TEHNOPOL Ltd.

GSM-AlarmSyS

GSM system for signal transmission from an alarm system to a central alarm monitoring station / a CD1000 receiver station or a PC/ by an SMS or by dialing a mobile GSM
GSM dialer for central and personal alarming with a feedback / output control/
(GSM-D4T4)

Technical Description and Programming Manual
(Version 5.0)

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The GSM-D4T4T4 module is designed to send text messages and give a ring in case of a general alarm sent by any alarm system /sending an SMS or giving a ring to four GSM phones); output control in pulse or triggered operating mode.

1. Description of the GSM-D4T4 module

The GSM-D4T4 module needs to be connected to a security station.

In the GSM-D4T4 module connected to the security station, the following parameters of the object should be programmed /the numbers of the GSM phones to be dialed; the number of the CD1000 receiver station, the Object number, the radio format of the data transmitted; the time for test signal transmission, etc. For further information, please refer to Chapter "Programming the GSM-D4T4 module". The station number and the radio format parameters are used for connection to the CD1000 receiver station /the first two digits of the object number/.

Dialing is valid only for ALARMA-SIRENA input or if the output is triggered /– only in pulse regime of the output/. Option for remote ON/OFF of the dialing function.

Events which are sent by the module – a 6-digit object number / Station number(1), RF(1), Object number(4)/: OPEN, CLOSE, ALARMA-SIRENA, REST-SIRENA, LOW BAT, BAT OK, AC TROUBLE, , AC RESTORE, STARTING, TEST, RL-OFF, RL-ON. These events are sent via an SMS to 4 GSM phone numbers stored in the module. The module is provided with an option to switch off groups of signals, e.g. AC trouble and AC restore; a GSM number selected /from those programmed in the module / for receiving SMS messages or turning them off. Remote programming is possible from any GSM phone by an SMS.

2. Description of a GSM-D4T4 module connected to a security station

The GSM-D4T4 module includes a GSM modem for which all operating rules applicable to a GSM phone should be followed.

GSM-D4T4 module interface

The GSM-D4T4 module receives signals from the inputs monitoring the status of the secured object. These inputs are controlled by GND /preferably to be provided from the module power supply/. Power supply for the module should be provided from the security station since the power consumption of the GSM modem in the GSM-D4T4 module is variable. Depending on the signal levels in the GSM network, it might reach peaks of 0,5A/13,8V. Make sure that the sensors connected to this input do not exceed the maximum allowable current to avoid any possible actuation of a protection in the security station. If necessary, you can connect the GSM-D4T4 power supply to the battery of the station. You can also use an additional external power supply unit, which should not be necessarily made compatible to the GND. Supply voltage should be at least 9V.

The signals subject to control are as follows: Open, Close, Battery low, Battery recovered, Lack of 220V , 220V recovered, Siren activated, Siren recovered, ON/OFF input status.

The Battery Low/Battery Recovered signal is generated from the GSM-D4T4 module power supply.

The input status signal generates a ring when the input is activated (in pulse regime of the output) / a command received for output activation/, and it sends an SMS with the output status when the output is deactivated /upon expiry of the preset hold-on time/. In triggered regime of the output SMS for the status are sent.

The module is equipped with a programming connector / for programming use only the cable supplied by the manufacturer – refer to Chapter "Programming the GSM-D4T4 module"/.

To ensure proper operation of GSM-D4T4 module, you should delete the SIM card's PIN code. When using a SIM card always disconnect the GSM-D4T4 module power supply.

CAUTION: FAILURE OF THE GSM PHONE DUE TO EXPIRY OF ITS SIM CARD MIGHT RESULT IN MISSING OR LOSS OF SIGNALS SENT FROM THE SECURED OBJECT

2.1. Order of module installing and starting when connected to a security station

The GSM-D4T4 module needs to be preprogrammed to the parameters of the secured object. The SIM card should be appropriately prepared i.e. activated and PIN code deleted.

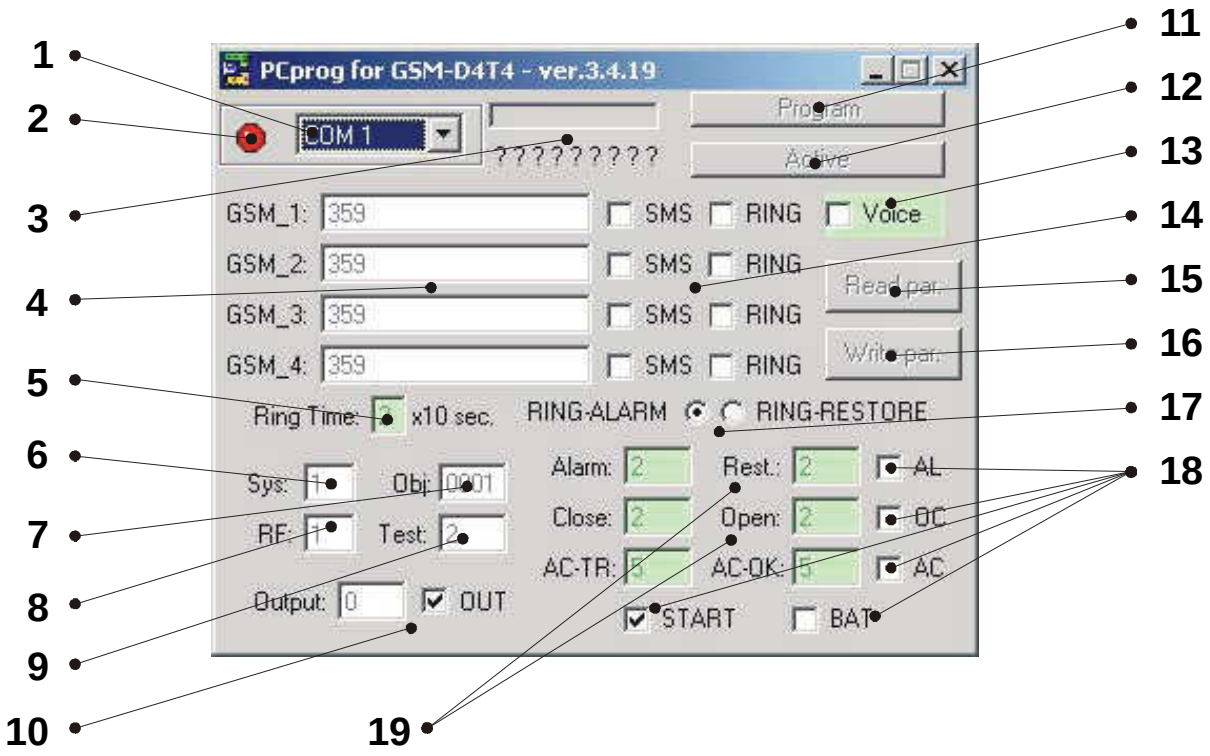
1. Connect the sensors to the security station.
2. Connect the GSM-D4T4 module to the security station.
3. Connect the GSM-D4T4 module power supply to 13.8V if an external power supply source is used – making the GND of this power supply compatible with the security station is a MUST.
4. Energize the GSM-D4T4 module if an external power supply is used.
5. Energize the security station and the module.

2.2. Programming the GSM-D4T4 module

Programming of this module should be done using a special software called "PCprog for GSM-D4T4" and an RS cable for connection of the module to the computer /vendor's supply/. Programming can be done without disconnecting the GSM-D4T4 power supply.

1. Start the programming software – by selected and activated a serial port.
2. Remove the jumper situated close to the programming connector.
3. Connect the RS programming cable.
4. Reset the GSM-D4T4 module by pushing the "RESET" button located near the programming connector or by energizing the module. Enter the programming mode.
5. Reading of the module parameters.
6. Program the required parameters.
7. Record the parameters in the module.
8. Exit the programming mode.
9. Disconnect the RS programming cable.
10. PUT THE JUMPER BACK IN PLACE. FAILURE TO DO SO WILL RENDER THE MODULE DISFUNCTIONAL.
11. PRESS THE ***"RESET"*** BUTTON TO PROCEED WITH FULL INITIALIZATION OF THE MODULE AND THE GSM MODEM

Programming software for GSM-D4T4 - "PCprog for GSM-D4T4"



1. Select a COM port
2. Activate/Deactivate the COM port
3. ***?.?.?.:*** Information field of the current module operating mode – active, RESET, programming, read and store, Process execution band.
4. ***GSM1,…., GSM4:*** The numbers of the GSM phones allocated to receive SMS. When entering a number always keep the following sequence: "359" (the international code for Bulgaria, no "+" required), then "889" /the operator's code/, and "239060" /the subscriber's number/. Maximum 18 digits allowed.
5. ***Ring Time:*** Continuity of ringing to the receiving GSM phones / step by 10 sec./
6. ***Sys:*** The number of the CD1000 receiver station. This number should be the identical with the number programmed in the CK025 module and it should correspond to the number of the receiver station in the monitoring station. It is only used for connection to a CD1000 unit.
7. ***Obj***: The number of the secured object for which the signals are intended. Valid values: 1 to 8000.
8. ***RF:*** Radio format of the data transmitted. Valid values: 0 to 2. When operating a CD1000 it is advisable that you use RF=1, whereas with IGP8000 you MUST use RF=0. Intended only for connection to a CD1000 unit.
9. ***Test:*** The time in hours set up for period test signals sending. Valid values: 0 to 240 hours. If this value is set to "0" no test signal will be sent.
10. ***Output:*** The time in seconds for hold-on time the output in pulse regime. Valid values: 0 to 240 seconds. The value of 250 activates triggered regime of the output. If this value is set to "0" no output control is maintained. The flag **OUT** allows/ forbids SMS sending for the output status.

11. ***Program:*** Entering the module programming mode. Once you have energized the module or pressed its RESET button you have 20 seconds to enter its programming mode /RESET will appear in the information field/. After the end of that time /20sec./ the module will switch to the active mode. To exit the programming mode, press either the Active or the Reset button on the module.
12. ***Active:*** Exit the programming mode.
13. **Voice:** Ringing regime to the receiving GSM phones /Voice/CSD/
14. **SMS, RING:** Flags for SMS and RING to the receiving GSM phones.
15. ***Read par.***: Reading the parameters at the module.
16. ***Write par:*** Storing parameters in the module. In case of incorrect data entered in this field, it will be nullified and storage will be disrupted. Once correct data entry is completed the data is verified
17. ***RING-ALARM/RING-RESTORE:*** Select a status for input ALARMA-SIRENA and ringing to the receiving GSM phones.
18. ***AL,OC,AC,BAT, START:*** Flags to allow/forbid sending SMS to the receiving GSM phones.
19. Responsiveness of the inputs for each status / step 100 msec./

2.3. Operating the GSM-D4T4 module output

The GSM-D4T4 module has one output /with an open collector to the neutral or a relay/.
If its value is set to 0 the relay activation function will be OFF.
If the output's hold-on time is 1 to 240 seconds – PULSE regime.
The output's hold-on time is 250 seconds –TRIGGERED regime.

2.3.1. Operating in PULSE regime. The output's hold-on time is 1 to 240 seconds.

The output is activated by a ring-up. Upon receiving of a ring the connection will be interrupted, the output gets activated /GND made available/, the module will give a ring to the allocated GSM phone numbers /if they are enabled/. After elapsing of the output's preset hold-on time, the output will return to its initial status /GND missing/, the module will send an SMS to the SMS-allocated /if they are enabled and if the SMS sending feature upon expiry of the relay hold-on time is enabled/. The output hold-on time and the SMS sending feature upon expiry of the output hold-on time might also be programmed remotely by an SMS.

2.3.2. Operating in TRIGGERED regime.

The output status is changed by an SMS and is stored in power – dependent memory. In case if Reset or Switching OFF the power supply, the output recovers its status after restarting work.
Each change in output status is announced by an SMS.
Option for switching Off the SMS announcement.

3. Parameters that cannot be programmed remotely

The parameters that CANNOT be programmed remotely by SMS are colored in green in the programming software of GSM-D4T4

Remote commands by SMS to change the parameters of the module.

The fulfilled within one minute after an SMS has been received.

1.1. Enable sending an SMS to GSM 1 or 2
GS[xy]E
x – GSM1 …GSM4 /1, 2, 3, 4/
y – activate(1)/deactivate(0)
Example: gs11e –GSM1 activated
gs20e –GSM2 deactivated

1.2. Enable voice dialing a GSM allocated for AL-SIRENA signals
GR[xy]E ; x – GSM 1(1); GSM 2(2)
; y - activate(1)/deactivate(0)
Example: gr11e
gr20e

1.3. Changing the object and station number
S[abxxxx]E
a – station number /0…7/
b - – RF /0 ... 2/ ; xxxx – object number /0000 ... 9999/
Example: s104422e

1.4. TEST signal time change
T[xxx]E
xxx – times for TEST signal sending /000 ... 240/; 0h – no TEST signal is sent
TE – without parameter sends back (SMS – OK)
Example: t006e

1.5. Changing the relay hold-on time
R[xxx]E
xxx = (1…240)– number of the seconds for set for a relay hold-on time after a command (ring-up) has been received
xxx = 250 – "TRIGGERED REGIME" – control by SMS
xxx = 0 – relay activation disabled
Example: r010e

1.6. Control of relay output in "TRIGGERED REGIME"
OR[x]E
x = 0 – „RELE-OFF" / lack of GND on the output/;
x = 1 – „RELE-ON" /GND on the output/
Пр.: or1e – the output remains with GND available

1.7. Enable sending an SMS allocated for BAT /LOW, REST signals
IBT[x]E ; x - activate(1)/deactivate(0)
Example: ibt1e

1.8. Enable sending an SMS allocated for AC /TROB, REST signals
IAC[x]E ; x - activate(1)/deactivate(0)
Example: iac1e

1.9. Enable sending an SMS allocated for OC /OPEN, CLOSE signals
IOC[x]E ; x - activate(1)/deactivate(0)
Example: ioc1e

1.10. Enable sending an SMS for AL-SIRENA /ALARM, RESTORE signals
IAL[x]E ; x - activate(1)/deactivate(0))
Example: ial1e

1.11. Enable sending an SMS allocated for STARTING signals
IST[x]E ; x - activate(1)/deactivate(0)
Example: ist1e

1.12. Enable sending an SMS after elapsing of the relay hold-on time
IRO[x]E ; x - activate(1)/deactivate(0)
Example: iro1e

The command is fulfilled within one minute after an SMS has been received.

Appendix 1

A circuit board (CB) for signal reception regardless of the alarm system type, and for data transmission by SMS sending or dialing (GSM dialer D4T4).

All inputs are controlled by GND.

- When GND is available:
  at O/C input – (OPEN)
  at AL input – (RES-SR)

- When GND is missing:
  at O/C input – (CLOSE)
  at AL input – (AL-SIR)

AC is supplied to the "AC" input from the secondary winding of the mains transformer designed to control the 220 V AC power supply. The power supply voltage should be within 7 to 30 V AC.

The "OUT" mark indicates an output provided for a collector opened to GND