elmes ® electronic

GSM ALARM MONITOR & REMOTE CONTROL MODULE Elmes GSM2 (EN)

The device allows monitoring of events occurring in alarm and security systems as well as operation in remote control systems by means of SMS notifications and CLIP calls, in any mobile phone 900/1800/1900 MHz GSM network. In remote control operation, devices can be directly connected to its relay outputs and controlled also by means of SMS & CLIP (Calling Line Identification Presentation - a supplementary GSM service used to show the number of a caller). Specified below are characteristic features of Elmes GSM2 module:

- Mobile phone integrated GSM transceiver (CE, FCC and SGS certified).
- Four, user programmable, set high (7-12V) or set low (0-3V) control input voltage levels.
- Four SMS controlled and isolated relay outputs with NO (Normally Opened), or NC (Normally Closed) terminals.
- Relay outputs operation in Pulse Mode (programmable time-lapse), or On/Off Mode (bistable).
- Outputs are set on by means of SMS or CLIP from up to 255 phone numbers, or by input alarm zone violation.
- Alarm monitor SMS & CLIP notifications are send to up to six preregistered phone numbers.
- Periodical communication test by SMS or CLIP send to one or two phone numbers, at user's specified day time or time interval.
- User set limited number of SMS notifications send daily.
- TAMPER switch monitoring of module's box cover opening.
- Module configuration, firmware upgrade and user preference parameters are set in "GSM2 Configurator" software made for Windows® based PC (Personal Computer). The software is available for download at manufacturer's web site: www.elmes.pl

Control Inputs

Elmes GSM2 module features four control inputs with 12VDC(!) maximum allowable input voltage level, as measured with reference to module's ground (minus power supply). Inputs feature the following "GSM2 Configurator" software set parameters:

- Input set on (activation) voltage level – low (below 3VDC), or high (above 7VDC).
- Phone numbers to which SMS notifications are send on input set on (change from inactive to active).
- Phone numbers to which SMS notifications are send on input set off (change from active to inactive).
- SMS notification text contents on input set on and off (up to 64 characters each).
- Phone numbers CLIP calls are made to on input set on.

When CLIP call is made to phone number engaged or unavailable, the call is redialed three times. First however, the module attempts to call remaining phones from predefined list and then returns to redial the unmade call. Calls are considered made when:

- call is rejected;
- call is received and ended by call recipient;
- call is received and ended by the module due to predefined notification time passage (up to 99 seconds);

Contrary to earlier GSM2 models, starting from software ver. 2.10, if a call is either not rejected nor received but the defined notification time has passed, the module would not acknowledge the call as received and will attempt to redial three times.

Control Outputs

Elmes GSM2 module features four control relay outputs. Each output has two installation terminals jumper configured to operate in normally opened (NO), or normally closed (NC) mode (see figure 1). Outputs feature the following "GSM2 Configurator" software set parameters:

- output name (up to 16 characters max.);
- one of four possible operating modes;
- selection whether output's relay is set ON, or set OFF on output activation.

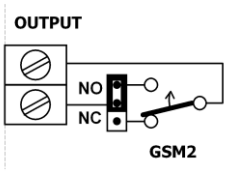


Fig. 1 Output

Outputs can be controlled by SMS command sent to the module. The user sets the following parameters:

- whether SMS command is protected by preceding password;
- whether SMS command can be sent from any, or module listed only phone numbers;
- whether SMS command letters case (lower or upper) has meaning;
- whether the module confirms command execution by return SMS or, in case of error, confirms command rejection.

The GSM2 outputs can be also controlled by calling to module's number from one of its 255 listed numbers. Each of these phone numbers may have predefined one or many assigned for simultaneous control outputs. This mode allows programmed time pulse control of outputs only (bistable "on/off" operation is not permitted). The third and last available control mode of GSM2 allows predefined output/s control by assigned to it input violation. This control mode does not allow bistable "on/off" operation either.

SMS text command format depends on selected operating mode of module's outputs, as below:

Output's Operating Mode	Examples of SMS commands content and their meaning
1. Pulse Mode with preset set on time.	„OUT1" – Sets on output OUT1 for time preset in GSM2 Configurator
2. Pulse Mode with set on time defined in SMS text.	„OUT1 1:30" – Sets on output OUT1 for 1m30s „OUT1" – Sets on output OUT1 for time preset in GSM2 Configurator
3. Bistable Mode – on/off.	„OUT1 Y" or „OUT1" – Sets stable on output OUT1 „OUT1 N" – sets off output OUT1
4. Any mode defined in SMS command	„OUT1" – Sets ON output OUT1 for time preset in GSM2 Configurator „OUT1 1:30:00" – Sets on output OUT1 for 1h30m „OUT1 Y" – Sets stable on output OUT1 „OUT1 N" – Sets off output OUT1

Remark: command strings are space separated and quotation marks are not used!

- After applying name to output, the name should be then used in SMS commands, e.g. „STOVE 1:30:00" (switch on stove for 1h30m).
- In output bistable operation mode, letters T, Y, t, y can be used to mark set on while N, n to mark set off.
- In monostable (pulse) operation mode, output set on time can be specified as: HH:MM:SS, MM:SS or SS where ":" can be substituted by . / \ e.g. „OUT1 1.40.00" (one hour and 40 minutes); „OUT1 5/20" (5 minutes 20 seconds); „OUT1 6" (6 seconds).
- Single SMS command can control any number of outputs, e.g. „OUT1 OUT2 5 OUT3 T OUT4 12.00".

Correct SMS command is executed immediately after its receipt and, if this option is selected, confirmed by return SMS with "OK". If command contained any error, such as improper output name, incorrect password or content, the command is not executed and, if this option is selected, "ERROR" SMS is returned. Typical error could be SMS command "OUT1 Y" sent to output that operates in monostable mode (1 & 2) or, execution of SMS command "OUT1 5:00" when the output is defined to operate in mode 1 (Pulse Mode with predefined set on time).

Communication Test

GSM2 module features periodical communication test by making CLIP call or sending SMS to one or two predefined phone numbers. The SMS text containing up to 31 characters can be programmed starting from software ver. 2.10 only. Earlier versions allowed SMS notification "TEST" only. In "GSM2 Configurator" it is possible to define whether the test is performed once daily at specified time, or at specified time interval, e.g. every 8 hours. In the first case, module's real time clock should be set first either in Configurator software, or by SMS with password followed by text "TIME HH:MM:SS" or "TIME HH:MM". Example: "TIME 12:30" sets the real time clock to 12:30. Then, set the timing of communication test. NOTE! Time setting SMS must include a valid password.

Periodical test can be forced to perform at any time by resetting test time counter, e.g. by sending SMS with "RESET". Within a minute the test will be performed and next test will be made after preset time interval, e.g. after 8 hours. The SMS command must include password.

Communication test can also be done at any time by calling module from any of its listed phones. The call would be rejected and, if the option is set on, a return call will be made proofing proper communication status.

IMPORTANT NOTE! Before module first use prepare SIM card with active PIN code card access protection and preset PIN **1234**. The required PIN code can be preset in any mobile phone operating in the same GSM network. In case of GSM2 module with firmware 2.11 or higher, SIM card without active PIN code can be used, i.e. with card access protection set off. The SIM card must have SMS memory and phonebook cleared and voicemail disabled. **The use of SIM card with other PIN code is not allowed and may result by the card being**

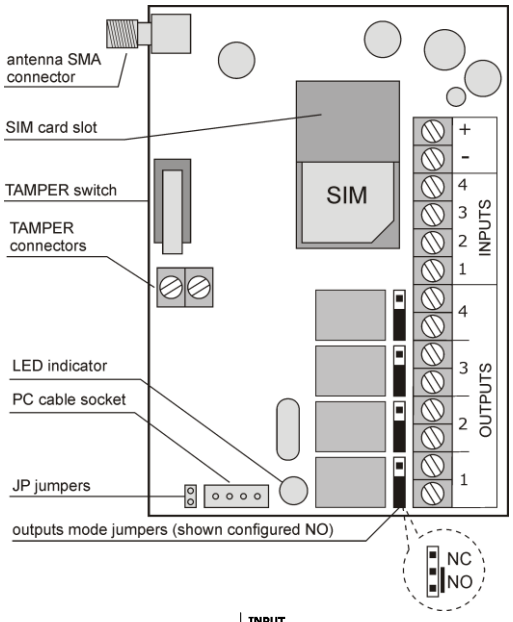
Programming the Module

GSM2 module can be programmed and tested with „GSM2 Configurator" PC software before, or after installation. The latter allows GSM diagnostics, e.g. GSM signal reception test in place of module installation. To connect the module to PC a dedicated Elmes made mini USB-RS cable (sold separately) is needed. The cable can be optionally ordered from Elmes Electronic or its distributors. To use the cable a dedicated software driver must be installed on the PC. GSM2 Configurator software as well as mini USB-RS cable driver can be downloaded from the manufacturer web site: www.elmes.pl. The user should make sure that GSM2 Configurator software current version is installed on the PC. If not, then it should be uninstalled by means of Windows® Control Panel Add/Remove Programs steps and latest version installed.

(!) The following steps should strictly be followed when connecting GSM2 to PC:

1. Make sure SIM card with PIN 1234 is inserted in SIM socket (in case of GSM2 module with firmware 2.11or higher SIM card without active PIN code, i.e. with card access protection set off can be used).
2. Connect power supply to the module (12VDC/1A).
3. Connect mini USB cable plug to socket in the module.
4. Connect USB cable plug to USB socket in PC.

When disconnecting, reverse steps should be followed.



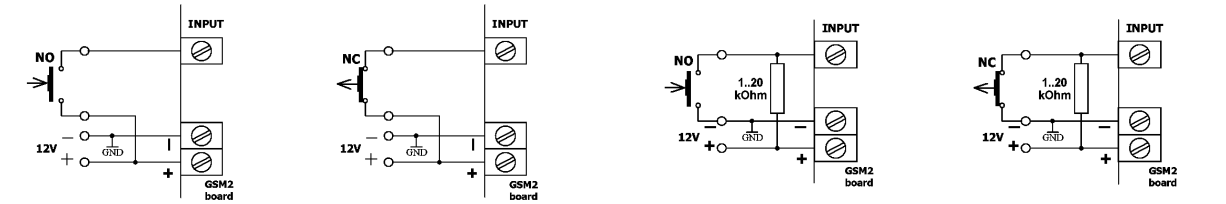
JP Jumper Use

The jumper is used only if module's firmware upgrade process has not succeeded properly, e.g. power supply set off while in upgrading. In that case, the jumper should be set ON followed by power supply switched on. The module starts firmware upgrade now.

Installation Hints

The module can be installed indoor only, in dry place. Poor GSM signal reception places should be avoided. To improve reception a dedicated external GSM antenna can be used and connected to SMA socket, in place of the supplied antenna. With the supplied screws bottom part of the module's plastic case should be installed to wall observing upwards direction of module's antenna. SIM card should be inserted, antenna screwed in and input-output wire connections should be made with cables put through dedicated cable hole in the bottom cover, or through holes made in purpose. Connection of power supply is signalled by fast flashing LED. Slow flashing LED, ca every three seconds, indicates module registration in GSM network. Registration procedure takes 30 to 60 seconds.

Input Control Wiring Examples



A. Input +12V controlled, NO Activation level H	B. Input +12V controlled, NC Activation level L	C. Input ground controlled, NO Activation level L	D. Input ground controlled, NC Activation level H

NOTES!

1. Grounds of external control device and GSM2 module must be short connected.
2. NC – normally connected state at standby. NO – normally opened state at standby. Change of state activates GSM2 input.
3. Resistor in examples C and D in 1kOhm..20kOhm range. Optimal value 4.7 kOhm. Note that internal input resistance is 38 kOhm and voltage high state must be above 7V.
4. GSM2 inputs activation level (H – high, or L – low) is selected with „GSM2 Configurator" software.

Specification

Integrated GSM transceiver module made by SIMCOM (CE declaration and SIMCOM module CE certificate attached).
Power Supply 12VDC (allowed voltage range: 10-20DVDC), rating max.1A, standby 5mA.
Four control inputs rating 0..12VDC maximum with reference to ground (-V power supply).
Four control relay outputs NO/NC type rated 0,5A/130VAC or 1A/30VDC.
GSM control from up to 255 phones. Notification to up to 6 phone numbers.
Indoor operation only with temperature range: 0 +40ºC. Dimensions: (L/W/D) 96/63/28mm, without antenna.

Manufacturer: ELMES ELECTRONIC, 54-611 Wroclaw - PL, ul. Avicenny 2, tel. (071) 784-59-61, fax (071) 784-59-63

Manufacturer's Limited Warranty:

Elmes Electronic alarm, security and remote control products carry two years manufacturer's warranty as from the date of purchase. The warranty is limited to the replacement of faulty original parts or repair defects of improper manufacture. Damage, faulty use or improper handling by the user or installer as well as any changes in product's hardware or software caused by the user violets the warranty and all due repair costs will be charged. Elmes Electronic shall not be responsible for any human or material damage caused by its products failure to operate correctly.

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