

# Installation of the CA-2103 "Athos" – RESET 1 car alarm

## in a vehicle that does not have remote control of central locking installed by the manufacturer

This manual is applicable for the FW version 9.x

In this mode the car alarm offers the following features:

- control of the central locking of the vehicle (if installed) with the remote control of the car alarm
- control using the voice menu of the car alarm
- checking the GPS (Global Positioning System) position of the car alarm, including the possibility of sending SMS information on leaving of a defined zone
- user-friendly administration through the MyJABLOTRON application, including the possibility of keeping the driver logbook
- automatic sending of alarm and information SMS to up to 6 mobile phones
- calling to preset phone numbers and sending a warning voice signal in case of an alarm

- determining the position of the vehicle using the LOCATOR (T-mobile) service
- sending data to the Jablotron Emergency Line
- possibility of remote immobilization of the vehicle from a mobile phone or the MyJABLOTRON application
- remote control and programming from a mobile phone
- securing the interior, cargo space of a vehicle or a garage with the use of up to 24 wireless detectors of the JA-18x and JA-100 series
- control of supplementary appliances (e.g. independent heating) using the CR-11A or MCB02 expansion modules
- setting through the C-Link program

### 1. Important warnings before installation

The car alarm is designed for installation in the vehicle interior carried out by an expert. It is suitable for vehicles with the 12 V or 24 V board supply and the negative battery pole connected to the ground.

Disconnect the battery before the installation. Make sure nobody is present in the vehicle if you handle the battery in a car fitted with airbags. Disconnection of the battery may also cause zeroing of some indicators of the vehicle (clock, preset values etc.). During installation avoid drilling of holes in metallic parts of the body. The manufacturer of the device is not liable for damage caused by wrong or unsuitable application of the product.

The contacts of the car alarm immobilizer behave in accordance with the settings in the SET program and you should consider which circuit is to be blocked, accordingly. The immobilizer of the car alarm must not inhibit any circuit that would hinder the activity of the electronic system of the vehicle or saving of data after stopping of the engine in normal operation in any case.

If you install the car alarm in vehicles with the board voltage of 24 V, you must use the 24 V siren instead of the siren delivered as standard. In this case, you must also extend the confirmation impulse of the siren to 100, or more ms.

For pressed joints use tools designed for this purpose. If you do not use a conductor in the car alarm cabling, cut it 10 cm from the connector, insulate it and tape it in the harness.

### 2. Wiring

- **Yellow – siren output** – switches +12 V (24 V) / max. 1,3 A. Indicates alarms (30 s) and confirms control signals.
- **Grey – door switch** input. Responds to connection or disconnection from the ground. If switches are not installed, add them to all the cabin doors.
- **White – INP1 input** – programmable input, responds to connection or disconnection from the ground.
- **Yellow and white – INP2 input** – programmable input, responds to connection or disconnection from the ground.
- **Orange – INP3 input** – programmable input, responds to connection or disconnection from the ground.
- **Blue – signal of activation of the ignition key**. Responds to +12 V (24 V) from the junction box. Check whether voltage is present in the connection conductor during starting as well.
- **Green – signal LED indicator** – install it in a visible place on the dashboard.
- **White and black (position 10) – "Lock" White and blue (position 11) – "Unlock"** – central locking control outputs. Ground current switching (max. 200 mA), the length of the impulses is adjustable.
- **Black – ground** – connect to the original grounding points.
- **Red – +12V (24V) power supply** – connect to the power supply from the battery. Only switch on the power supply after a thorough check of the entire installation !
- **2x brown** – immobilizing circuit (max. 8 A permanent, 12 A at peaks).
- **Pink – AUX output** – selectable function of the output, see table in paragraph 7 – works as a power supply of external sensors, where it switches +12 V/20 mA, or as bus communication for CR-11A modules or MCB-02 set in the "output module" mode.
- **RJ connector** – used for programming of the device through GD-04P, or for connection of the CU-08RF RFID PIT and card reader.
- **Orange and brown and orange and green** – (CAN-L, CAN-H) a pair of twisted conductors for connection of a CAN bus.

### 3. Inserting a SIM card and switching on the device for the first time

1. Before inserting the SIM card – deactivate its PIN code protection and mark its phone number. We recommend you to delete all the entries in the phone directory of the SIM card.
2. Inserting the SIM card – use a thin object to press the yellow pin for extension of the SIM card holder (front side of the alarm), insert the SIM card into the holder with the conductive contacts facing upwards and carefully push the holder back to the stop.
3. Install the enclosed GSM antenna – CAUTION, the car alarm must not be connected to the power supply without the GSM antenna connected and this antenna must not be installed on any metallic element. We recommend you to install the antenna under the dashboard on one of the plastic parts of the dashboard.
4. Install the enclosed GPS antenna - we also recommend you to install the antenna under the dashboard, but you can also install it on a metallic profile as it is fitted with a magnet on the bottom side marked with a silver self-sticking label. CAUTION, there must not be any other metallic objects over the GPS antenna and there is a rule for proper functioning of the GPS module that the bigger is the angle of the sky the antenna sees through the windshield, the more accurate is the GPS localization.
5. Check the wiring and connect the power supply. Faster flashing of the LED after connection to the power supply indicates login of the device to the GSM network; wait for the LED to go out (for up to 1 minute). Then, the alarm is logged in to the GSM network.

*If the LED does not go out within 1 minute, the network login was not successful. In such a case switch off the power supply, remove the SIM card, check the SIM card contacts for cleanness, insert it in a mobile phone and check whether connection can be established in the particular location. Also check whether the PIN code of the SIM card has been deactivated. If the connection check with the use of the mobile phone is successful, return the SIM card to the car alarm and repeat the entire procedure.*

### 4. Basic settings

The car alarm can be set in several ways. The simplest one is using remote access through the GSM network and the C-Link application, which can be downloaded from the manufacturer's website [www.jablotron.cz](http://www.jablotron.cz). Or you can use the GD-04P programming tool to interconnect the car alarm with a computer and perform the settings with the C-Link application again. Another option is programming individual functions using SMS commands. Individual functions and formats of SMS commands are described below.

#### 4.1 Device reset

To make the device work in accordance with your requirements, you must first set the logic of its behaviour with the RESET command. If you want to use the car alarm in such a way that it will be controlled with JABLOTRON key tags, you must set RESET 1. To perform the reset, send the SMS command to the phone number of the SIM card in the car alarm. Successful RESET is confirmed by 4 hoots.

**CAUTION, RESET causes restoration of the default settings of all the parameters and at the same time all wireless sensors and controls are deleted from the car alarm memory.**

**Command format: MCode RESET 1**

Example of the device reset command:

**1234 RESET 1**

You can also reset the device by making an entry in the SIM card - disconnect the car alarm from the power supply, remove the SIM card and insert it in a mobile phone and enter the word RESET in capital

letters in the phone directory of the SIM card. As the phone number of this name enter the reset number you need to set. After insertion of the SIM card into the car alarm and connection of the car alarm to the power supply the car alarm will be reset (with acoustic confirmation) and at the same time the phone directory of the SIM card will be deleted.

#### 4.2 APN settings for application C-Link

An APN is an Internet access point name. Without the correct APN settings cannot be programmed alarm device via applications C-Link. The correct APN for the given SIM should be ascertained from the mobile operator.

**Command format:** MCcode APN xxxxxxxx

where: xxxxxxxx – is the access point name

Command example:

**1234 APN internet** (the access point name is internet)

#### 4.3 Language selection

The default language of the car alarm is English, but the basic software contains more language versions. You will obtain more information about the language versions from the manufacturer. By selecting a language you will only switch the language set to the default texts of the required language, but you will not change the car alarm configuration.

**Command format:** MCcode LANGUAGE CZ/EN

Command example:

**1234 LANGUAGE CZ** (the new language will be Czech)

Supported default languages: Czech CZ, German DE, English EN, Polish PL, Slovak SK.

#### 4.4 Setting the master code

The master code is used for programming and control of the car alarm. Thus, it is intended for an installation technician or administrator. The master code can also be used to change the user code. The default master code is 1234. **The manufacturer recommends you to change the code.** The master code must contain 4 to 10 characters. You can use numbers 0 - 9 and the characters of the alphabet (without diacritic marks) from A to Z. Lower and upper case letters are not distinguished.

**Command format:** MCcode MC newMCcode newMCcode

Command example:

**1234 MC CA654321 CA654321** (the new code will be CA654321)

#### 4.5 User code setting

The user code is used for user control of the car alarm. It is generally used by the driver or user of the car. The user code cannot be used to change the master code. The default user code is 1111.

**The manufacturer recommends you to change the code.** The characters of the user code are subject to the same rules as the MC code while if you want to use the voice menu, you must use the numbers only. Also, you are not recommended to set the same value of the MC and UC code!!!

**Command format:** UCcode UC newUCcode new UCcode

Command example:

**1111 UC AUTO988 AUTO988** (the new UC code will be AUTO988)

### 5. Extended configuration

Extended configuration of the car alarm can be done with the use of multiple SMS commands. Such a command normally starts with the code and then individual commands are separated from each other with a comma.

Command example:

**1234 TEL1 +420777654321,TEL2 +420777654322,VERIF ON ....**

#### 5.1 Enrollment of remote controls

Remote controls can only be enrolled or deleted with the ignition key on. Up to eight controls can be enrolled. After receiving of the command the LED of the car alarm will start to flash and at the same time it will hoot four times. Individual controls are enrolled by simultaneous pressing of the and keys for approx. 3 s. Enrollment of each control is indicated by a short hoot of the car alarm. You can leave the enrolling mode by turning the ignition key off. By enrolling at least one control in the enrolling mode you will delete all the previously enrolled ones. Therefore, during every enrollment session you must enroll all controls that will be used in the device.

**Command format:** MCcode LEARN RC

Command example:

**1234 LEARN RC**

#### 5.2 Enrolling and setting wireless detectors

Wireless detectors can only be enrolled or deleted with the ignition key on. Wireless detectors can be arranged into two groups. You can enroll up to 12 detectors on either of these groups. In the setting mode internal detectors can be switched off, so just a part of the vehicle (building) can remain to be set. This is e.g. convenient in caravans or if a dog is present in the vehicle. External detectors remain active throughout the setting condition. After receiving of the command the LED of the car alarm will start to flash and at the same time it will hoot four times. Individual wireless detectors are enrolled by insertion of a battery into the sensor. Enrollment of each detector is indicated by a short hoot of the car alarm. You can leave the enrolling mode by turning the ignition key off. By enrolling at least one detector in the particular group in the enrolling mode you will delete all the previously enrolled ones. Therefore, during every enrollment session of INT or EXT detectors you must enroll all detectors that will be used in the device and the particular group.

**Command format for internal detectors:** MCcode LEARN INT

**Command format for external detectors:** MCcode LEARN EXT

Command example:

**1234 LEARN INT**

If instantaneous response (INS) is set, an alarm is triggered immediately after activation. If you set a delayed response (DEL) of a detector, an alarm will only be triggered 20 s after the activation. For all detectors the car alarm provides the exit delay of 20 s after setting. Caution, motion detectors have a battery saving mode and may only respond 1 or 5 minutes after setting.

If the battery of a wireless detector is discharged, the car alarm will send an SMS message to the number for alarm calls. The message will contain identification of the concerned detector. The car alarm will proceed in the same way if peripheral device loss monitoring is enabled in the sensor.

As the detectors also monitor the tamper sensor, during the replacement of the battery the ignition key must be on to avoid an undesired alarm.

#### 5.3 Setting of drivers' phone numbers

Up to 99 phone numbers of users can be assigned to the car alarm. All of them can be recognized as drivers for the driver logbook. An added parameter can be used to specify sending of alarm and informative messages (unlocked car, unknown SMS) to the first six ones, or to give them the control right. A phone number may consist of max. 19 numbers and must be entered in the international format. The default setting for TEL1 is 3:1:1:0:1:1, for TEL 2-6 it is 3:0:0:0:0:0

**Command format without a parameter:**

**MCcode TELx +yyyyyyyyyyyyy**

**Command format with a parameter:**

**MCcode TELx +yyyyyyyyyyyyy a:b:c:d:e:f**

where:

|                      |  |
|----------------------|--|
| <b>x</b>             | sequential number of the phone number (from 1 to 99);  |
| <b>yyyyyyyyyyyyy</b> | phone number in the international format (max. 19 digits, except the + character)                          |
| <b>a</b>             | alarm calling<br>0 = does not send anything<br>1 = sends an SMS<br>2 = calling only<br>3 = SMS and calling |
| <b>b</b>             | PANIC calling<br>0 = does not send<br>1 = sends an SMS<br>2 = calling only<br>3 = SMS and calling          |
| <b>c</b>             | GEOFENCE<br>0 = does not send<br>1 = sends an SMS<br>2 = calling only<br>3 = SMS and calling               |
| <b>d</b>             | SINFO<br>0 = does not call<br>1 = sends an SMS<br>2 = calling only<br>3 = SMS and calling                  |
| <b>e</b>             | INFO SMS<br>0 = does not send<br>1 = sends an SMS  |

- f control by calling
- 0 = cannot be controlled
  - 1 = can be controlled via the voice menu
  - 2 = can be controlled by mere ringing

Example of a setting command of numbers 1 and 2:

**1234 TEL1 +420777654321,TEL2 +420777654322 3:0:0:0:2**  
(TEL1 will be +420777654321 and since it is without a parameter, it will keep the default setting, TEL2 will be 420777654322 and the parameter will be enabled ringing control)

#### 5.4 Assignment of RFID PITS and cards to drivers

If the car alarm is also used for the driver logbook and an external RFID CU-08RF reader is connected to it, a PIT or card that each driver will use for his identification at the beginning of a drive can be assigned to each driver. The car alarm supports the Jablotron PC-02x, PC-04x, JA-192J, JA-194J access pits and the Jablotron PC-01, JA-190J cards.

PITS and cards can only be enrolled or deleted with the ignition key on. After receiving of the command the LED of the car alarm will start to flash and at the same time it will hoot four times. After application of each individual PIT to the reader the car alarm indicates its enrollment by flashing and hooting and then it moves to the next position.

During the first PIT enrollment the command can be sent without specification of a particular position and in such a case the car alarm will start the enrollment from driver 1.

**Command format:** MCcode LEARN PIT

Command example:

**1234 LEARN PIT**

If a PIT is to be enrolled on a particular position or PITS should be assigned from a certain position, the command must also contain the position number.

**Command format:** MCcode LEARN PIT xx

where:

xx sequential number of the PIT

Example of the command for enrolling a PIT on position 56:

**1234 LEARN PIT 56**

**Deleting all enrolled pits.**

**Command format:** MCcode DELETE PIT ALL

Command example for deleting all enrolled PITS:

**1234 DELETE PIT ALL**

**Deleting a particular PIT.**

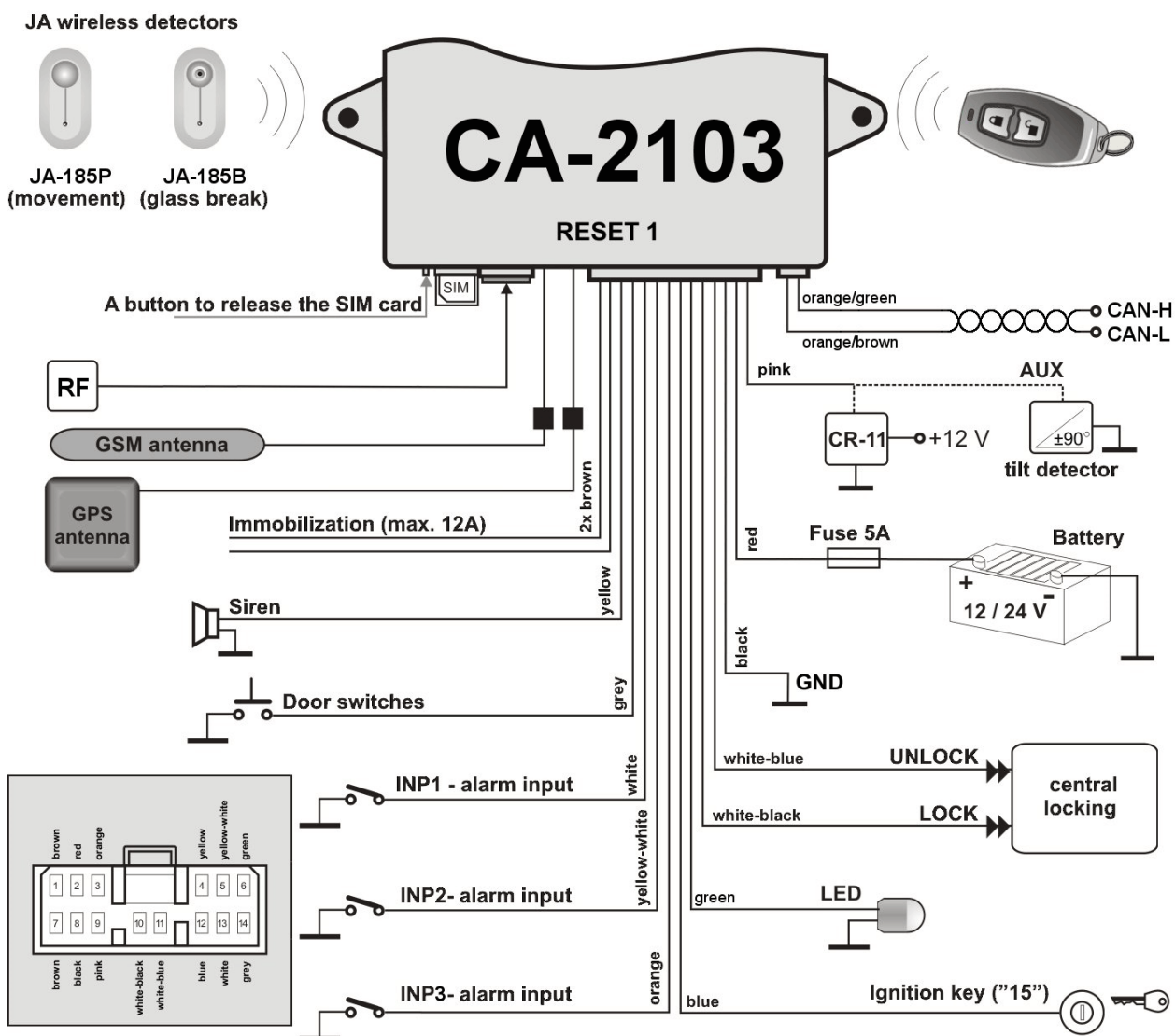
**Command format:** MCcode DELETE PIT xx

where:

xx – sequential number of the PIT

Command example for deleting the PIT in position 8:

**1234 DELETE PIT 8**



**Fig. 1: Car alarm connection in the RESET 1 profile.** In this connection the car alarm is able to control the central locking of the vehicle.

## 6. Setting the DIP user parameters

Setting of the DIP user parameters defines the outward behaviour of the car alarm towards the customer. Each parameter of the table A to K can be replaced with the respective numerical value in the SMS command. It defines the setting of the particular function then.

**Command format:** MCcode DIP ABCDEFGHIJK

Command example:

**1234 DIP AB1DEFGHIJK** (this command is used to set the response of a shock detector to an alert)

*Default values are marked by a bold letters.*

| DIP | Setting description  |
|-----|--|
| A   | Siren settings:<br>0 = silent control without siren confirmation<br>1 = acoustic confirmation on setting and unsetting, 5 ms<br>2 = acoustic confirmation on setting and unsetting, 7 ms<br><b>3 = acoustic confirmation on setting and unsetting, 10 ms</b><br>4 ... 9 = acoustic confirmation on setting and unsetting (other siren types), then the impulse length is 20, 30, 40, 50, 100, 200 ms   |
| B   | 0 = Silent alarm<br><b>1 = The siren hoots in case of an alarm</b>   |
| C   | Shock detector response:<br><b>0 = off</b><br>1 = alert<br>2 = alarm<br>3 = alert and alarm  |
| D   | Shock detector sensitivity (setting range 1 to 9):<br>1 = low<br><b>5 = medium</b><br>9 = maximum  |
| E   | Voice menu:<br><b>0 = forbidden for phone numbers 7-99, for numbers 1-6 according to settings</b><br>1 = allowed for phone numbers 7-99, for numbers 1-6 according to settings<br>2 = allowed for phone numbers 7-99 and for unknown numbers, for numbers 1-6 according settings   |
| F   | User verification by MC/UC code of SMS commands and voice menu:<br><b>0 = off</b><br>1 = on  |
| G   | <b>0 = The user cannot change the texts of SMS messages of events</b><br>1 = The user can set his own texts of SMS messages of events using the TXT instruction  |
| H   | <b>0 = REARM function off</b><br>1 = The alarm is set if nobody gets into the car within 1 minute from unsetting   |
| I   | <b>0 = immobilization is activated five minutes after setting, by an alarm, or the SMS command IMO</b><br>1 = Immobilization is activated five minutes after setting, by an alarm, or the SMS command IMO and also if the ignition key is off for more than 5 minutes (AUTOIMO)<br>3 = Passive immobilization – Immobilization is only activated by an alarm, or the SMS command IMO.<br>4 = immobilization is activated five minutes after setting, by an alarm, or the SMS command IMO. 'Driver authorization deactivates immobilization.<br>WARNING: read the notes below this table. * |
| J   | Notification of the unset vehicle in the SMS STATUS form is sent to numbers with enabled INFO SMS if the ignition key is off and the vehicle is unset:<br>0 = the car alarm does not send a notification<br>1 = sends after 15 minutes<br>2 = sends after 30 minutes<br>3 = sends after 45 minutes<br><b>4 = sends after 60 minutes</b>  |
| K   | 0 = The alarm does not forward messages from unknown numbers<br><b>1 = The alarm forwards SMS messages from unknown numbers to numbers with enabled INFO SMS</b>   |

## 7. Setting the SET operation parameters

The setting of the SET operation parameters defines the internal behaviour of the car alarm towards the vehicle installation. Each parameter of the table A to N can be replaced with the respective numerical value in the SMS command. It defines the setting of the particular function then.

**Command format:** MCcode SET ABCDEFGHIJKLMNO

Command example:

**1234 SET AB2DEFGHIJKLMNO** (this command is used to set the duration of the locking impulse to 4/4s)

| SET | Setting description   |
|-----|---|
| A   | 0 = Open door indication and activation of INP and CAN inputs on setting off<br><b>1 = Open door indication and activation of INP and CAN inputs on setting on</b><br>2 = Activation of INP on setting on, open door indication and CAN inputs postponed for 10 s<br>3 = Activation of INP on setting on, open door and CAN inputs indication off   |
| B   | <b>0 = Voltage drop sensor off</b><br>1 = Voltage drop sensor on (detection starts 20 minutes after setting)  |
| C   | Duration of the locking / unlocking signal<br><b>0 – 0.5 / 0.5 s</b><br>1 – 60 / 0.5 s<br>2 – 4 / 4 s   |
| D   | Logic setting for the DOOR input:<br>0 = immediate response regardless of the setting status (24h response); in the unset status it only sends SMS messages and calls, in the set status it triggers the siren as well<br><b>1 = immediate activation</b><br>2 = postponed activation 5 min after setting<br>3 = postponed activation 15 min after setting<br>4 = postponed activation 30 min after setting<br>5 = warning response (on activation just a siren hoot)<br>6, 7, 8 = cannot be set<br>9 = panic   |
| E   | <b>1 = The DOOR input is activated on connection with the vehicle chassis (GND)</b><br>2 = The DOOR input is activated by disconnection from the vehicle chassis  |
| F   | Logic setting for the INP1 input:<br>0 = immediate response regardless of the setting status (24h response); in the unset status it only sends SMS messages and calls, in the set status it triggers the siren as well<br><b>1 = immediate activation</b><br>2 = postponed activation 5 min after setting<br>3 = postponed activation 15 min after setting<br>4 = postponed activation 30 min after setting<br>5 = warning response (on activation just a siren hoot)<br>6 - the input confirms locking/unlocking with the original R.C. by flashing of the direction indicators for setting and unsetting<br>7 - the input only confirms unlocking with the original R.C. by flashing of the direction indicators for setting and unsetting<br>8 = cannot be set |
| G   | <b>1 = The INP1 input is activated on connection with the vehicle chassis (GND)</b><br>2 = The INP1 input is activated by disconnection from the vehicle chassis  |
| H   | Logic setting for the INP2 input:<br>0 = immediate response regardless of the setting status (24h response); in the unset status it only sends SMS messages and calls, in the set status it triggers the siren as well<br><b>1 = immediate activation</b><br>2 = postponed activation 5 min after setting<br>3 = postponed activation 15 min after setting<br>4 = postponed activation 30 min after setting<br>5 = warning response (on activation just a siren hoot)<br>6 = cannot be set<br>7 = cannot be set<br>8 = private business (INP2 only)   |
| I   | <b>1 = The INP2 input is activated on connection with the vehicle chassis (GND)</b><br>2 = The INP2 input is activated by disconnection from the vehicle chassis  |
| J   | Logic setting for the INP3 input:<br>0 = immediate response regardless of the setting status (24h response); in the unset status it only sends SMS messages and calls, in the set status it triggers the siren as well<br><b>1 = immediate activation</b><br>2 = postponed activation 5 min after setting<br>3 = postponed activation 15 min after setting<br>4 = postponed activation 30 min after setting<br>5 = warning response (on activation just a siren hoot)<br>6, 7, 8 = cannot be set<br>9 = panic   |
| K   | <b>1 = The INP3 input is activated on connection with the vehicle chassis (GND)</b><br>2 = The INP3 input is activated by disconnection from the vehicle chassis  |
| L   | Not used in RESET 1, enter 1  |
| M   | 0 = The car alarm does not check GSM jamming<br>1 = The car alarm checks GSM jamming on setting (alarm)<br><b>2 = The car alarm checks GSM jamming on setting (only SMS info)</b>   |
| N   | 0 = The AUX output is the bus for communication with the CR-11A modules<br><b>1 = The AUX output provides power supply for external sensors</b>   |
| O   | <b>0-9 = Alarm delay after the activation of the wired inputs and wireless devices in seconds</b>   |

## 8. CAN bus connection setting

The car alarm can read the statuses of the ignition key, doors, boot, bonnet, setting and unsetting with the original remote control directly from the CAN bus of the vehicle. The function can be activated by entering of the respective program number in the car alarm, which will enable reading of all available information for the car alarm from CAN. If reading of some information is only required, you can specify it in a more detailed way using a parameter after the program number.

**Command format without a parameter: MCcode CAN xxx**

**Command format with a parameter: MCcode CAN xxx a:b:c:d:e:f**

where:

|            |  |
|------------|--|
| <b>xxx</b> | is the number of the CAN program for the particular vehicle                                      |
| <b>a</b>   | ignition key<br>0 = the information is not read<br>1 = the information is read                   |
| <b>b</b>   | doors<br>0 = the information is not read<br>1 = the information is read                          |
| <b>c</b>   | boot<br>0 = the information is not read<br>1 = the information is read                           |
| <b>d</b>   | bonnet<br>0 = the information is not read<br>1 = the information is read                         |
| <b>e</b>   | setting with the original RC<br>0 = the information is not read,<br>1 = the information is read  |
| <b>f</b>   | unsetting with the original RC<br>0 = the information is not read<br>1 = the information is read |

Command example:

**1234 CAN 111** (this command was used to select the program 111, e.g. Škoda Octavia)

Command example:

**1234 CAN 111 1:0:1:1:1:1** (this command was used to select the program 111, e.g. Škoda Octavia; all information will be read from CAN, except the door input)

## 9. Other functions

### 9.1 Leaving the defined zone - GEOFENCE

In the car alarm you can set the GEOFENCE function for monitoring of leaving a defined zone.

**Command format: MCcode GEOFENCE xx:yy:a:b**

where:

|           |  |
|-----------|--|
| <b>xx</b> | latitude coordinates in whole degrees with the +/- sign (can be requested from the car alarm using the GPS SMS command)  |
| <b>yy</b> | longitude coordinates in whole degrees with the +/- sign (can be requested from the car alarm using the GPS SMS command) |
| <b>a</b>  | radius of the zone circle that is detected in km - allowed values 1 – 99   |
| <b>b</b>  | 0 = out of zone,<br>1 = in zone,<br>2 = both events  |

Command example:

**1234 GEOFENCE +50.7290:+15.1766:5:1**

As the car alarm might leave the particular zone even several times a day or hour, you must also set the total number of SMS messages that it can send. Without setting of this parameter the GEOFENCE function will not be active.

**Command format: MCcode GEOFENCE SMS h:d**

where:

|          |   |
|----------|---|
| <b>h</b> | total number of SMS messages sent an hour (the allowed range is 1-99) |
| <b>d</b> | 0   |

Command example:

**1234 GEOFENCE SMS 5:10** (the car alarm will send max. 5 SMS messages an hour, but on the whole it is limited to 10 SMS a day)

The entire GEOFENCE function can be then activated by means of a user command, see point 10.10.

### 9.2 Determining the position using T-Mobile Locator

The LOCATOR command only works with the activated T-Mobile Locator (Where is...) service. On activation of the service select the LPIN location code, which must be set as one of the parameters of the command setting. The setting is done with the command specified below. When it is sent to the car alarm, it will send a query to the operator, who will return the information about its position and the car

alarm will send it back to the number the original request came from. It may take up to two minutes. For repeated position location you need not send the whole command text again, but just the LOCATOR command, see point 10.9.

**Command format:**

**MCcode LOCATOR 5727 5727 KDE LPIN xx...x**

where:

|               |   |
|---------------|---|
| <b>5727</b>   | is the number of the service where the request is sent  |
| <b>5727</b>   | is the number the car alarm expects to get the answer from (it is generally the same number). |
| <b>KDE</b>    | is the name of the service  |
| <b>LPIN</b>   | is the code used for activation of the T-Mobile Locator service                               |
| <b>xx...x</b> | is the phone number of the car alarm SIM card   |

Command example:

**1234 LOCATOR 5727 5727 KDE 12345678 737231897**

### 9.3 Checking the balance of prepaid cards

The manufacturer recommends you to use SIM cards with a mobile phone contract program in the car alarm. If a prepaid card is used, there is the risk of function loss due to low credit or expiration of the time of its validity!

By sending the CREDIT command you can check the credit balance of the prepaid card and activate its periodic checking at the same time. The setting is done with the command specified below. When it is sent to the car alarm, it will send a query to the operator, who will return the information about the credit balance and the car alarm will send it back to the number the original request came from. It may take up to two minutes. For repeated balance checking you need not send the whole command text again, but just the CREDIT command.

**Command format: MCcode CREDIT uuu..u xx yyy zz**

where:

|                |   |
|----------------|---|
| <b>uuu...u</b> | is the command for checking the credit balance (*104*# O2, *101# T-mobile, *22# Vodafone)           |
| <b>xx</b>      | is the credit checking period in days   |
| <b>yyy</b>     | is the minimum credit balance in CZK  |
| <b>zz</b>      | is the position where the number specifying the credit balance in the operator's SMS message starts |

Command example:

**1234 CREDIT \*101# 7 200 1**

This command activates checking if the credit balance is not below 200 CZK every 7 days (the figure starts on the 1st position in the operator's SMS message). If the established credit balance is lower, the message from the operator is sent to the phone number 1. You can deactivate the function by sending the command with the zero credit checking period set (xx=0).

### 9.4 Reset of the GSM module of the car alarm

Setting of some functions of the GSM network is conditional on logout of the SIM card from the network and its new login on the part of the mobile phone operator. In this case the GSM module of the car alarm can be restarted using the RESET GSM command.

**Command format: MCcode RESET GSM**

Command example:

**1234 RESET GSM**

### 9.5 DINFO service command

You can use the DINFO command to get information about the basic parameters of the car alarm and its status. The answer SMS in the format "The JABLOTRON unit reports: CA-2103; RESET:1; SN: 14004162847002; ID:671003; SW:008; HW:MM10207; RK:ABH9P-HD89R-15GT; GSM:57%; SAT:9/10; VCC:12.7V/7.9V; T:29.4C; Time 15:36 26.3." gradually contains information about the car alarm type, car alarm serial number, car alarm ID (if set), SW version, HW version, registration code, GSM signal strength in percent, number of used/visible satellites, car battery and backup battery voltage, temperature, time and date. Temperature measuring performed on the PCB of the car alarm is only for orientation and for optimizing the charging of the battery.

**Command format: MCcode DINFO**

Command example:

**1234 DINFO**

## 10. Car alarm operation

You can operate (set and unset) the car alarm with the use of remote controls. Other operation methods are SMS commands, ringing control, or voice menu control. User SMS commands can be sent from registered phones without the MC or UC code unless command verification – the DIP F. parameter is activated. Then you can log in as a driver with the use of PITS or card.

### 10.1 Remote control operation

The **6** key is used to completely set and lock the vehicle, the **1** key is used to unset and unlock it. If within 15 seconds from setting you press the **6** key, the vehicle will be partially set (confirmed with an acoustic signal). In this mode the internal wireless detectors and the voltage drop sensor are not active and the power supply for the external sensors is not activated. Simultaneous pressing of the **6** and **1** keys can be, through the CR-11A or MCB-02 module, used for other supplementary functions (e.g. switching of independent heating etc.).

### 10.2 Voice menu and ringing control

For users 1-6 car alarm control by ringing or using the voice menu can be set. If for a certain number ringing control is activated, after ringing the car alarm status will change (the car alarm will be unset or set). In the case of the voice menu control the car alarm will answer the phone call and offer the user individual options for car alarm control. The voice menu function may be limited in case of simultaneous use of data services (e.g. communication with the C-Link application or sending data to a collection server). The voice menu function may also be conditional on the user code, which must be numerical in this case.

### 10.3 SMS command control

You can operate (set and unset) the car alarm with the use of SMS commands as well. You can activate setting using the AM command, partial setting using the AM EXT command, or unsetting using the DM command.

**Command format:** UCcode AM/AM EXT/DM

Command example:

**1111 AM EXT** (the car alarm is partly set)

### 10.4 Behaviour during an alarm

Intrusion on any entrance, or detector in the set condition triggers an alarm. During an alarm the siren hoots for 30 s (optional) and SMS messages are sent to the TEL1 to TEL6 phone numbers if they are specified for alarm calls, see point 5.3. Then, the car alarm will call these numbers. If the alarm is terminated by the user, all transmissions are discontinued.

You can cancel the alarm with the **1** key of the remote control or using the DM instruction from the mobile phone (the DM command will also unlock the car). If the alarm is properly cancelled by the user, a SMS about cancellation of the alarm will be sent.

### 10.5 Permanent immobilization of the vehicle

The behaviour of the immobilization circuit of the car alarm is based on the setting of the DIP I parameter. However, to put it simply, from the user's point of view the car alarm immobilizer always prevents the car from being started in the set condition. However, there may be a situation when the car owner accidentally loses the car keys or lends them to someone who will break the rules. E.g. if someone steals the owner's keys in a shop or from a sports facility locker, or if the owner gives the keys to someone else by himself (car rent shop, car repair shop etc.). In this case the car alarm can be permanently blocked to prevent misuse of the vehicle.

**Command format:** UCcode IMO/UNIMO

Command example:

**1111 IMO** (the car alarm immobilizer is permanently blocked)

### 10.6 Optical indication by the LED lamp

The car alarm indicates its status with the LED indicator.

|                              |  |
|------------------------------|--|
| <b>flashes more quickly</b>  | logging to the GSM network is going on or the GPS signal has been lost |
| <b>flashes</b>               | indicating the set condition   |
| <b>flashes slowly</b>        | the unit indicates AUTOIMO   |
| <b>flashes SOS (...----)</b> | unit failure   |
| <b>lights permanently</b>    | motion indicated, the drive is monitored                               |
| <b>off</b>                   | idle condition of the car alarm  |

### 10.7 Acoustic indication by the siren

The car alarm also indicates its status with the siren

|  |                                       |
|--|---------------------------------------|
| <b>one hoot</b>                            | car alarm setting (optional)          |
| <b>two fluently continuing hoots</b>       | partial setting                       |
| <b>two separate hoots</b>                  | unsetting (optional)                  |
| <b>three separate hoots</b>                | unsetting after an alarm              |
| <b>four separated hoots</b>                | an active input on setting (optional) |
| <b>six fluently continuing hoots</b>       | unavailability of the GSM network     |
| <b>siren permanently on (max. 30 sec.)</b> | alarm (optional)                      |

### 10.8 Activation of an auxiliary appliance

An auxiliary appliance can be activated with the AUXA or AUXB command when the respective output of the CR-11A, or MCB-02 module is activated. You can use the ON/OFF commands to change the output status or you can activate the output for an exactly defined time. However, the maximum activation time is limited to 60 minutes.

**Command format:** UCcode AUXA/AUXB ON/OFF

Command example:

**1111 AUXA ON** (activating the AUXA output of the module for one hour unless it is deactivated with the AUXA OFF command)

**Command format:** UCcode AUXA/AUXB xy

where:

|          |                               |
|----------|-------------------------------|
| <b>x</b> | number of seconds, or minutes |
| <b>y</b> | S/M seconds or minutes        |

Command example:

**1111 AUXB 25M** (activating the AUXB output for 25 minutes)

### 10.9 Locating the current position

You can locate the current position of the car alarm using the GPS and LOCATOR SMS commands. The answer to the GPS SMS message contains a reference to Google Maps, which allows you to display the position of the vehicle right in the map in a smartphone. The answer to the LOCATOR SMS contains textual specification of the position by the mobile operator. This function must be set by the installation technician already.

**Command format:** UCcode GPS

Example of a command for location of the current position:

**1111 GPS**

**Command format:** UCcode LOCATOR

Example of a command for location of the position in the mobile phone operator's network:

**1111 LOCATOR**

### 10.10 GEOFENCE function

If the parameters of the GEOFENCE function have been set using the MC code, this function can be activated using a command in a one-off way or permanently with the possibility of deactivation. On leaving of the specified zone the unit sends an SMS message to TELINFO.

**Command format:** UCcode GEOFENCE ON/OFF

Command example:

**1111 GEOFENCE ON** (the function will be activated)

### 10.11 Current status of the vehicle

You can check the current status of the car alarm with the STATUS command. The car alarm responds to it with an answer specifying its current status.

**Command format:** UCcode STATUS

Command example:

**1111 STATUS**

### 10.12 System help

Using the HELP command you can obtain the basic instructions to control the car alarm by means of SMS commands.

**Command format:** UCcode HELP

Command example:

**1111 HELP**

### 10.13 Credit balance check

If the CREDIT function has already been set, you can query the credit balance using the CREDIT command only.

**Command format:** UCcode CREDIT

Example of a command to check the credit balance of a prepaid card:

**1111 CREDIT**

### 10.14 Remote siren activation

Using the SIREN command you can remotely activate hooting of the connected siren. You can switch the siren on or off, or activate it for an exactly defined time period.

**Command format:** UCcode SIREN ON/OFF

Command example:

**1111 SIREN** (this command will activate the siren for 30 seconds)

**Command format:** UCcode SIREN xy

where:

**x** number of seconds, or minutes

**y** S/M seconds or minutes

Command example:

**1111 SIREN 5M** (the siren will be activated for 5 minutes)

## 11. Functions related to the guarding service and the driver logbook

### 11.1 Vehicle guarding by the Jablotron Emergency Line

The car alarm enables vehicle guarding through the ARC (Alarm Reporting Center) Regular communication with the ARC is conducted in an encrypted format. If the vehicle is attacked, the ARC will ensure an intervention. The settings are done remotely by the service provider (guarding agency).

### 11.2 Driver logbook

The car alarm also supports sending of drive data for processing in the driver logbook. Ask the service provider to set the service and the provider will do the setting.

### 11.3 Indication of a driver that is not logged in.

The AUX output can be used to switch auxiliary appliances through the CR-11 or MCB-02 modules, see point 5.5. Or the modules can control e.g. a buzzer that will acoustically ask the driver for authorization with the PIT on turning the key. The length of the indication is max. 20 sec or until the driver is authorized. For this function the AUX output can only be used and it has three modes. It is either permanently on, or it may be switched on intermittently in the 1s/1s cycle during this time. If one of these two functions is active, the set driver will be deleted at the end of every drive.

The third mode is 30-minutes' activation of the AUX output causing inhibition of the starter. The purpose of this function is to make the driver log in as the activity of the output is terminated immediately after the login.

**Command format:**

**MCcode AUXA PIT ON/FLASH/IMO/OFF**

Examples of commands:

**1234 AUXA PIT ON** (the AUX output will be active for 20 sec after turning on of the key)

**1234 AUXA PIT FLASH** (the AUX output will be switched on intermittently in the 1a/1s cycle for 20 sec after turning on of the key)

**1234 AUXA PIT IMO** (the AUX output will be active for 30 minutes unless the driver logs in)

### 11.4 LED indication during driving

The car alarm can indicate monitoring of the drive by lighting of the LED. This function is optional. It can generally be used if the car alarm is used for the Driver Logbook.

**Command format:** MCcode LED ON/OFF

Command example:

**1234 LED ON** (the LED will light up during drive monitoring)

### 11.5 Indication of exceeded drive time

Similarly to the case of an unauthorized driver the car alarm may notify the user that the allowed drive time has been exceeded. If this function is active, the car alarm measures the drive time from turning on of the key and after expiration of the allowed time period it activates the AUX output of the module for a predefined time. This may notify the driver that a safety break is necessary.

**Command format:**

**MCcode AUXA TIMER x:y/ON/OFF**

where:

**x** time from the start of the drive in minutes (the allowed value is 1-1440)

**y** length of notification after expiration of the allowed drive time in seconds (the allowed value is 1-300)

**ON/OFF** activation and deactivation of the function with already defined parameters x and y

Command example:

**1234 AUXA TIMER 120:20** (the AUX output will be activated after two hours' drive for 20 seconds)

### 11.6 Driver's login with a PIT or a card

If drivers need to be assigned to drives, it can be done by application of the PIT or card of the particular driver to the CU-08RF reader. From that moment on the given driver is logged in for all the subsequent drives until somebody else is logged in. If the drivers should forget to log in or ignore this obligation, they can be notified of the necessity to log in using the AUXA PIT ON/FLASH. In this case, after the end of a drive the driver's number is always deleted so that the originally logged in driver should not remain logged in when somebody else is driving the car.

### 11.7 Assigning a driver using an SMS command

Drivers can also be assigned with the use of an SMS command. The car alarm switches the driver according to the order in his internal memory.

**Command format:** UCcode D

Command example:

**1111 D**

### 11.8 Entering the drive type

The basic selection of the drive type is done using a toggle switch installed in the vehicle interior. If this switch is not installed, the type can be selected using an SMS message.

**Command format:** UCcode Tx

where:

**x** drive type: 0 is a business trip (default)  
1 is a private trip

Command example:

**1111 T1** (private trip selected)

### 11.9 Controlling an external device

The car alarm can transmit a remote controller signal usable to control gates, barriers, garage doors or lights. However, the car alarm must be connected to the CAN bus and this function must be available for such vehicle. Signal transmission is activated by flashing the high beam head lights following this logic:

- Button A signal – one long flash, 1-3 seconds
- Button B signal – two short flashes within 3 seconds

Use these commands to enroll the car alarm in the AC-160 and AC-160-DIN units:

**Command: UCcode REM A** (button A)

**Command: UCcode REM B** (button B)

Use this command to enroll the car alarm a JABLOTRON 100 system:

**Command: UCcode REM**

By default, the controller signal transmission is disabled. It can be enabled by transmitting an enrollment signal. If it is necessary to disable it, use this command:

**Command: UCcode REM a:b**

Where:

**a or b = 0**, button disabled

**a or b = 1**, button enabled

Command example:

**1111 REM 1:0** (button A enabled, button B disabled)

Note: This is an additional function and it is supported only by certain types of vehicles (CAN buses).



## 12. Others

### 12.1 Roaming

If roaming is necessary, you must first obtain information about settings from the mobile phone operator, or provider of the driver book or ARC. In the default setting of the car alarm calls and SMS messages are enabled. On the other hand, data transmissions are disabled in the roaming mode by default. Data roaming can be activated in the car alarm by the provider of the driver logbook or ARC or it can be activated through the C-Link application.

### 12.2 Forwarding unknown SMS messages

SMS messages that the unit is not able to identify by the password or number of the caller are sent to TEL INFO. These may e.g. be messages from the operator about the credit balance, information about changes of the phone contract, one-off passwords etc.

This function also serves as protection from possible testing by an unauthorized person to break the unit code.

### 12.3 Limitation of the number of alarms

If an alarm occurs repeatedly for the same reason (input), the respective input is excluded from the guarding after the 3rd alarm (until the guarding is deactivated)

## 13. Board voltage backup and checking

In case of board voltage problems (intentional disconnection of the car battery etc.) the car alarm is equipped with a backup battery. It supports the operation of the car alarm even in periods of absence of the main board voltage (for at least 6 hours). Information about the power supply loss is immediately sent to the phone numbers for alarm calls. Information about power supply restoration is send 60 seconds after the restoration to the same numbers.

If the car alarm uses the backup supply, its priority is vehicle location. To make the location time as long as possible, the car alarm gradually reduces the power consumption. For this reason, immediately after disconnection of the battery it will switch off any siren and LED indication. After 15 minutes it will also switch the PGS module to the sleep mode, waking it up once an hour for the purpose of position updating or after an SMS command requesting the GPS position.

## 14. Technical parameters of the car alarm

|   |  |
|---|--|
| power supply                                    | 12/24 V DC (8 – 32 V)  |
| midle current consumption                       | max. 20 mA   |
| peak consumption (during communication)         | 1 A  |
| working range of the GSM module                 | E-GSM / GPRS 850/900/1800/1900MHz  |
| max. output power of the transmitter            | 2 W for GSM850/900,<br>1 W for GSM1800/1900  |
| remote control receiver frequency               | 868.1 MHz, GFSK, e.r.p. <25 mW   |
| operating temperature range                     | -20 °C to +85 °C   |
| SIR output                                      | switching the supply voltage, max. load 1.3 A  |
| immobilization circuit                          | 8 A permanently, up to 12 A in the short term  |
| output signals for control of the central locks | max. 200 mA,<br>switching to GND   |
| length of impulses for the central locks        | 0.5 s or 4 s or possibly 60 s (selectable)   |
| comply with regulation                          | ECE No.116   |
| safety  | EN 62368-1   |
| EMC   | ECE No. 116, ČSN ETSI EN 301 489-1, -3, -7   |
| radio spectrum                                  | ETSI EN 301 511, ČSN ETSI EN 300 220-2   |
| can be operated according to                    | ERC/DEC98(20,21), ECC/DEC/(04)06,<br>ERC/DEC/(97)02, ECC/DEC/(06)01, VO-R/10 (ERC/REC 70-03) |



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JABLOTRON ALARMS a.s. hereby declares that the CA-2103 is in a compliance with the relevant Union harmonisation legislation: Directives No: 2014/53/EU, 2014/35/EU, 2014/30/EU, 2011/65/EU and directive No. (EC) č. 661/2009. The original of the conformity assessment can be found at [www.jablotron.com](http://www.jablotron.com) - Section Downloads.



Note: Although this product does not contain any harmful materials we suggest you return the product to the dealer or directly to the producer after use.

Produced and sevised by: JABLOTRON ALARMS a.s., Pod Skalkou 33, Jablonec n.N.