ETLOC

SECURITY

ETLOC-30S
User manual

GPS security for vehicles

Contents

Functions of GPS locator ETLOC-30S

1.1 Direct view of the vehicle position on the map

The function allows you to view current vehicle position on the map. Maximum privacy protection - no one except the owner and authorized persons can track the vehicle. Due to direct communication with the GPS locator no third party (eg. Assistance agency) has access to the information about the vehicle.

1.2 Vehicle security

GPS locator ETLOC-30S can be used to secure the vehicle independently (GPS protection and GPS higher level protection "GPSS") or in conjunction with an external car alarm (INPUT protection).

In case of a security breach alarm is triggered, which at once informs users and autonomously operates an integrated relay in the unit.

1.2.1 Vehicle protection

1.2.1.1 GPS protection
GPS protection mode activates an alarm when the vehicle is put into motion while the ignition is off (this security is most effective against vehicle towing). It is recommended to have the GPS protection permanently turned on. There is no need to deactivate the GPS protection before driving. When you start the car, the GPS protection is automatically suspended and reactivates itself again when you turn ignition off.

1.2.1.2 GPS higher level protection (GPSS)
This mode is identical with GPS protection mode described higher, but does not evaluate car ignition status. Alarm gets activated every time when the vehicle starts moving. GPS higher level protection mode is controlled via a mobile application or dialling a phone number of the GPS locator from authorized telephone number (GPSS protection ON - 2x rings and then the call is rejected, GPSS protection OFF - the call is immediately rejected).

1.2.1.3 INPUT protection
INPUT protection mode is functional only in case a vehicle external alarm is installed in the vehicle and its output is connected to the locator or in case there is an SOS button installed in the vehicle. INPUT protection is permanently active. Alarm is triggered by activating the car alarm (siren activation) or by pressing the SOS button.

1.2.2 Alarm

Alarm can be triggered by:
 A) disruption of GPS protection or GPS higher level protection (GPSS) – **GPS alarm**
 B) external car alarm or SOS button – **INPUT alarm**

1.2.2.1 GPS alarm
After the GPS alarm is triggered the locator sends to all authorized phone numbers (up to three authorized phone numbers can be set) SMS messages on

a regular basis for a preset period (the period can be set in minutes or kilometres). The default setting is for the duration of GPS alarm to send 10 SMS with a period of 5 minutes.

Alternatively an automatic alert call to an authorized phone number can be activated (this option is enabled only for the first phone number from the list of authorized numbers).

GPS alarm can also autonomously control the integrated relay of the locator and actively respond to the situation, for example by activating car siren or warning lights.

Note:
Turning off the GPS alarm is done via mobile applications (ALARM OFF button) or dialling a phone number of the GPS locator from authorized telephone number.

The device dispose of a sophisticated algorithm for activation of GPS alarms. In very rare cases an activation of false alarm may occur which does not have to be caused by defect of the device or wrong installation. This situation might happen in garages and close to high buildings where the device can receive for longer time bad or reflected GPS signal.

1.2.2.2 INPUT alarm
After the INPUT alarm is triggered the GPS locator sends to an authorized phone number (up to three authorized phone numbers can be set) one info SMS (the content of this SMS is user-editable).

Alternatively an automatic alert call to an authorized phone number can be activated (this option is enabled only for the first phone number from the list of authorized numbers).

INPUT alarm can also autonomously control the integrated relay of the GPS locator and actively respond to the situation, for example by activating car siren or warning lights.

Note:
In the case the GPS alarm has already been triggered, the INPUT alarm will not be activated.

Note:
The informational SMS contains the world time GMT. In case your GSM operator provides local time corrections, those corrections are also included in the SMS (e.g. 10:02:04GMT +02:00h).

1.3 Remote control of appliances in vehicle

The function allows to remotely control (except alarm) a switching relay that is integrated inside the GPS locator. It is possible to remotely control for example external heating, warning lights, car siren and circuits in the vehicle.

The relay can be controlled via mobile application or SMS (can be immediately turned on and off or turned on for a preset time)

2. Installation of the unit

We highly recommend to entrust the installation to the professional installer's garage. You can find the installation manual at: http://www.etloc.com/manuals

3. Control of GPS locator ETLOC-30S

The GPS locator can be controlled via:

A) Mobile application for Android and iOS operating systems.
B) SMS commands (all mobile phones supported).

3.1 Control via mobile application

3.1.1 Installation of the mobile application

Install the mobile application ETLOC Security to your phone via QR code:

or via links at:
http://www.etloc.com/app/

3.1.2 Adding a new vehicle into the application

- Launch ETLOC Security mobile application

- Tap the car icon

- In the dialogue box select the *Add new unit* button

For a quick setup fill in only the following fields:

  o *Vehicle no. plate*
  o *Unit tel. number*
  o *Tel. numbers for alarm SMS*

and choose *Send settings to the unit.*
The application now creates a configuration SMS.
To complete the settings press *SEND* (iOS).
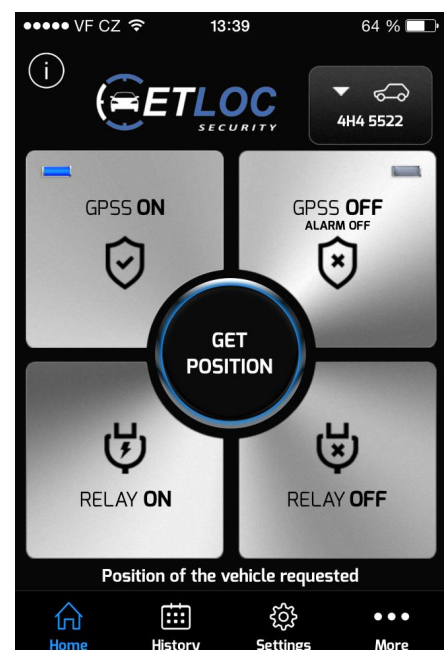
3.1.2.1 Description of configuration items

Vehicle's number plate
Enter the license plate or other identification of the vehicle.

Unit's telephone number
Enter a phone number of a SIM card placed in the GPS locator in international format.

Unit's PIN
Default PIN code of new unit is 4321. If the PIN has been changed, please enter current PIN code (this code is NOT the PIN code of a SIM card which must be always turned off)

Relay switch from main screen
Sets the GPS locator's output relay behavior controlled by buttons on the main screen of the mobile application.

Relay switch on alarm
Sets behavior of the GPS locator's output relay when INPUT alarm or GPS alarm is triggered.

Telephone numbers for alarm SMS
Settings of telephone numbers that are notified by SMS in case of INPUT and GPS alarm is triggered. At least one phone number must be entered.

Call first tel. number
When enabled, in case of an alarm the unit in addition to sending SMS also calls the first phone number preset for the type of alarm.

Send GPS position as link
Determines whether the GPS position is sent by the unit in text form or in form of direct HTML link. If you control the unit via smartphone it is recommended to have the switch turned on.

Send alarm SMS
Sets whether the SMS during GPS alarm are send after a certain distance or after a specified time and determines the total number of SMS sent within a GPS alarm.

Confirm SMS commands
When enabled the unit will confirm all configuration commands via SMS
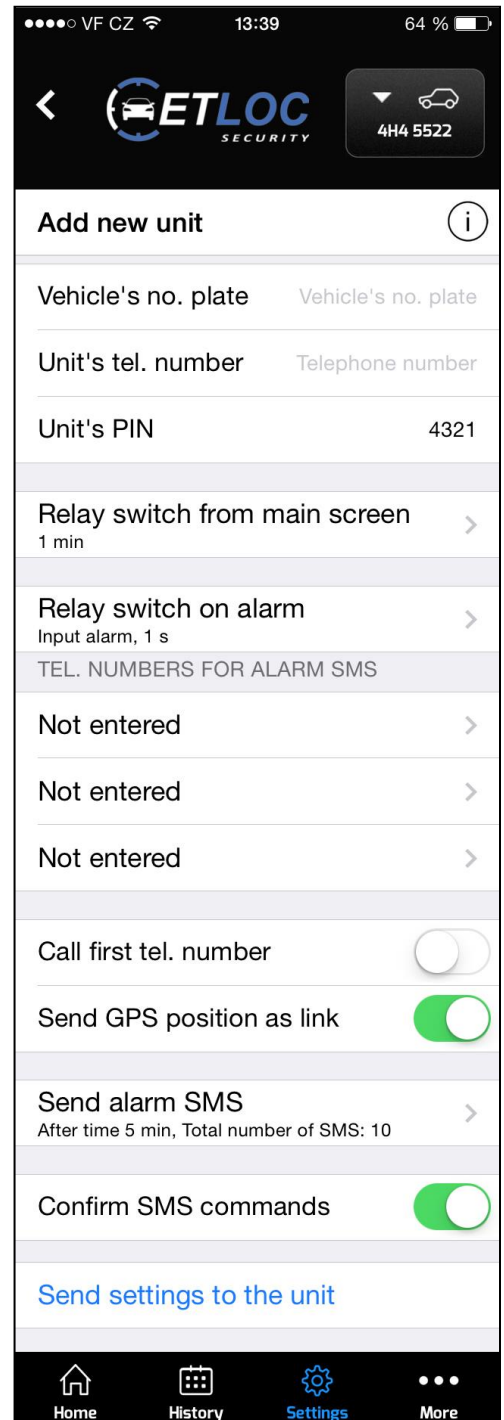
3.1.3 Home screen

Detailed descriptions of functions in current section.

Selection of vehicle (GPS locator) which application currently controls.

Turn GPS higher level protection (GPSS) ON and OFF.

Request current position of the car.

Turn switching relay ON and OFF.

The last action performed by the application.

3.1.4 History

In the history tab records of actions performed in the application are stored.

Note:
History recording can be turned off in the application settings.
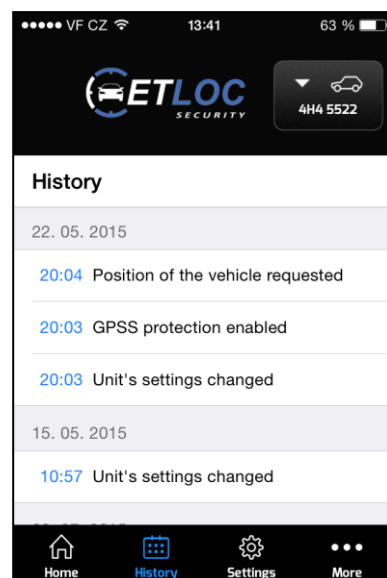
3.1.5 Settings
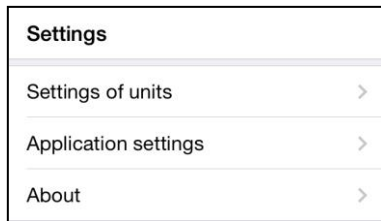
Configuration of existing units and option to add new units.

3.1.5.1 Settings of units

[Settings → Settings of units]
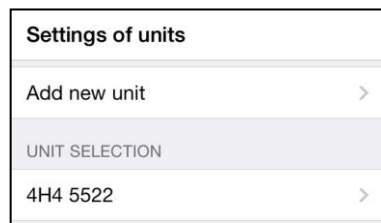
Adding and configuration of new locator.

Editing of already existing unit's configuration.

3.1.5.2 Configuration of existing unit

[Settings → Settings of units → NAME OF GPS LOCATOR]
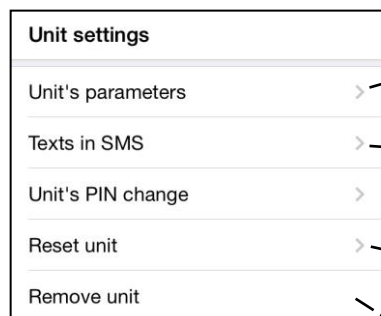
Main settings of the GPS locator. See section 3.1.2.1 Description of configuration items.

Setting of texts in outgoing SMS messages (alarm SMS and vehicle position request).

All parameters, except PIN, will be changed to the factory settings.

Removes all records of the unit from the application.

3.1.5.3 Application settings

[Settings → Application settings]

Application settings	
PIN at start	Disabled >
History recording	🟢
Sounds	⚪
Vibrations	🟢
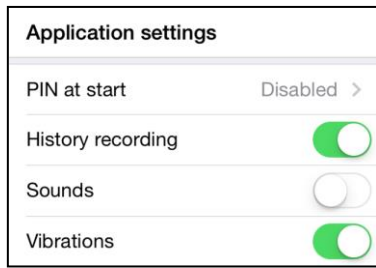
Settings of password that is requested every application launch.

Turn ON/OFF saving of individual commands in the **History** tab.

3.1.5.4 About

[Settings → About]

About

ETLOC Security v1.1

The application is designed solely for use with ETLOC Security vehicle units ETLOC-30S, firmware version FW945.6 or higher.

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3.1.6 More

•••
More

More SMS commands

Basic GPS protection 🟢

Check unit's configuration

Firmware version check

Turn off the unit

Check amount of credit >

Turn ON/OFF the basic GPS protection.

Request SMS with current GPS locator's configuration details. (see section 6.1.)

Request SMS with information about current unit's firmware version.

Turns the GPS locator off (STAND BY mode). This mode is recommended for long term car inactivity eg. winter months (see section 6.2.).

If the unit uses a pre-paid SIM card this command can request SMS with information about the remaining credit.

3.1.6.1 Information SMS with the current configuration of the GPS locator

Phone number – INPUT and GPS alarm are sent (IG)
Phone number – GPS alarm is sent (G)
Phone number – INPUT alarm is sent (I)
Relay configuration
Setting of period for sending SMS at GPS alarm
Setting of confirmation for processed SMS – 1 is ON GPS
Call in case of alarm activation – 1 is ON
Sending coordinates in the form of a link – 1 is ON
Current relay mode – 0 relay is unswitched
Mode of GPS protection – 0 is OFF
Mode of GPS higher level protection – 1 is ON

```
CONFIG: PHONE
+420602128326IG
+420777545674G
+420777545670I,
RELAY 10s IG,
PERIOD T3 N10,
CONFIRM 1,
CALL 1,
LINK 1,
SWITCH 0,
GPS 0,
GPSS 1
```
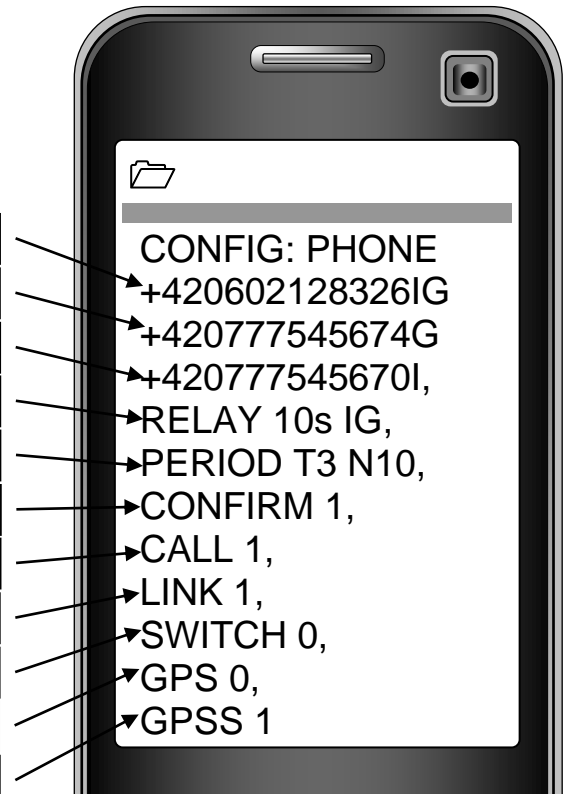
Example: Received SMS with current configuration of GPS locator

3.1.6.2 STAND BY – power management of the GPS locator

In STAND BY mode the GPS locator is switched OFF and its power consumption is 0 mA.

Mode	Description	Power consumption
Ready	The device is ON and responds to SMS commands. GPS protection and GPS higher level protection are OFF.	Max. 20mA* Recommended maximum time for not using (driving) the car is 6 weeks.
GPS protection	The device is ON and responds to SMS commands. At least one GPS protection is ON.	Max. 40mA* Recommended maximum time for not using (driving) the car is 2 weeks.
STAND BY	The device is OFF and does not respond to any SMS commands.	0mA Recommended at long time parking of the vehicle.

*The power consumption will be temporarily increased by 20mA when the relay is in the switched mode

In STAND BY mode the GPS locator does not respond to any commands.
The unit can be woken up from the STAND BY mode by either switching car ignition ON or by signal from external input (external alarm activation). The protections set before the STAND BY mode activation remains active.

3.2 Control via SMS commands

The GPS locator can be fully controlled via SMS commands that are sent to the phone number of the SIM card inserted into the unit. Each command is always sent together with a PIN code which defines authorized users. The PIN code is a four-digit number and can be changed by the user. By default the PIN code is set to **4321** (further on **** symbols are used instead of PIN code in the text). The commands are not case sensitive. In case the command is not sent in a correct form the GPS locator will respond with SMS message **COMMAND ERROR**. In case the command is sent with incorrect parameters the answer is **key word ERROR**.

3.2.1 Position SMS request

The GPS locator responds to POSITION command with one SMS.
Time that the locator needs to respond depends on the fact if the GPS module is currently switched ON (at least one GPS protection is ON or the car engine is ON). In case the locator does not manage to detect valid GPS data within 5 minutes from receiving the request, the GPS locator sends SMS with last known data marked as * OLD *.

Command form: ****   **POSITION**

Example: Requesting current GPS position

Note:
The user can send the command POSITION requests regardless the state of protections or activated alarms.

Default text setting (change is possible by command PTEXT)	
GPS coordinates (direct HTML link)	
Speed of the vehicle	
Date	
GMT and time correction	

Position and speed of your car**:**
http://satmaps.net/?q=50d12.5759N+015d048.9452E
0km/h
10.09.10
10:08:01GMT +02:00h

Example: Response to a position request

3.2.2 Relay controlling using SMS (excluding alarm)

3.2.2.1 Relay switching for unlimited time

The relay in the GPS locator can be switched using **SWITCH** command with parameter **n** and thus remotely turn ON/OFF particular devices in the vehicle for unlimited time (e.g. car siren).

Command form: **** **SWITCH n**
n = 0 – unswitched relay
n = 1 – switched relay

4321 SWITCH 1

Example: Switching the relay

3.2.2.2 Relay switching for preset time

The relay in the GPS locator can be switched using **SWITCH** command with parameter **xy** and thus remotely turn ON/OFF particular devices in vehicle for a preset time period.

Command form: **** **SWITCH xy**
x – time period of switched relay (from 0 to 240)
y – time unit of the period set by the parameter **x**
    y = s – seconds
    y = m – minutes

If you send a command **SWITCH** without any parameters the GPS locator will automatically take over settings from the **RELAY** command.

4321 SWITCH 5m

Example: Switch the relay for 5 minutes and after this time period elapses automatically return the relay to its unswitched state

3.2.3 Switch relay configuration at alarm activation

Sets the time period for which the relay will be switched at GPS and INPUT alarm.
Command form: **** **RELAY xy z**
x – time period of switched relay (from 0 to 240)
y – time unit of the period set by the parameter x
    y = s – seconds
    y = m – minutes
z – determines under what circumstances the relay will be switched
    z = I – when INPUT alarm is activated
    z = G – when GPS alarm is activated
    z = IG – when INPUT or GPS alarm is activated
    Parameter **z** is optional. If the command **RELAY** is sent without parameter **z,** the **IG** value is set.

Default setting: **1s IG**

4321 RELAY 30m G

Example: The relay will be switched for 30 minutes at GPS alarm activation

3.2.4 PIN code change

Command form: **** **PIN xxxx yyyy**
xxxx – new PIN code
yyyy – new PIN code confirmation

Default setting: **4321**

For security reasons we recommend to change the default PIN code as soon as possible. In case you forgot your PIN please contact your seller.

4321 PIN 2828 2828

Example: Change PIN code from 4321 to 2828

3.2.5 Entering of authorized phone numbers for alarm SMS and controlling of GPS higher level protection mode (GPSS)

Up to 3 authorized phone numbers can be assigned. Authorized phone numbers will receive alarm SMS in case of alarm and can control GPS higher level protection (GPSS). The telephone numbers must be entered in international format. Therefore the number must always begin with the **+** symbol.

Command form: **** **PHONE +aaaz +bbbz +cccz**

+aaa – first authorized number in international format
+bbb – second authorized number in international format
+ccc – third authorized number in international format
z – determines under what circumstances the relay will be switched
   z = I – when INPUT alarm is activated
   z = G – when GPS alarm is activated
   Parameter **z** is optional. If the phone number is entered without **z** parameter the alarm SMS will be sent from both INPUT and GPS alarm (the value **IG** is set automatically).

Note:
Authorized telephone numbers must have identification of calling number CLIP activated. In case this function is not active, function of GPS higher level protection cannot be controlled.

*Using the **CALL** command it is possible to activate an alert call to the first authorized phone number in the list.*

4321 PHONE +420777 200333 +42060266688 8G

Example: Two authorized phone numbers are entered. To the number +420602666888 will be the alert SMS sent only at GPS alarm activation.

3.2.6 Setting of alert call in case of alarm

If the function is active, the first authorized telephone number in the list is automatically called in case of GPS or INPUT alarm. This alert call only warns the user about activated alarm (we recommend not to answer the call, it does not contain any voice information).

Command form: ****** CALL x**
x = 0 – call function is OFF
x = 1 – call function is ON

Default setting: **0**

4321 CALL 1

Example: Turning ON the function of alert call

3.2.7 Request for remaining credit in pay as you go SIM card

The GPS locator will respond by message from your operator containing info about current credit in the SIM card. This function is applicable only if a pay as you go card is used.

Command form: ****** CREDIT xxxxx**
xxxxx – dialled number for info about remaining credit in the pay as you go SIM card. Contact your GSM operator for the information.

4321 CREDIT *22#

Example: Command for getting info about current credit in a pay as you go SIM card (Vodafone CZ) used in the GPS locator.

3.2.8 Way of displaying GPS coordinates in SMS

The function determines whether the GPS coordinates are displayed in text form or as HTML direct link.

Command form: ****** LINK x**
x = 0 – sending GPS coordinates in the text form
x = 1 – sending GPS coordinates as HTML link.

Default setting: **1**

GPS coordinates in text form can be displayed on the map at website www.satmaps.net.

Note:
If you want to use the HTML link function your mobile phone must be connected to the internet.

4321 LINK 0

Example: Turning off the displaying of GPS coordinates as HTML link

3.2.9 Configuration of SMS text sent at GPS alarm activation

GTEXT SMS is sent to authorized phone numbers at GPS alarm activation. The GPS coordinates or the link are automatically included at the end of the message.

Command form: ****** GTEXT xxxxx**
xxxxx – your text of the SMS (max. 74 symbols)

Default setting:
Alarm! Position and speed of your car:

4321 GTEXT Alarm! They are stealing your car:

Example: Setting your own GTEXT

3.2.10 Configuration of SMS text sent at INPUT alarm activation

The SMS with ITEXT will be sent to authorized phone numbers after INPUT alarm is activated. In case the ITEXT ends with symbol "**:**", the GPS coordinates or the link will be included at the end of the message.

Command form: ****** ITEXT xxxxx**
xxxxx – your text of the SMS (max. 74 symbols)

Default setting: **Alarm! Your car was attacked.**

4321 ITEXT Car alarm is activated!

Example: Setting your own ITEXT

3.2.11 Configuration of SMS text sent as a response to a position request

The SMS with PTEXT is sent as a response to a vehicle position request (**POSITION** command). The GPS coordinates or the link are automatically included at the end of the message.

Command form: ****** PTEXT xxxxx**
xxxxx – your text of the SMS (max. 74 symbols)

Default setting: **Position and speed of your car:**

4321 PTEXT Your car is right here**:**

Example: Setting your own PTEXT

3.2.12 STAND BY – power management of the GPS locator

In STAND BY mode the GPS locator is switched OFF and its power consumption is 0 mA. STAND BY mode is recommended to be used for long time car parking (e.g. in winter).

Command form: ****** OFF**

4321 OFF

Example: Command for setting in STAND BY

Mode	Description	Power consumption
Ready	The device is ON and responds to SMS commands. GPS protection and GPS higher level protection are OFF.	Max. 20mA* Recommended maximum time for not using (driving) the car is 6 weeks.
GPS protection	The device is ON and responds to SMS commands. At least one GPS protection is ON.	Max. 40mA* Recommended maximum time for not using (driving) the car is 2 weeks.
STAND BY	The device is OFF and does not respond to any SMS commands.	0mA Recommended at long time parking of the vehicle.

*The power consumption will be temporarily increased by 20mA when the relay is in the switched mode

In STAND BY mode the GPS locator does not respond to any SMS commands or calls. The GPS locator can be woken up from the STAND BY mode by either switching car ignition ON or by signal from external input (external alarm activation). The protections set before the STAND BY mode activation remains active.

3.2.13 Setting of confirmation message for SMS commands

If the confirmation message function is ON, after successful command processing, the GPS locator sends SMS with the text **command OK** to the telephone number that sent the original command. The confirmation SMS is not sent for the commands using different SMS response.

Command form: ****** CONFIRM x**
x = 0 – confirmation messages OFF
x = 1 – confirmation messages ON

Default setting: **1**

4321 CONFIRM 0

Example: Turning OFF the confirmation SMS

3.2.14 Turning off GPS security

The protection is automatically suspended when starting the vehicle. This command permanently disables the GPS protection.

Command form: **** **GPS x**
x = 0 – GPS protection OFF
x = 1 – GPS protection ON

Default setting: **1**

4321 GPS 0

Example: Permanently turning the GPS protection OFF

3.2.15 Setting of time period for sending a current position information at GPS alarm activation

First alarm SMS is sent to authorized phone numbers immediately and next alarm SMS are sent every time either set distance in kilometers is covered or set time in minutes. Number of sent alarm messages within one activated GPS alarm is determined by parameter **Nz**. However the set mode of protection is still active. If the vehicle keeps moving new GPS alarm is activated.

Command form: **** **PERIOD xy Nz**

x – determines whether next alarm SMS will be sent after a certain time or distance covered
   x = D – (Distance) after distance covered (Km)
   x = T – (Time) after a certain time (minuty)
y – determines the number of kilometers or minutes (y = 1 to 60)
z – determines the number of alarm SMS within one activated GPS alarm (z = 1 to 30)
   This parameter is optional and will be automatically set to value **N10** in case the parameter was not entered.

Default setting: **T5 N10**

4321 PERIOD D4 N5

Example: The SMS will be sent after each 4 kilometers covered after GPS alarm activation. It is 5 alarm SMS in total within one activated GPS alarm.

3.2.16 Checking the firmware version

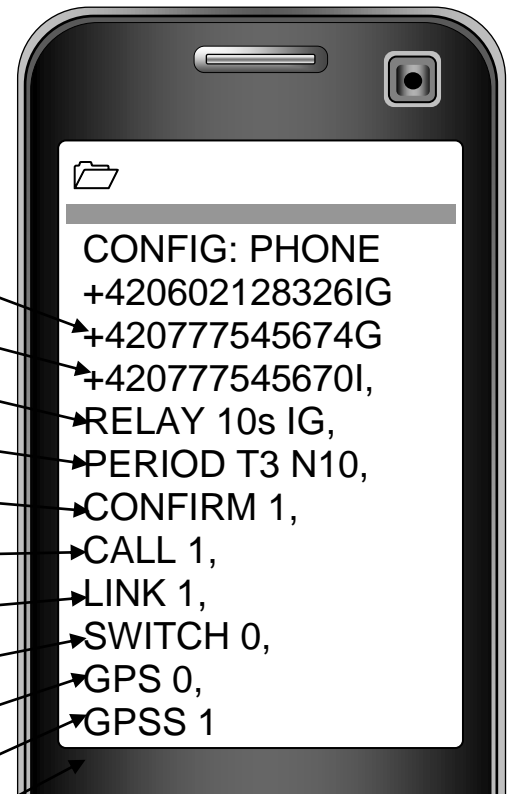Gets the firmware version of the locator.

Command form: **** **FW**

3.2.17 Detection of GPS locator configuration

Command form**: **** CONFI**

The GPS locator sends SMS with current configuration as a response to CONFIG command.

Telephone number – INPUT and GPS alarm are sent (IG)
Telephone number – GPS alarm is sent (G)
Telephone number – INPUT alarm is sent (I)
Relay configuration
Setting of period for sending SMS's at GPS alarm
Setting of confirmation for processed SMS's – 1 is ON GPS
Call in case of alarm activation – 1 is ON
Sending coordinates in the form of a link – 1 is ON
Current relay mode – 0 relay is unswitched
Mode of GPS protection – 0 is OFF
Mode of GPS higher level protection – 1 is ON

CONFIG: PHONE
+420602128326IG
+420777545674G
+420777545670I,
RELAY 10s IG,
PERIOD T3 N10,
CONFIRM 1,
CALL 1,
LINK 1,
SWITCH 0,
GPS 0,
GPSS 1

Example: Received SMS with a current configuration of GPS locator

3.2.18 Reset – restore default settings

The function resets all parameters of the GPS locator to factory default setting. After the command is sent, initialization of the GPS locator will be done and it is necessary to wait at least 2 minutes before the GPS locator is ready to process next commands.
This function does not affect assigned PIN code.

Command form: **** **RESET**

4321 RESET

Example: Reset of the GPS locator to factory default setting

Troubleshooting

PROBLEM	SOLUTION
The device does not switch ON	• Check the connection of power supply wires and wire "input – ignition" and switch car ignition ON.
The device does not log in GSM network – GSM LED (red) is blinking in interval 1x per second	• Check whether the SIM card is properly inserted. • Check availability of GSM operator signal. • Check whether inserted SIM card has disabled PIN code protection. • After successful logging the GSM LED (red) must blink in interval 1x per 3 seconds.
The device does not respond to SMS commands	• Check whether the device is switched ON and logged in GSM network. The logging in the GSM can be also verified by calling the device. • Make sure that commands are entered in correct format with valid PIN code. In case you use a pay as you go SIM card, make sure that the SIM is still active and that there is enough credit for sending SMS. • After the device is switched ON it is necessary to wait for device initialization completion (it can last up to 2 minutes) before first command can be sent. Previous SMS command must be processed before next SMS command can be sent.
The device responds to SMS commands, but does not respond to ringing from authorized telephone number	• Check the validity of entered authorized telephone number (including a country code) by using command CONFIG. • Verify whether the authorized telephone number has CLIP service activated (identification of a calling number).
The device does not activate GPS alarm	• Check whether appropriate GPS protection was activated (GPS 1, GPSS 1). • Check whether the GPS antenna is properly connected and placed. • Check whether entered telephone numbers for sending alarm SMS are correct.
False GPS alarm	• Check whether the GPS antenna is placed horizontally and is not obstructed from the top by metal parts of the vehicle. • The device dispose of a sophisticated algorithm for activation of GPS alarms. In very rare cases an activation of false alarm may occur which does not have to be caused by defect of the device or wrong installation. This situation might happen in garages and close to high buildings where the device can receive for longer time bad or reflected GPS signal.
Forgotten PIN code of the device	• Please contact your dealer, the device can be set to its default factory setting including the PIN only by a manufacturer.

Technical specifications

GSM	Quad-Band GSM 850/900/1800/1900MHz Compliant to GSM phase 2/2+ – Class 4(2W @ GSM850/900MHz) – Class 1(1W @ GSM1800/1900MHz) Modern integrated GSM antenna 900/1800/1900 MHz with a higher sensitivity (optional antenna 850 MHz)
GPS	Receiver 42 channels, L1 C/A code Accuracy position < 2.5 m CEP Hot start Ø < 1 s Cold start Ø 30 s
Power consumption	**Ready** – the device is ON and responds to all SMS commands (GPS protection is OFF) – max. 20mA **GPS protection** – the device is ON and responds to all SMS commands (at least one GPS protection is ON) – max. 40mA **STAND BY** – the device is OFF and does not respond to any SMS commands – 0mA
Power supply	Vehicle onboard power (12V DC)
Output	Switching Relay – the maximum current carrying capacity of the switching relay is 12V DC/5A
Input	Ignition External alarm
Weight and dimensions	Low weight – 72g Small dimensions 68x20x60 mm
Operation temperature	-40 °C to +85°C
Certifications	EHK-10 CE RoHS

Cable connector

GSM LED

GPS LED

Connector of the GPS antenna

Release button of SIM card holder