INSTALLATION MANUAL
B-ALARM
Advanced GSM device for telecontrol
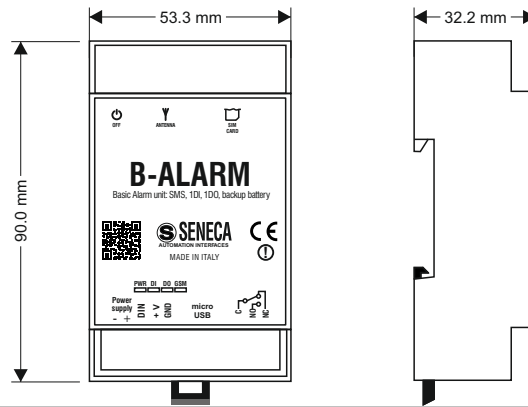
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SENECA

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Manuals and configuration software are available at website: www.seneca.it

MODULE LAYOUT

Weight	120 g.	Case	UL94-V0 self-extinguishing PC / ABS material, black color

LED SIGNALLING ON FRONT PANEL

LED	Status	LED's meaning
GSM (Yellow)	Slow Blinking 0.8s ON □ 0.8s OFF ■	□□□□■■■■□□□□■■■■ B-Alarm is Connected to GSM Network.
	Fast Blinking 0.2s ON □ 0.2s OFF ■	□■□■□■□■□■□■□■□■ GSM Network Searching or Missing Signal
PWR (Green)	ON □	The list of COMMANDS isn't empty and the B-Alarm is connected to the GSM network correctly.
	Fast Blinking 0.2s ON □ 0.2s OFF ■	□■□■□■□■□■□■□■□■ Sending SMS error or ring from B-Alarm to mobile phone.
	Slow Blinking 0.8s ON □ 0.8s OFF ■	□□□□■■■■□□□□■■■■ The list of COMMANDS is empty.
	Two Blinks 0.2s ON □ 0.2s OFF ■	□■□■■■■■■■■■■■■■ Error while entering the PIN code of the SIM card.
	Three Blinks 0.2s ON □ 0.2s OFF■	□■□■□■■■■■■■■■■■ The SIM card is not inserted correctly.
	Four Blinks 0.2s ON □ 0.2s OFF■	□■□■□■□■■■■■■■■■ B-Alarm does not receive the GSM network signal
	Five Blinks 0.2s ON □ 0.2s OFF■	□■□■□■□■□■■■■■■■ B-Alarm is initialized but not connected to the GSM network.

GENERAL CHARACTERISTICS

- GSM module for civil and industrial applications, for domotics and safety.
- Nickel metal hydride (NiMh) rechargeable battery, autonomy up to 60 min.
- Digital input available on the terminal board.
- Relay digital output available on the terminal board.
- GSM replaceable antenna on SMA connector
- SIM card slot (SIM card dimensions: 15 x 25 mm)
- Device Status LED and GSM status LED
- Micro USB socket for upgrade and device configuration.
- Removable screw terminals 3.5 mm pitch
- Sending and receiving SMS in UNICODE format.

TECHNICAL SPECIFICATIONS

DIGITAL INPUT	Reed, contact, NPN 2 wires and FD01
Max. Frequency	5 Hz
Threshold OFF / Threshold ON	0 – 2 V⎓, I < 1mA / 12 – 24 V⎓, I > 3mA
DIGITAL OUTPUT	Relay 2 A max - 250V SPDT
AUXILIARY VOLTAGE OUTPUT	10 – 28 V⎓
USB PORT	One micro USB socket for upgrade ad device configuration
SIM card Slot	Push-Push for mini SIM (15 x 25 mm)
GSM	Quad band (850 / 900 / 1800 / 1900 MHz)
POWER SUPPLY	
Voltage	10 – 28 V⎓
Consumption	3.5 W Max.
Internal battery	Nickel metal hydride (NiMh) rechargeable battery, 600 mAh, Dimensions: 46 mm x 32 mm x 11 mm
ENVIRONMENTAL CONDITIONS	Recommended range with external power supply: -20° – +55°C.
Temperature	Recommended range with backup battery power: 0° – +50°C.
Humidity	30% – 90% non condensing.
Storage Temperature	from -20 °C to +35 °C
	from -20 °C to +60 °C < 1 month
Protection degree	IP20
STANDARDS	**ETSI EN 301 489-7** **EN301 511** **EN301 489-1** **IEC / EN 60950**
CONNECTIONS	Screw terminal board, pitch 3,5 mm, Micro USB socket and SMA connector for GSM antenna.

PRELIMINARY WARNINGS

|	
	Disposal of electrical & electronic equipment (applicable throughout the EU and other countries with separate collection programs). The symbol found on this product or on its packaging, indicates that this product it must be handed over to an authorised collection point for **the recycling of electrical and electronic equipments.**
	Before performing any operation it is mandatory to read the full contents of this manual. The module may only be used by qualified and skilled technicians in the field of electric installation.
	Only the Manufacturer is authorized to repair the module or to replace damaged parts. The product is susceptible to electrostatic discharge, take appropriate countermeasures during any operation.
	The warranty is null and void in case of improper use or tampering of the module or devices supplied by the Manufacturer, necessary for its correct operation and if the instructions in this manual have not been complied with.

INSTALLATION RULES

The device can be installed on a wall or on a DIN rail EN 60715, in vertical position. Never place this device inside metal cabinets or near heat sources.
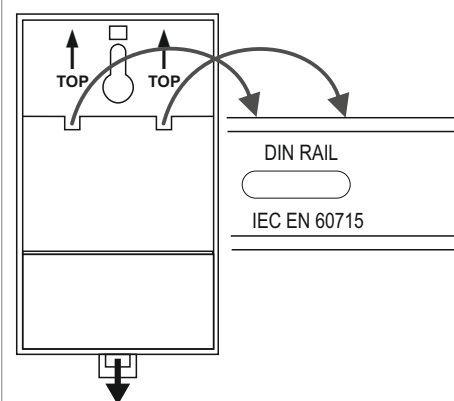
It's forbidden to insert or remove the SIM-card if the B-Alarm is powered.

Before removing the SIM card you must perform the procedure to power off the device.
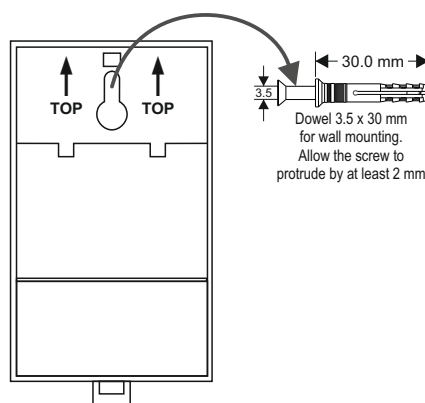
WALL FIXING	IEC EN 60175 DIN RAIL FIXING

PROCEDURE TO TURN ON AND POWER OFF THE DEVICE

The device turns on when you connect the device terminals (Power supply + and -) to a 12 V ⎓ power supply. To switch off the module, remove power supply from + and- terminals and from USB socket and hold the OFF button, near the GSM antenna socket, for at least 6 seconds.

THE FIRST CONFIGURATION

Before to insert the SIM-CARD into the slot of B-Alarm, by using a smart-phone:
- **you must activate the SIM or ensure the SIM has already been activated**
- **you must make sure that there are no SMS messages stored in the SIM**
- **you must make sure that the remaining SIM credit is sufficient**
- **you must disable the PIN request.**

Switching the device on for the first time, please follow this operations in the order:
1 **Make sure that B-Alarm is switched OFF and without power supply.**
2 Connect the antenna to the SMA socket.
3 **Insert the SIM card into the B-Alarm slot.**
   The figure showing the correct orientation of the SIM card.
4 Connect the device terminals (Power supply + and -) **to a power supply** and provide power.
5 The green LED blinks slowly and the yellow Led blinks quickly because the device tries to connect to the GSM network.
6 When the Yellow LED blink slowly the device is connected to the GSM network.

The metal contacts of the SIM card are on the underside
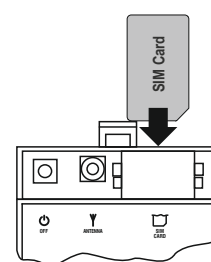
7 With the mobile phone you want to use as remote control, **call the number of the B-Alarm SIM (the calling duration must be at least one phone ring) Anonymous phone numbers are not allowed.**
8 If the COMMANDS phonebook is empty then the mobile phone number is saved in both B-Alarm phonebooks: the COMMANDS and the ALARMS phonebook.
9 When the green LED light turn on fixed, then B-Alarm is ready to use.
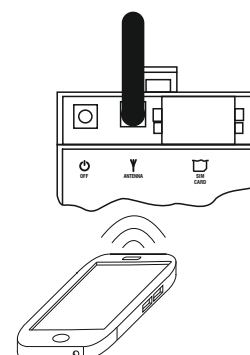
EXAMPLE

When you send to B-Alarm the SMS: STATUS?
Then the device answers to the phone ring of the incoming call with
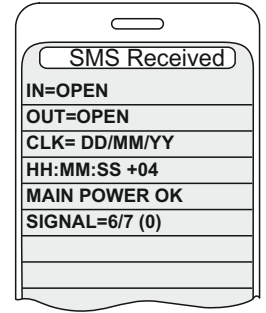**a SMS that shows:**
- Input status
- Output status
- Time which SMS is being sent, (+ in quarters of an hour from GMT Greenwich Mean Time)
- Power supply status
- Amplitude of GSM signal (0 = no signal, 7 = Max. amplitude of signal)
- Progressive number of the notification SMS (0 at the first start).

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┌──────────────────┐
│    ( SMS Received )│
│ IN=OPEN           │
│ OUT=OPEN          │
│ CLK= DD/MM/YY     │
│ HH:MM:SS +04      │
│ MAIN POWER OK     │
│ SIGNAL=6/7 (0)    │
│                   │
└──────────────────┘
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SIM CARD REMAINIG CREDIT

The SMS you must send to obtain the remaining credit from the mobile operator is determined by the SIM:
Contract SIM cards: You must contact your mobile operator.
SIM TIM: Send to the device an SMS with this text «IDOPERATOR = 1»
SIM Wind: Send to the device an SMS with this text «IDOPERATOR = 2»
SIM Vodafone: IDOPERATOR = 0 default pre-loaded operator doesn't need to send an SMS.
SIM from other mobile operators: use the Easy Setup configuration software
(downloadable for free from the website: www.seneca.it in the section products software easy)

REMINDER CARD

You can control the device status by sending an SMS with only a number from 0 to 15 from the mobile phone.
Every number received from the device perform a command.
The following cards can be cut out and used as reminder about the fast command numbers meaning, the data saved into the device and the password (four numbers digit necessary for reset the device)
You can read the password four numbers with Easy setup software in the test configuration section.
Two cards are shown:
the first one report the meaning of SMS default FAST commands,
the second one can be compiled with custom commands,
You can use the software Easy Setup for modifying the fast commands.

DEFAULT - SMS FAST COMMANDS		CUSTOM SMS FAST COMMANDS	
0 - B-Alarm status request	8 - Totalizer value request	0 _____	8 _____
1 - Opens the output	9 - Counter request and reset	1 _____	9 _____
2 - Closes the output	10 - Enable Ring command	2 _____	10 _____
3 - Change the output status	11 - Disable Ring command	3 _____	11 _____
4 - Closes the timed output	12 - Enable Timer1	4 _____	12 _____
5 - Opens the timed output	13 - Disable Timer1	5 _____	13 _____
6 - Input status request	14 - Counter reset	6 _____	14 _____
7 - Counter value request	15 - Disable Timer2	7 _____	15 _____
B-Alarm REMINDER CARD PASSWORD _____		**B-Alarm REMINDER CARD** PASSWORD _____	

BACKUP BATTERY

The device is supplied with a backup battery that allows operation without main power supply.
If you power ON the device for the first time, you must <u>supply power through the + and - terminals, for at least 4 hours,</u> **in order to charge the internal battery.**

• USB PORT AND POWER SUPPLY

The device has a micro USB socket, on the lower part of the module, which can be used to configure the device and to upgrade the firmware.
You can't supply power to the device through the USB socket.

> **The internal battery can be recharged only from - and + terminals**

You can order a dedicated power supply for this device, as an accessory, with code: KAT700/12L.

Power supply - and + terminals | micro USB socket
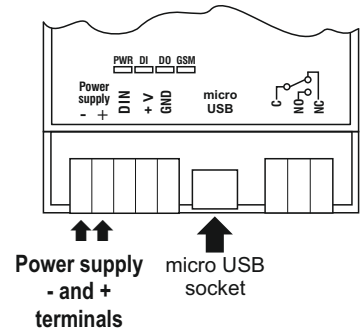
APPLICATION EXAMPLES

The B-Alarm device, after proper configuration, allows to implement the following application examples:
- Opening and closing of automatic gate control with phone ringing
- Remote control of loads (switching on and off)
- Vending machine control
- Telephone dialer for anti-theft devices
- Low production alarm for solar panels
- Network black-out control
- Automations with four timers

To implement these applications, use the Easy Setup software.

ELECTRICAL CONNECTIONS

POWER SUPPLY
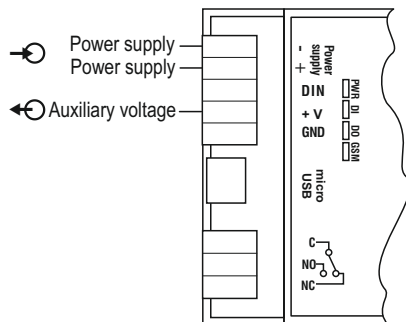
DIGITAL OUTPUT WITH DC OR AC POWER SUPPLY

DIGITAL INPUT

Note: The absence of power supply also causes the lack of auxiliary voltage and then in addition to the blackout alarm, the opening of the contact at the input will also be signaled.

FD01 INPUT

LIST OF EXECUTABLE COMMANDS BY A RING, EVENT OR FAST COMMAND

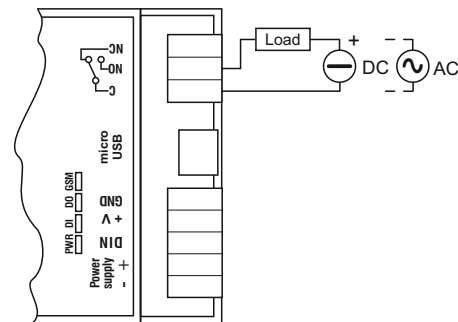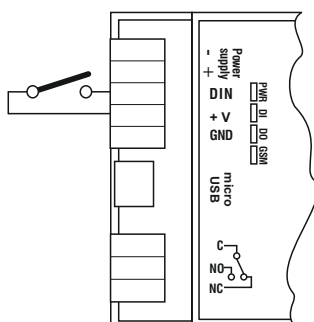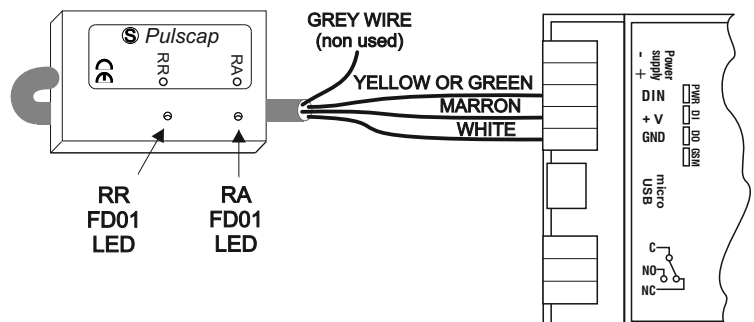The Easy Setup software allows you to program the B-Alarm. The reception by the device of a phone ring or a particular event or a fast command causes the execution of one of the following commands:
NO OPERATION
CLOSES THE OUTPUT
CLOSES THE TIMED OUTPUT (phone-ring default command)
OPENS THE OUTPUT
OPENS THE TIMED OUTPUT
ENABLES ALARM IF INPUT IS CLOSED
ENABLES ALARM IF INPUT IS OPEN
DISABLES THE INPUT ALARM
CHANGES THE OUTPUT STATUS
REMAINING CREDIT REQUEST
INPUT ALARM STATUS REQUEST
COUNTER VALUE REQUEST
TOTALIZER VALUE REQUEST
INPUT STATUS REQUEST
B-Alarm STATUS REQUEST
COUNTER REQUEST AND COUNTER RESET
COUNTER RESET
DISABLES PHONE-RING COMMAND
ENABLES PHONE-RING COMMAND
ENABLES TIMER 1
ENABLES TIMER 2
ENABLES TIMER 3
ENABLES TIMER 4
DISABLES TIMER 1
DISABLES TIMER 2
DISABLES TIMER 3
DISABLES TIMER 4
DISABLES POSTPONED COMMAND (See pag. 11/12)
ENABLES POSTPONED COMMAND (See pag. 11/12)
Using the Easy Setup software, all the previous commands can be combined with a fast command.

LIST OF SMS EXECUTABLE COMMANDS

COMMAND	SINTAX	EXAMPLE
ADDCLK: Adds or subtracts an offset in seconds to the internal clock	ADDCLK = <offset_seconds>	ADDCLK = +3600 ADDCLK= - 1522
AL: Shows the configuration of input alarm	AL?	
ALCOUNT: Shows the configuration of counter alarm	ALCOUNT?	
ALCOUNTDIS: Disables the counter alarm	ALCOUNTDIS = <chn>	ALCOUNTDIS = 1

LIST OF SMS EXECUTABLE COMMANDS

COMMAND	SINTAX	EXAMPLE
ALCOUNTEN: Enable the counter alarm when the threshold is exceeded	ALCOUNTEN = <chn>, <threshold>	ALCOUNTEN = 1, 123456789
ALDIS: Disable the input alarm and the blackout alarm	ALDIS = <argument>	ALDIS = 1 (Disable input alarm) ALDIS = POW (Disable blackout alarm)
ALEN: Enable the input alarm and the blackout alarm	ALEN = <chn>, <status>	ALEN = 1,open (Enable alarm on opening) ALEN = 1,close (Enable alarm on closing) ALEN = POW (Enable blackout alarm)

NOTE: in the example «ALEN = 1, open» is used to change the activation status of the alarm (open or closed)
If the status is empty «ALEN = 1», the command enables the alarm with the last status configured in memory.
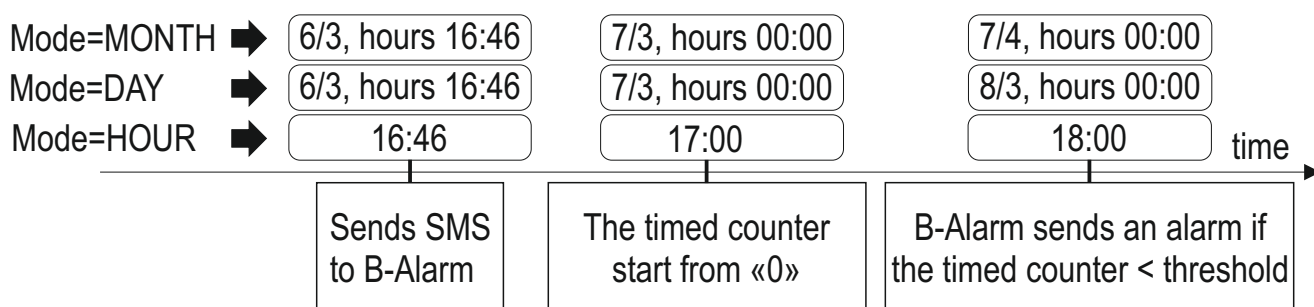
COMMAND	SINTAX	EXAMPLE
ALTOT: Shows the totalizer alarm configuration	ALTOT?	
ALTOTDIS: Disable the totalizer alarm	ALTOTDIS= <chn>	ALTOTDIS = 1
ALTOTEN: Enable the totalizer alarm and sets a threshold value	ALTOTEN= <chn>, <threshold>	ALTOTEN = 1, 123456789
CFGOUT: Shows the digital output configuration or sets the digital output as N.C. or N.O.	CFGOUT? CFGOUT = <chn>, <status>	CFGOUT? (Shows output configuration) CFGOUT = 1, NC (Sets output as N.C.) CFGOUT = 1, NO (Sets output as N.O.)
CLK: Shows the clock value or sets hour and date (after + are quarters of an GMT hour)	CLK? CLK = <gg/mm/aaaa> <hh:mm:ss> <GMT>	CLK? (Shows the clock value) CLK = 1/2/12 8:40:53 +4 (Sets the clock at 1/2/12 8:40:53 GMT+1) CLK = 22/01/2018 12:00:00 -8 (Sets the clock at 22/1/18 12 o'clock GMT-2)
CLOSE: Closes the digital output	CLOSE = <chn>	CLOSE=1
COUNT: Shows the counter value	COUNT?	
COUNTE: Shows the counter value and reset the counter	COUNTE= <chn>	COUNTE = 1
COUNTSET: It imposes a value to the counter	COUNTSET= <chn>, <value>	COUNTSET = 1, 999999990 (Sets the counter to 999999990)
CREDIT: Shows the remaining credit	CREDIT?	
CREDITPARAM: Shows the actual message for the remaining credit request or sets the new message for the remaining credit request	CREDITPARAM? CREDITPARAM = <text message>	CREDITPARAM=PRE CRE SIN (Shows the actual message) CREDITPARAM = Balance (Sets the new Message: «Balance»)

LIST OF SMS EXECUTABLE COMMANDS

DELTA: shows the status of low production alarm configuration or sets the low production alarm	DELTA? DELTA = <value>, <enable>,<mode>	DELTA? DELTA1? DELTA=D (Disables the low production alarm) For the other commands, see the examples:

DELTA1=345,E,MONTH (Enables the low production alarm to the 345 value:
If the digital input counter, starting from 0, e.g. the day 7/3 don't exceed the 345 value,
within one month, an alarm is triggered automatically at the end of the month).
DELTA1=333,E,DAY (Enables the low production alarm to the 333 value:
If the digital input counter, starting from 0, e.g. the day 7/3 don't exceed the 333 value,
within one day, an alarm is triggered automatically at the end of the 24 hours).
DELTA1=9,E,HOUR (Enables the low production alarm to the 9 value:
If the digital input counter, starting from 0, e.g. at 17:00 don't exceed the 9 value,
within one hour, an alarm is triggered automatically at the end of the 60 minutes).

Mode=MONTH ➡	6/3, hours 16:46	7/3, hours 00:00	7/4, hours 00:00
Mode=DAY ➡	6/3, hours 16:46	7/3, hours 00:00	8/3, hours 00:00
Mode=HOUR ➡	16:46	17:00	18:00	time
	Sends SMS to B-Alarm	The timed counter start from «0»	B-Alarm sends an alarm if the timed counter < threshold

COMMAND	SINTAX	EXAMPLE
FACTORY: Loads all the default values deleting the actual configuration	FACTORY = <pass>	FACTORY = 3387
FWCODE: Shows the firmware version	FWCODE?	
HYSTIME: Sets the inhibition time of input alarm before the generation of the next.	HYSTIME = <argument>, <min.>	HYSTIME=1, 300 HYSTIME=POW, 3
IDOPERATOR: Shows the actual mobile phone operator configuration or sets the new mobile phone operator configuration	IDOPERATOR? IDOPERATOR=<id>	IDOPERATOR=0 IDOPERATOR=1 IDOPERATOR=2
IN: Shows the digital input value	IN#?	IN1?
NUMCREDIT: Shows or sets the number for the residual credit request	NUMCREDIT? NUMCREDIT = + <phone_number>	NUMCREDIT=+404 NUMCREDIT=+40916 NUMCREDIT=+4155
NUMIN: Shows or adds a phone number into commands list	NUMIN? NUMIN=<phone_number>	NUMIN? NUMIN=+39 3281234567
NUMINE: Erases a phone number from the commands list	NUMINE=<phone_number>	NUMINE=+39 3411234567
NUMOUT: Shows or adds a phone number into the alarm list	NUMOUT? NUMOUT=<phone_number>	NUMOUT? NUMOUT=+39 3331234567
NUMOUTE: Erases a phone number into the alarm list	NUMOUTE=<phone_number>	NUMOUTE=+39 3301234567

LIST OF SMS EXECUTABLE COMMANDS

COMMAND	SINTAX	EXAMPLE
NUMSIM: Adds a phone number into the SIM exended phone-book for perform a command from phone-ring	NUMSIM=<phone_number>	NUMSIM=+39 3301234567
NUMSIME: Erases a phone number from the SIM extended phone-book for stop a command execution from phone-ring	NUMSIME=<phone_number>	NUMSIME=+39 3331234567 NUMSIME=ALL (Cancella tutti i numeri)
OPEN: Open the digital output	OPEN=<chn>	OPEN = 1
PASS: Shows the password	PASS?	
RINGCMD: Visualizza o configura il comando da eseguire su squillo Vedi lista comandi pag. 7	RINGCMD? RINGCMD=<command>	RINGCMD=NULL RINGCMD=STATUS? RINGCMD=COUNT? RINGCMD=CLOSE=1
SIMCONFIG: Shows or sets the SIM card configuration	SIMCONFIG? SIMCONFIG=<command>	SIMCONFIG=DATA or VOICE SIMCONFIG=SMSCREDIT SIMCONFIG=RINGCREDIT SIMCONFIG=SWSMSDISABLE SIMCONFIG=SWSMSENABLE SIMCONFIG=PINENABLE,0000
SMSCENTER: Shows or sets the number of SMS service center	SMSCENTER? SMSCENTER=+00000000	
STATUS: Shows the B-Alarm status	STATUS?	
TCLOSE: Closes the digital output for a pre-setted time	TCLOSE = <chn>, <seconds>	TCLOSE=1,20 TCLOSE=1,300
TIMER: Shows or sets the configuration of a timer	TIMER? TIMER<number>? TIMER=<enable/disable> TIMER<number>=<enable/disable>	TIMER? TIMER1? TIMER4? TIMER=ENABLE TIMER=DISABLE TIMER4=ENABLE TIMER1=DISABLE
TOGGLE: Change the output status	TOGGLE=<chn>	TOGGLE=1
TOPEN: Opens the digital output for a pre-setted time	TOPEN = <chn>, <seconds>	TOPEN=1,20 TOPEN=1,300
TOT: Shows the totalizer value	TOT?	
TOTE: Shows and e reset the totalizer value	TOTE#?	TOTE1?
TOTSET: Sets the totalizer value	TOTSET=<chn>, <value>	TOTSET=1, 99999990

LIST OF SMS EXECUTABLE COMMANDS

COMMAND	SINTAX	EXAMPLE
POSTPONED COMMAND: Execution of Fast Commands at a given date / hour. See List of Fast Commands on page 7	0-15, <+> <DD/MM/YYYY> <hh:mm:ss>	8 (The Fast Command 8 is immediately executed) 8, 01/01/2012 12:00 (The Fast Command 8 it will be executed the day 01/01/2012 at 12 o'clock)

CONTACTS

Technical support	support@seneca.it
Product Informations	sales@seneca.it

ORDER CODES

Code	Description
ALIM-MY2	Power supply 12V ⎓ 1000 mA
FD01	Photodetector for pulse counting max 10 Hz (FD01 Input pag.6/12).
A-GSM	GSM external adhesive antenna, cable 3,2 m

CONTACTS

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Product Informations	sales@seneca.it