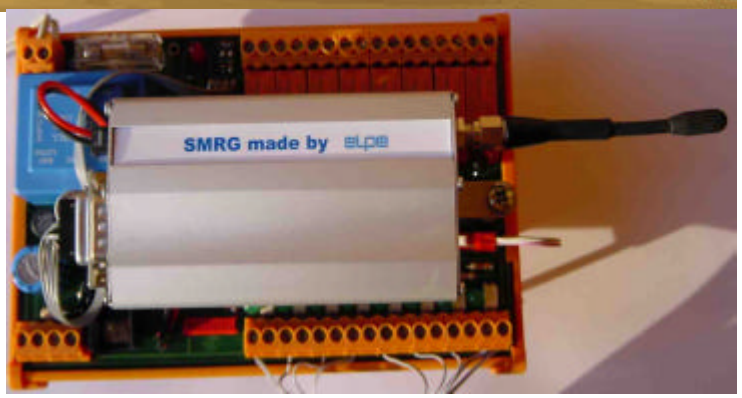
SMRG

(Short Message Remote Guard)
ALARM FUNCTION
SWITCH FUNCTION
GUARD FUNCTION
CONTROL FUNCTION



The SMRG is a microprocessor based control unit with a dual band GSM modem which can be built into a switch cabinet as seen above or in an appropiate case for home or industry. It guards all types of electrical units.

Equipment (hardware):

- 8 or 4 input lines
- 8 or 4 output lines
- integrated accumulator with power failure control
- supply with main power 230V~, or 24V~ or 12V-
- built for hard industry

Every electrical unit in the world can be reached by the SMRG.

•ALARM FUNCTION

In case of alarm (one of the eight input lines is activated) a short message(SM) will be sent to upto 5 telephone numbers.

•SWITCH FUNCTION

One can switch on or off one of the 8 output lines via SM.

•GUARD FUNCTION

One can get information about the input and output lines via SM.

•CONTROL FUNCTION

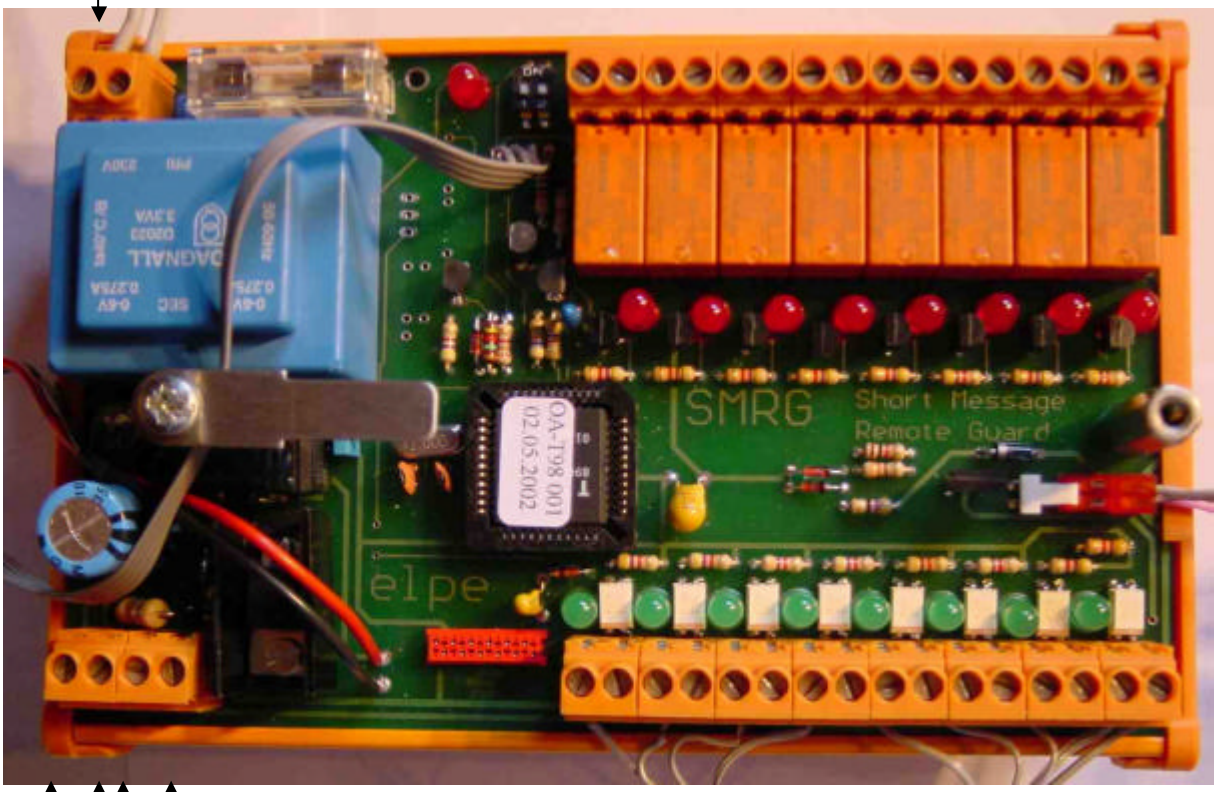
One SMRG can send a switch command to a second SMRG via SM without the other telephone numbers being contacted, i.e. a master-slave connection. Each SMRG control unit can be used as master or slave or as a combination of both, depending on the parameter.

Dimension : 165 x 109 x 90 mm. The SMRG can be mounted on a carrying track .

Power supply 230V~

8 potential-free output relays , switching power 230V~ at 6A

Output relay 1 2 3 4 5 6 7 8



Input: 1 2 3 4 5 6 7 8

Ground

24V~

12V+

Examples for the use of the SMRG:

- waterworks
- sewage
- electric doors
- heating systems
- cooling systems
- alarm systems
- weekend houses
- lighting systems
- control of parking sites

Putting into operation:

To transmit the parameters one must disable the question of the PIN number by putting the SIM card into a mobile phone and then into the GSM modem. The red LED on the modem should blink once in a second. If a PIN activated SIM card is used the LED lights permanently.

The SMRG will be delivered with the following parameters.
Alarmtext 1: *Input 1 active*
Alarmtext 8: *Input 8 active*
Alarmtext when power fails: *Attention!!! Power failure!*
Alarmtext when power returns: *Power supply is switched on again !*

One telephone number has to be stored to receive a SM with an alarmtext. Therefore send a SM e.g. telnr1 +436641234567 to the SMRG.
All commands can be written in small or capital letters but spaces must be kept!!

Parameters and Switching processes

The following short messages (SM), which can be sent to the **SMRG** (Short Message Remote Guard) store parameters in the unit or switch on or off one of the relays.

"Command" is first, followed by the parameter in brackets < >
<number> is the telephone number e.g.: +436645804519 (in complete form)
<Text> is the text e.g.: Water works in Oberndorf. The main pump has broken down.

Commands which write parameters in the flash memory
If one sends a telephone number or a text a second time the old version will be overwritten.
Telephone numbers:

telnr1	<number>	reads the 1. telephone number and stores it in the flash memory
telnr5	<number>	reads the 5. telephone number and stores it in the flash memory

Alarmtext:

textp	<Text>	text which will be sent as a SM if the main power fails
text1	<Text>	text which will be sent as a SM if input 1 is activated
text8	<Text>	text which will be sent as a SM if input 8 is activated

Date and time:

set dat 07/05/01,11:05:30	JJ/MM/TT,hh:mm:ss	date is 2007-05-01, time is 11 oclock 5 minutes 30 seconds

Commands to switch outputs on or off

rel1 on	relay 1 will be switched on
rel1 off	relay 1 will be switched off
rel8 on t01	relay 1 will be switched on for a time period of 01 sec (01 to 99 sec)
rel8 off	relay 8 will be switched off

You can define your own text which switches a relay on or off - alternative switch command
First send a SM to the SMRG which defines the command
rel1 on=light on
rel1 off=light off
Now you can switch the relay 1 on if you send a SM with: light on

Commands to read informations

status	the **SMRG** answers with a SM about the logical status of all inputs and outputs and the level of the received signal of the aerial of the modem
extstat	the **SMRG** sends a SM containing the following parameters (PIN, activating the TelNr, TelNr1 to TelNr5, Text1 to Text8 and Text Power) the answer is OK if existing or n.v.(not existing) and the software version and date.
show tel	all stored telephone numbers will be sent
show texp	the text related to the power failure will be sent
show tex1	text 1 related to input 1 will be sent
show tex8	text 8 related to input 8 will be sent
show texts	all stored texts will be sent in short form (only the first 12 characters of the text) if a text does not exist n.v. is displayed.
show on	shows all alternative switch on commands in short form
show off	shows all alternative switch off commands in short form
show rel1	shows the alternative switch command for relay 1
show rel8	shows the alternative switch command for relay 8
show dat	shows the date and time of the SMRG
show occ	shows the last 5 occurrences (e.g. rel1 on, Input 5 active…)
help a, help b or help c	shows all commands on your mobile if you do not have this document with you

Commands which delete stored parameters
After deleting a telephone number the related mobile phone will not be contacted, after deleting a text no SM will be sent even if the corresponding input is put into an active state.

del tel1	telephone number 1 will be deleted
del tel5	telephone number 5 will be deleted
del texp	text related to power failure will be deleted
del tex1	text 1 related to input 1 will be deleted
del tex8	text 8 related to input 8 will be deleted
del all	all stored parameters will be deleted PIN number, telephone numbers, texts. See procedure: operation details.

Commands to lock the SIM card

pin	<number>	reads the PIN number and puts it in the flash memory
act tel		all the stored telephone numbers are active, which means that only a registered telephone number can alter a parameter or switch a relay on or off. It should be the last command during the procedure of storing parameters.
deac tel		to reverse the lock of the SIM card
del pin		to delete the PIN number

A special feature of the SMRG is the master-slave function:

If one wants to use the SMRG in a master-slave control function please note following.
Each SMRG can be used as master or slave or combination of both, it depends only on the parameter.
e.g. Input 1 of unit 1 is configured as master and should switch output 3 of the unit 2 as slave. At the same time unit 2 in master function can switch output 6 of unit 1 ,in slave function, on or off.
For this use a hash sign '#' in front of the switching command and the telephone number of the slave typed in behind the switching command as one of the 8 texts in the master.
All further inputs would work normally and send a SM at activation to up to 5 telephone numbers.

Master-Slave function 1: 2 inputs of the master control one relay of the slave
The following example shall explain this.
unit 1 telephone number : +436645468456
unit 2 telephone number : +436645804519
If one wants to switch the relay 4 of the unit 2 (slave) on you have to activate the input 3 of unit 1 (master). A SM is written on a mobile telephone and sent to the master with the following contents:
e.g. text3 #rel4 on +436645804519 this SM will be sent to the unit 1 +436645468456
e.g. text4 #rel4 off +436645804519 this SM will be sent to the unit 1 +436645468456

The unit 2 itself can switch a relay on or off at the unit 1 with the following parameter
e.g. text5 #rel2 on +436645468546 this SM will be sent to the unit 2 +436645804519
If input 5 of unit 2 is activated relay 2 of unit 1 will be switched on.
e.g. text6 #rel2 off +436645468546 this SM will be sent to the unit 2 +436645804519
If input 6 of unit 2 is activated relay 2 of unit 1 will be switched off.

Master-Slave function 2: 1 input of the master controls 1 relay of the slave

One input of unit 1 switches one relay of unit 2 by activation on and by deactivation off.
e.g. text3 #rel7 on/off +436645804519 this SM will be sent to the unit 1 +436645468456
Please note: there is a space behind the command text3 and behind on/off and also do not forget the slash.

Advantages of this technique: if due to the local conditions use of a SPS could be very difficult or too expensive because of too long cables, then one can achieve a solution by two or more SMRG controls.

Special settings:

sm stop on	if an input is activated a SM will be sent. After 5 minutes delay time the next SM will be sent if the input is still activated.
sm stop off	the delay time ist switched off and an actived input will cause as many SMs as telephone numbers are stored to be sent; regardless if the input is still activated.
p delay on	a delaytime of 3 minutes is activated when power fails. A power failure of less than 3 minutes will not cause a SM to be sent to the stored telephone numbers.
p delay off	the power failure delay is switched off. A power failure will cause a SM to be sent immediately.

Technical Details:

A **Power supply**
1. 230 V ~ with onboard transformer
2. 24 V ~ or 24 V – with anti-polarisation protection
3. 12 V – with anti-polarisation protection

B **Output:**
8 (4) Relays, normally-open with LED (red) as control light, potential-free, switching power 6A / 250V~

C **Input:**
8 (4) Inputs with LED (green) as control, potential-free, (normally-open)

D **2 Dip Switches** with the following functions:

S1 ON service function; you can test the outputs by activating the corresponding inputs without sending a short message. While using this function the control LED does not flash.

S2 OFF if an input is activated a short message will be sent to upto 5 stored telephone numbers (every 30 seconds).
ON a short message is sent to the first stored number. By receipt no further numbers will be contacted otherwise a short message will be sent to the next number after 2 minutes.

E Output to red control LED shows different functions:

LED	ON	OFF	FUNCTION
1.	short	short	initialisation
2.	long	short	normal function
3.	short	long	data call
4.	continuous	----	SM send or receive

F In case of a power failure a short message will be sent to indicate this. The normal I/O functions no longer operate. An accumulator provides power to the CPU and the modem. The accumulator is charged by the mains and is protected from being completely decharged.

G The CPU has a watch dog which prevents it from running astray. All parameters are stored in a FLASH memory and even in a long power failure will not be lost.

Connections:

Nr	connection	description
1,2	220 V ~	power supply to the transformer, fused
4	24 V ~ , 24 V +	alternative supply plus
6	12 V +	alternative supply plus
3,5	ground	supply minus
10 to 25	input	input, potential-free, normally-open
30 to 45	output	output, potential-free, relay normally-open, switching power 6A@250V~
	2 wires	supply of modem
	4 wires	TxD, RxD, reset, ground of modem
ST1	2 wires	accumulator
ST3	12 pin	+12V, +5V, ground, 8 pins from CPU, ALE

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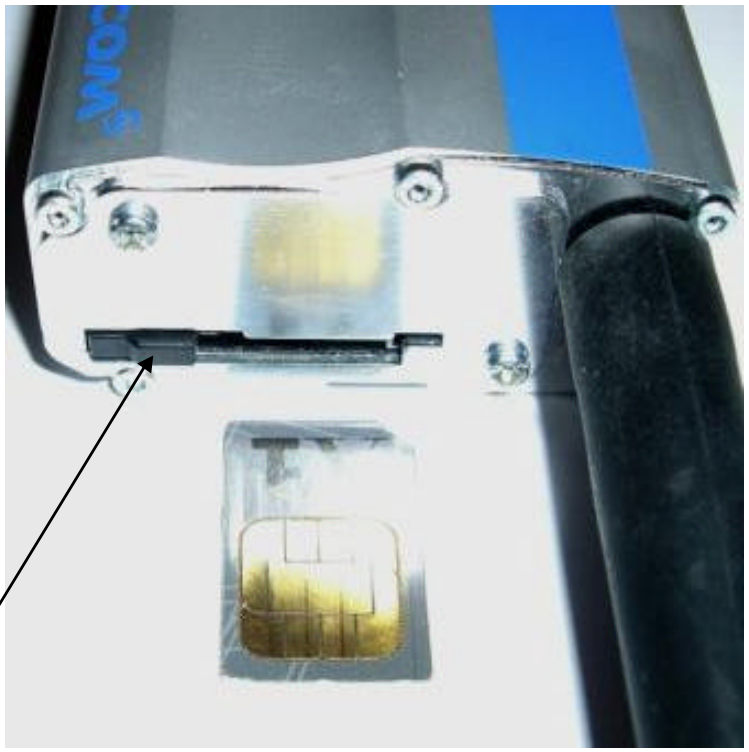
How to insert the SIM card:

- Slide switch to the left
- Insert card as shown (until it stays in position)
- Slide switch to the right



Switch

How to remove the SIM card:

- Slide switch to the left
- push SIM card for automatic release