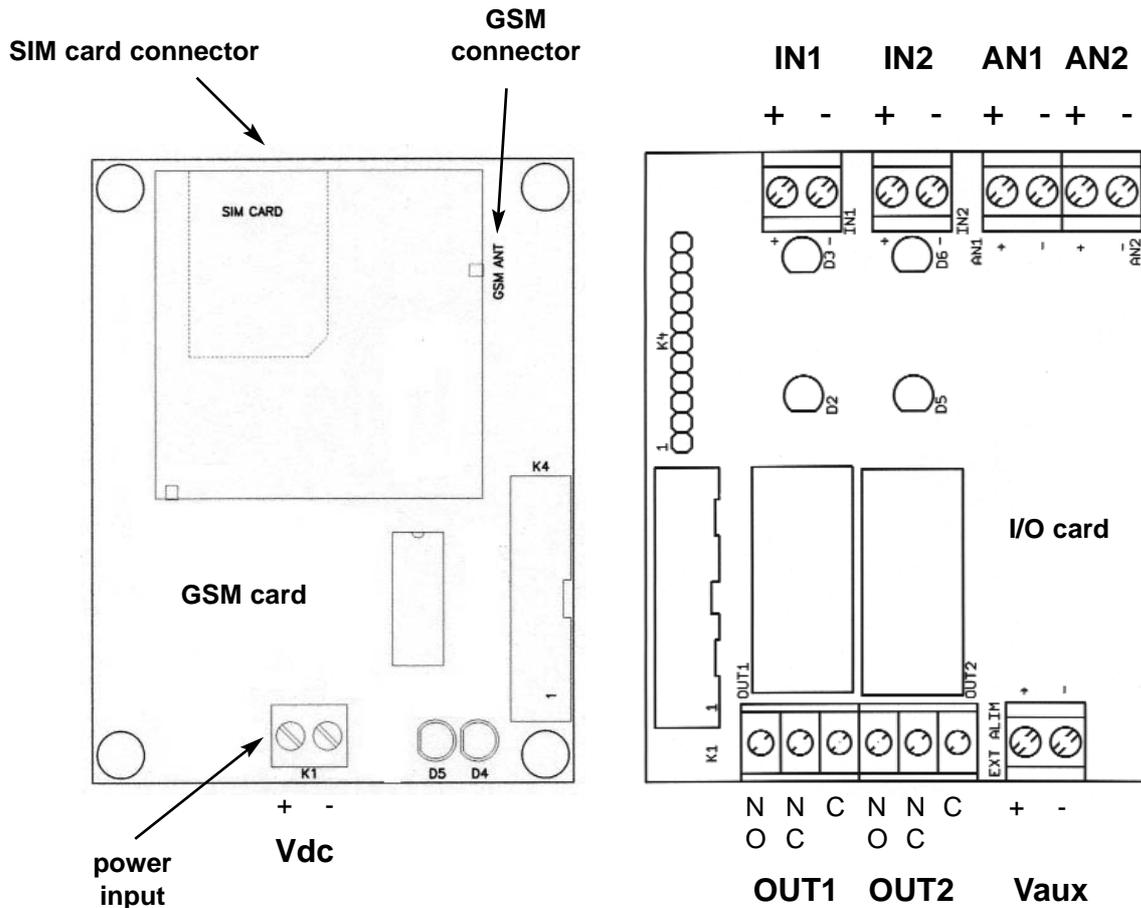
**Alarm AN1 Over Threshold AN1=677(3322mV) : Allarm AN1**

If the input is set up to send a warning when the existing tension falls below the set up threshold, the C622 sends a message like:

**Alarm AN1 Less Threshold AN1=411(2013mV) : Allarm AN1**

Similar considerations are true for the analogical input 2.

## 12. Clamp layout of inputs / outputs



### GSM card

**Vdc +** power input 12Vdc (positive)  
**Vdc -** power input 12Vdc (ground)

**D4** yellow CPU state indicator  
**D5** green GSM Network state indicator

### I/O card

**OUT1 NO** Contact normally open relay Out 1  
**OUT1 NC** Contact normally closed relay Out 1  
**OUT1 C** Common contact relay Out 1

**OUT2 NO** Contact normally open relay Out 2  
**OUT2 NC** Contact normally closed relay Out 2  
**OUT2 C** Common contact relay Out 2

**Vaux +** Positive exit auxiliary power (coincides with the positive pole of the feeding)  
**Vaux -** Ground exit auxiliary power (coincides with the ground of the feeding)

**IN1 +** Positive digital input 1  
**IN1 -** Ground digital input 1

**IN2 +** Positive digital input 2  
**IN2 -** Ground digital input 2

**AN1 +** Positive analogical input 1  
**AN1 -** Ground analogical input 1

**AN2 +** Positive analogical input 2  
**AN2 -** Ground analogical input 2

**D2** red Turns on when OUT1 is active  
**D5** red Turns on when OUT2 is active

**D3** yellow Turns on when IN1 is active  
**D6** yellow Turns on when IN2 is active

## 13. Technical characteristics

### GSM section

- Quad-Band modem  
GSM/GPRS 850 / 900 / 1800 / 1900 MHz
- Output power Class 4 (2W) @ 850 / 900 MHz
- Output power Class 1 (1W) @ 1800 / 1900 MHz
- Sensitivity -107 dBm @ 850 / 900 MHz
- Sensitivity -106 dBm @ 1800 / 1900 MHz

### Logic of control

- Microcontroller RISC in nanoWatt technology
- External oscillator 20 MHz
- 64 Kbyte of programmable memory
- 3986 byte of data memory

### General data

- Password protection on every command
- 2 relay output managed by SMS
- Management of one exit with a zero cost call

- Reply to the commands with SMS or voice ring call
  - Temporarily or permanently controllable exits
  - Outputs automatic reset (excludable)
  - Relays connection power 10A 250Vac
  - 5 programmable user mobile
  - Phone directory capable of 200 entries
  - 2 digital inputs optocoupled managed with tension (10 to 30 Vdc)
  - Management of digital inputs with N.C. or N.O.
  - 2 analogical inputs 0 to 5 Vdc at 1024 bits
  - Setup of warning analogical thresholds
  - Sending of warning SMS with customizable text
  - Sending of voice ring after a warning SMS (excludable)
  - Sending of Power Up SMS (excludable)
  - 12 Vdc power supply
  - Maximum electrical input 500 mA
  - Working temperature: -10°C to +55°C
- The specifications can change without notice.

## 14. Warranty

This product is guaranteed from defects of components and assembly as stated by the Law for the duration of two year from the date of purchase. The warranty is valid only if the user has an original purchase copy as the invoice or the fiscal receipt.

The producer responsibility is limited to the defect repair or, if necessary, to the substitution or repair of the defective component. The costs and the risks connected to the transportation, the removal or the reposition of the product and whatever further cost directly or indirectly connected to the repair cannot be charged to the producer. The producer cannot be kept as responsible of whatever damage caused by a malfunction of the product.

### 14.1 Technical support

For the technical support related to the product and the repair you can contact us at the following address:  
**support@evr-electronics.com**

The producer reserves the right to change the product specifications or to cease the production of the products without warning and to have to add or give the new functionalities or the new instructions in the products already sold. The producer cannot be kept as responsible for losses or damages, either direct or indirect that may come by the product use. The products are not suitable for the use as parts of systems of life support or systems which can create dangerous situation of whatever type.

Model: GSM-C622  
File: GSM-C622-R5 User manual  
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