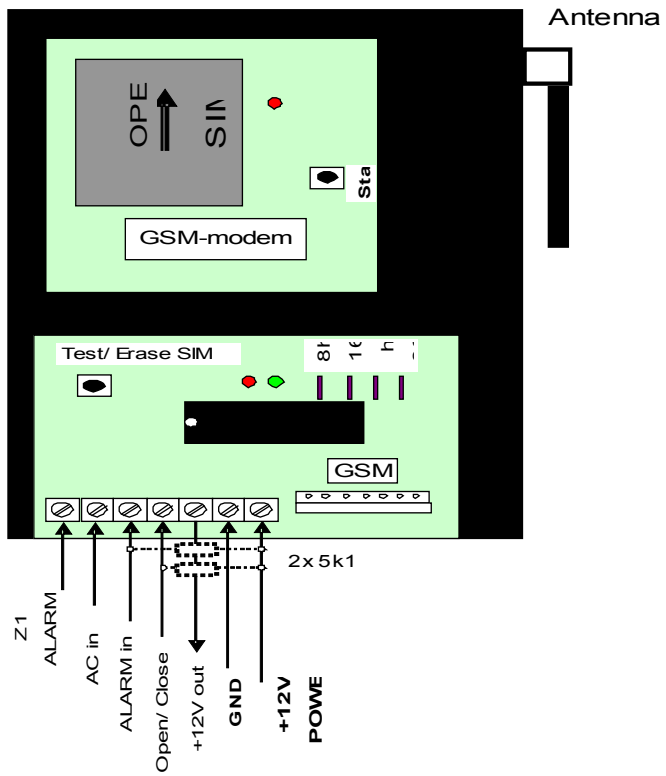
MODULE: GSM-dialler + GSM - modem

TECHNICAL FEATURES:

Quantity of telephone numbers	Up to 9 numbers
Number of dialling cycles	3
Power supply voltage	12V, 250mA
Control	dropout +12V, input +12V, dropout "ground", input "ground"
Submitted SMS-s	Open!, Close!, TEST OK, AL Z1, NO AC, AC OK, Out=1, Out=0
Call duration	40 sec./ tlph.



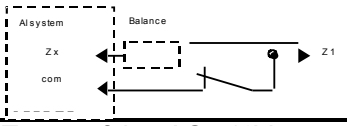
This module has been designed to work with all types of alarm systems.

CONNECTION

We recommend connecting the dialler with all voltage points of the alarm system switched off!
The dialler is activated at changing the control voltage at the respective terminal.
The dialler control terminals are set to "ground" by internal resistors.
In this case, the “input +12V”, and “dropout +12V” control shall be connected directly to the respective input.
If any of the dialler terminals is to be controlled by “ground input” or “ground dropout”, a resistor of 4,7kΩ - 5,6kΩ has to be connected externally between +12V and the respective terminal, as shown on the scheme by a dotted line.
At a power supply of 12V, the dialler records the control terminals condition as follows:
- input “alarm” not activated;
- input OPEN/ CLOSE in OPEN mode;

That is why, when connecting 'under voltage', first connect the control circuits to the alarm station, and then the power supply of 12V.

Outputs description:

	Indication	Description	Activation	Reaction	Connection
TERMINALS	**Z1***	Duplicates the input zone to avoid input delay.	Positive potential max. 12V DC, if the O/C input in on 'Close'	Sends SMS 'Z1 AL' to the first contact on the SIM-card.	
	AC	Monitors presence of supply voltage	Change in the 220V supply voltage status	Sends SMS 'AC OK' or 'NO AC' to the first contact on the SIM-card.	To one of the AC ~16V outputs on the transformer, or to +15V DC, after the rectifier and before the battery.
	A*	Alarm input	Input status change.	Dials the contacts stored on the SIM-card in sequence from 1 to 9 in three cycles.	Alarm output at the central station.
	O/C*	Open/ Close site = ' Off/ On' for security alarm central station.	Input status change.	Sends SMS 'Open!' or 'Close!' to the first contact on the SIM-card. In 'Close' mode activates the 'Z1' input monitoring.	'Open/ Close' output of the alarm central station.
	Out	Output +12V, 100mA for external consumers control.	A call from a contact entered on position 1 on the dialler SIM-card.	The output status changes. Following the change, the dialler sends back an SMS 'Out=1' or 'Out=0', when the +12V voltage is charged or discharged at the output. Initially Out=0.	When connecting inductive load (relay), add a reverse diode.
	-	Ground' of supply voltage +12V and 'ground' of control inputs.			To 'ground' of the alarm central station.
	+	+12V/ 250 mA continuous supply voltage.			To '+12V' of the alarm central station.
ON THE BOARD	**TEST**	SIM-card test/erase button.	Pressing the button for about 1sec. and release.	Sends SMS 'TEST OK' to the first contact on the SIM-card. Reads the status of the test jumpers for the automatic test time.	Within 1 min. following the supply voltage charge and the establishing of a connection with the GSM-modem, the dialler red and the green LED-s flash simultaneously. While in this mode, the button functions as 'ERASE SIM'. Upon expiry of 1 min. only the green LED remains flashing, and the button then functions as 'TEST'.
	8h 16h 32h 64h **J J J J**	Test period setting jumpers.	A jumper disconnection adds the written hours to the test time-period.	Sends SMS 'TEST OK' to the first contact on the SIM-card. Reads the test jumpers status for the time of the next test.	When all J are connected, no test SMS is sent. When all J are disconnected, a test SMS shall be sent to 8+16+32+64=120 hours.

* If this output does not provide '+12V' status, an external resistor is added to '+12V' (see chart)

PROGRAMMING

1. Insert the SIM-card into a common GSM device, switch it on and disable the PIN-code authentication.
2. Erase the first 9 entries on the SIM-card.
3. Enter your GSM contacts in the order in which you want them to be dialled (all service SMS-s shall be sent to the first entered number, therefore, it is advisable for it to be a mobile phone number). Take the SIM-card out.
4. Choose the time interval for the test SMS-s and set the dialler jumpers.
5. Check the ALARM and the OPEN/CLOSE control levels of the dialler, and if necessary fix external resistors.
6. Connect the dialler controls.
7. Insert the SIM-card into the module.
8. Connect the dialler 12V power supply.

9. Wait until only the green LED flashes.
10. You can send a test SMS, by pressing the TEST button on the dialler for over 1 sec.
11. You can dial through the entered numbers by activating the alarm input.
12. If so far everything is all right, the dialler shall stay in the "CONNECTED" mode and the green LED shall flash slowly.

Appendix 1

TELEPHONE NUMBERS PROGRAMMING

The dialler SIM-card entries 1 - 9 are provided for sending a warning if an alarm event occurs.
The first valid entry on the SIM-card has the highest priority, since it is here where all the service SMS-s are received when sent by the dialler.
Usually, with new cards, this is where public services telephone numbers are stored, such as those of the police, the fire departments, etc. It is therefore important to safely erase the entries 1 - 9.
Insert the SIM-card into an ordinary GSM device (with a keypad and display).
Disable the "PIN code" function! (usually it is found in the MENU -> SETTINGS -> SECURITY -> PIN-code = off).
Erase the first 9 entries on the SIM-card. **Attention!** These entries may not be the first 9 in the sequence in which the device provides them (in alphabetical order)! To see the contact entered under a particular number, select 'READ', and you will see something of the kind:
…. (NAME) …
088…… (number)
ENTRY NUMBER 001 -> this is the serial number on the SIM-card.
For almost full old cards, this may however take too much time, therefore you can use the 'ERASE SIM' function on our module.

Appendix 2

PROGRAMMING THE TEST SMS-s TIME INTERVAL

The dialler can be set to send a test SMS "**Test OK!**" in intervals of 8 hours each, to control the connection.
The programming of this interval is carried out by jumpers **64h 32h 16h 8h** as follows:
Inserted jumper is read as '0' zero; a removed one – '1' one.

1. For those familiar with hexadecimals - the number obtained through the jumpers is the multiplier which, when multiplied by 8 hours, yields the test SMS interval;

example: (inserted-removed-removed-inserted) => $(0110)_2$ * 8 hours =48 hours

2. for all others: the inserted jumpers are not counted, while the removed ones add as much time as it is indicated next to them.

example: (inserted-removed-inserted-removed) => not counted + 32h + not counted + 8h = 40 hours.
With all jumpers connected, no test SMS-s are sent.
With all jumpers disconnected, the time interval shall be 64+32+16+8 = 120 hours (five days).
ATTENTION! when switched on for the first time, the 'TEST' button of the dialler has the 'ERASE SIM' function; see Table.
Following that, the dialler reads the jumpers and sets the time for the next SMS. You can change the jumpers interval settings at any time without switching off the dialler, but after that, when the dialler is already in the 'CONNECTED' mode, you have to press the TEST-button in order to send a test SMS
first - in order to make sure that everything is all right and that the telephone number for the messages has been correctly stored;
second - in order to read the new jumpers interval settings for a test SMS.

What is to be taken into consideration when choosing a particular test SMS time interval?
From economical p.o.v: each SMS costs about 15 stotinki, with VAT included, therefore if you are using a 'Prima' card or a similar one of 15 BGN, you shall have enough money to send about 60 SMS-s, and available funds yet left for the call from the ALARM, which is in fact the most important thing. If you program sending test SMS-s every 120 hours, you shall spend these 60 SMS-s for 300 days, i.e. you can do with 15 BGN for almost a whole year. We remind that for economical reasons again, a SMS is sent only to the first telephone number stored on the SIM-card.
Greater security: in this case, 8 or 16 hours would be a reasonable time interval, and it would be advisable for you to choose a contract regulated card.

"ERASE SIM" FUNCTION

The PIN function of the SIM-card (see *Appendix)*|, has to be disabled!

After establishing a connection, insert the SIM-card into the card-holder, and supply 12V of voltage. Wait until the dialler red and green LED-s start flashing simultaneously. This mode shall continue for about 1 minute. If during this time you press the **"TEST/**

ERASE SIM” button, you shall initiate a procedure where all entries 1-9 on the SIM-card shall be erased, so that you can enter there your entries. During this procedure (about 20 sec.) none of the dialler LED indicators are on. After the procedure has been finalized, the dialler stays in the "CONNECTED" mode.
Disconnect the power supply, take the SIM-card out and insert it into a GSM device. See *Appendix 1.*

TEST

When the dialler is in the "CONNECTED" mode (see above), you can at any time check the operation of the dialler – GSM-contact system, by pressing for over 1 sec. the TEST button located on the dialler board. Thus you will send a “Test OK!” SMS. to the first number stored on the SIM-card.

ATTENTION!

The antenna rotates only in the plane around its nut!

Do not place the kit into a metallic container, it shall screen off the signal!

Guarantee: 12 months as of installation date.

Date	Installed/ repaired by:	Signature