

# ***GSM Module***

## **AVG-09**

**Integrated GSM module for SMS  
and Remote controlling**

**Installation and Operation Manual**

**Version 1.00**

***Edition I***

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<p>This product is subject to continual enhancement and therefore specifications may be changed or altered without prior notice</p>
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The AVG-09 provides to use a mobile phone or PC with SMS to monitor and control AVG-09 from any location. Its alarm facilities provide a flexible way to distribute critical alarm information to any number of mobile phone users.

The AVG-09 provides detailed alarm messages, secure alarm acceptance, full alarm reporting and even remote process control. This allows users to rectify problems directly via their mobile phone within minutes of the alarm occurring.

The AVG-09 monitors 8 inputs and outputs.

A SMS alarm message can be sent when inputs exceed preset limits. The AVG09 provides to activate the inputs through SMS messaging. The AVG-09 contains 8 relay outputs which can be activated via

SMS and used to switch lamps, pumps, heaters etc.

The AVG-09 is complete with an LCD display, back up battery and built-in Dual Band GSM Modem.

## Main Features

- LCD displays signal level and unit status.
- Internal, rechargeable back-up battery and real time clock battery
- Eight outputs controlled via SMS, eight Inputs send SMS when activated.
- Remote testing the AVG-09 and GSM network, test results received by SMS
- Works over the dual band 900/1800 GSM cell phone networks Units can be used wherever there is cell phone coverage.
- Sends text messages to user programmable cell phone number (SMS): The AVG-09 sends SMS to eight (8) programmable cell phone number, to notify user that the PSTN and AC Power failed or restored, input/s activated. By SMS, user is able to command 8 outputs.
- Low current consumption. Use 30 mA while in idle state and 260 mA when transmitting an alarm.
- The pack contains: AVG-09 unit, wall power supply, antenna and installation manual

The AVG-09 contains internal battery; switch off power before SIM inserting. GSM generation III SIM is not compatible with AVG-09.

Verify that the SIM in use is open for application and ID enabled.

**Do not power up without SIM card**

## Applications

### Home Automation and Home Safety system

As this system is provide to interface 8 inputs so we can connects these inputs to following applications

Once any of these alarm / inputs is detected System will generate SMS message which will be sent to pre-configure mobile number/ numbers. In case of non-delivery of message it can generate a ring to pre-configured mobile. For all above inputs different messages are sent to user and user can take appropriate actions on same.

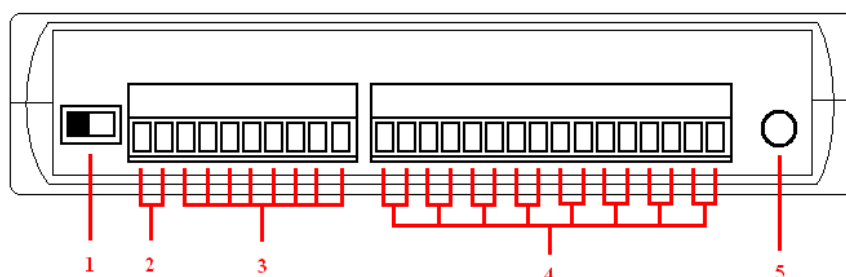
If you sent predefined SMS it will give you status of all input points.

This system is also provided with 8 Relay outputs that can be used for following purpose in home automation

- AC ON/ OFF
- Water motor ON/ OFF
- Light ON/OFF
- Parking light ON/ OFF
- Siren & Buzzer ON/OFF to indicate the intrusion

You have to sent a predefined SMS to your home mobile no and you can make any of above outputs ON/ OFF.

## Wiring the AVG-09



Rear view

- 1 - **On/Off Switch:** Turn On/Off the terminal
- 2 - **Acc1, Acc2 Inputs:** Connect to a 12V Power Supply AC or DC
- 3 - **IN 1 to IN 8:** Inputs
- 4 - **OUT 1 to OUT 8:** Relay Outputs
- 5 - **Antenna Port:** Connect to Antenna

## Installation

Also need to provide the power by means of 12 to 20 VAC or 12 to 26 VDC. The power supply must be able to stand 1A.

You should install the AVG-09 in a place where there is GSM signal coming from the operator you want to use. Check it with a phone before proceeding with the installation. To install the device in a place with low-level GSM signal, consider using an external antenna with extended wire.

Remove the PIN request from the SIM before inserting it in the unit, otherwise the device will not work.

In order to do so, insert the SIM in a phone and disable the PIN request (usually there is a security menu that enables you to do so). If you don't do it, and switch-on the unit more than 3 times you will have to reset the PIN using the PUK!!

**Note: You must remove the PIN request from the SIM before inserting it in the unit,**

## Powering Up the AVG-09

When power up the AVG-09, it will display as below

A rectangular box representing a terminal screen. Inside the box, the text "SETTING&gt;&gt;&gt;&gt;&gt;" is displayed in a monospaced font.

When the terminal is ready to use, it will display as below

A rectangular box representing a terminal screen. On the left side, there is a signal strength indicator consisting of a vertical bar and four smaller bars of increasing height. In the center, the text "AVG-09" is displayed. On the right side, there is a USB icon.

## AVG-09 Programming Settings

You can program the AVG-09 with SMS commands using your phone. Any command sent by SMS must be preceded by # and **MUST** be in **CAPITAL** letters. The fields between square brackets are parameters; do NOT enter the square brackets. When you send a command, you will receive the answer even if your GSM number is not in the internal GSM list. This happens because the AVG-09 recognizes the caller ID and answers to it.

**Example: #PWD123456#INI**

### #PWD – Command (Password)

Setting for Password. This command must always come first. Use 6 digits as a password. The standard default one, when the device comes from the factory, is 123456.

**Example: #PWD123456...**Followed by other commands

We suggest that you change it, using the #CAP command.

In all the manuals examples we will use 123456 as an example of password

### #CAP – Command (Changing Password)

Setting for Changing Password. Use this command to change the password with a new one that you will chose for your device, make a note of the new code or you will have to send the unit back to reset it. The code length is six numbers. Factory default = 123456.

The **#CAP** command must be typed twice with the same text. Of course it must be preceded by the old password.

For example, to change the password 123456 into the new password 333444 you need to send the following SMS:

**#PWD123456#CAP333444#CAP333444**

You will receive a confirmation with PWD OK and CAP OK if you wrote correctly or an Error message if you made a mistake.

### **#INI – Command (Initialize, setting default parameters)**

Setting for Reset Parameters. Use this command to resets all parameters to the INIT default value. Must be issued before other commands or will reset their values.

**Example: #PWD123456#INI**

### **#MTX – Command (Matrix settings)**

Setting for Reads/Writes matrix of association among Telephone numbers and Inputs. Associates an event (alarm) to a set of telephone numbers (from 1 to 8 or 0 for none) to which it will send an alarm SMS. Factory default = 000000.

**#PWD123456#MTX?**

Returns all matrix values

**#PWD123456#MTX[xx]?**

Returns specific matrix row

[xx] is the matrix row number related to inputs

**Example:** Sending command **#PWD123456#MTX02?** will return the matrix values of INPUT 2.

**#PWD123456#MTX[xx]=ttttttt**

xx is the inputs row to program and ttttttt are any of the 8 Telephones in TEL list.

**Example: #PWD123456#MTX01=12000000** means that alarms for event 1 will be sent to GSM programmed in position 01 and 02 with the **#TEL** command.

### **#ALR – Command (Alarm)**

Setting for Enables (**ON**) or Disables (**OFF**) the generation of an alert SMS. Default values:  
**ON**

**#PWD123456#ALRON** or **#PWD123456#ALROFF**

Enable or Disable SMS generation. Allowed values: **ON** or **OFF**

**Example:** Sending command **#PWD123456#ALROFF** to disable generation of an alert SMS.

**#PWD123456#ALR?**

Reading status for **#ALR**

## **#AMS – Command (Alarm Messages per Input)**

Setting for Stores and reads text for programmable Alarm Messages. For any INPUT there is a message, which can be programmed up to 40 characters long.

### **#PWD123456#AMS01=Alarm Message**

Writes message associated to alarm **01 up to 08** (maximum message length is 40 characters).

Allowed values, always in 2 digits: **01 to 08** associated to input **1 to 8**

### **#PWD123456#AMS01?**

Displays specific Alarm Message **01, up to 08**.

## **#IDT Command (Input Delay Time)**

Input Delay Time. Indicates how long an input (not set as a counter) has to be active before generating an alarm. Values are seconds delay. Factory default = 5.

### **#PWD123456#IDT?**

Read all delay values for inputs 1 to 8

### **#PWD123456#IDT01?**

Read input 01 up to 08 specific delay value

### **#PWD123456#IDT01= Value**

Sets delay for input xx to value **XXXXX**

**xx** is the value of INPUT, number from **01 to 08**

**XXXXX** is a number from **1 to 65535**

## **#MHD Command**

Settings for Reads/Writes AVG-09 ID and SMS serial number.

AVG-09 ID is a 10 digits alphanumeric value that can be used to identify a specific unit.

SMS serial number is a 4 digits decimal number that increases every time a new SMS is sent.

### **#PWD123456#MHD?**

Read AVG-09 ID and current SMS serial number

### **#PWD123456#MHD=[xxxxxxxxxx][,xxxx]**

Sets AVG-09 ID [and, optionally, serial number]

[xxxxxxxxxx] is a 10 digits alphanumeric description, like WT-000021 **No spaces allowed.** Use a hyphen (-) or underscore (\_) instead. [,xxxx] is a number from 0 to 9999 preceded by a comma.

### **#OUT Command (outputs)**

Sets or resets the output pins. Factory default = Off

**#PWD123456#OUT[xx]=[status][,tttt]**

Sets Output x to ON or OFF for **tttt** seconds.

[xx] is the value from 01 to 08 corresponding to the Output.

[status] is the value for **1(ON)** or **0(OFF)**.

[,tttt] is the Time in seconds (**0-65000**) during which the **xx** Output will be ON.

If this parameter is omitted Output **xx** will stay ON until a #OUTxx=0 command is received for the same output.

**Example:** Sending command **#PWD123456#OUT01=1,10** will set the input 1 ON for 10 seconds.

### **#RES Command (hardware Reset)**

Reset the firmware of AVG-09

**#PWD123456#RES**

Reset the firmware of AVG-09

### **#TEL – Command (Program telephone numbers)**

Setting for program GSM Telephone numbers ( up to 8) to which alarms will be sent.

**#PWD123456#TEL?**

Read all Telephone numbers (up to 8)

**#PWD123456#TEL[xx]?**

Read the xx Telephone number

[xx] Is the Telephone position (from 01 to 08)

**#PWD123456#TEL01=+97236816767**

**Example:**    **#PWD123456#TEL01=+391231234567**  
              **#PWD123456#TEL02=+441231234567**  
              **#PWD123456#TEL03=+451231234567**

## Technical Specifications

Parameter	Result	Parameter	Result
GSM Module	Dual Band 900/1800 MHz	Indicators	LCD
Antenna	0dB, 2.5m Cable	Input/outputs Count	Eight
SIM Card	Standard Generation II	Input/outputs Wiring	Pluggable Wire Terminal
Power Supply	12V 0.5A wall type	Input Type	Opto coupler
Power Switch	Toggle	Outputs Type	Relay 1A/24 DCV
Internal Battery	7.2 V, rechargeable + Real Clock Batt.	Dimensions	LxWxH: 193 x 149 x 46 mm
Input impedance	125 ohm	Operating Temperature	0 to 50°C
Display	LCD DOT Matrix	LCD Type	16x2 with backlight
Housing	ABS, Black Color	Weight	Net 1.2 KG

### AV-GAD LIMITED WARRANTY

*Av-Gad Systems Ltd.* (Av-Gad) warrants its products to be free from production defects in components; materials used and labor for twelve months following the date of production. Av-Gad will within the mentioned period, as its option, repair or replace any product failing to proper operation without charging the purchaser.

This warranty shall not apply to any equipment, or any part thereof, which has been repaired by others, installed not proper, used improper, abused, altered damaged or subjected to forces of nature or on which the serial and data code is altered or removed.

Av-Gad will not be responsible for any dismantling or reinstallation expenses. In order to exercise the warranty, the purchaser must return the product, delivery and transportation costs will be prepaid and insured to Av-Gad.

After repair or replacement, Av-Gad assumes the cost of returning products under warranty.

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There is no express or implied warranty of merchantability or a warranty of fitness for particular purpose. Additionally, this warranty is in lieu of all other obligations or liabilities on the part of Av-Gad.

Any action for breach of warranty, including but not limited to any implied warranty of merchantability, must be brought within three months following the end of the warranty period. In no case shall Av-Gad be liable to anyone for any consequential or incidental damages for breach of this or any other warranty, expressed or implied, even if the loss or damage is caused by the seller's own negligence or fault.

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Av-Gad hereby declares that service, technical support and spare parts will be supplied for 60 month following the date of production.

Price list for such services will be updated from time to time.