User manual

VAG-Prog 2012

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1. Introduction

Thank you for purchasing VAG-Prog program, professional OBD-II VW/Audi/Skoda/Seat ECU configuration programming tool. In case of any questions or problems please do not hesitate to contact us at support@secons.com or use the form at www.vagprog.com where you can also find further information about the program and updates.

2. Installation

1. Run installation program VAGProg2012Setup.exe

2. Please read license agreement and if you agree, click on "I agree" button. In case you do not agree with the license agreement, please return the product to the place of purchase for a full refund.
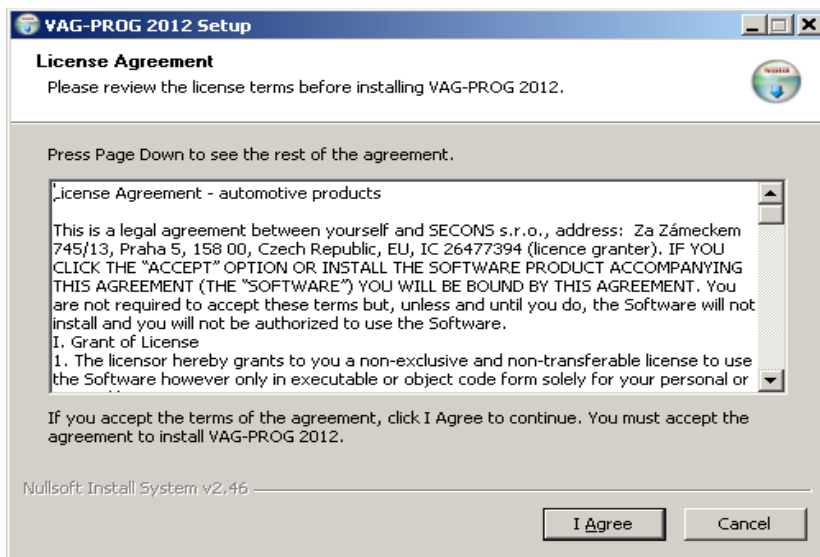
3. In next step please select what parts of the program you want to install:
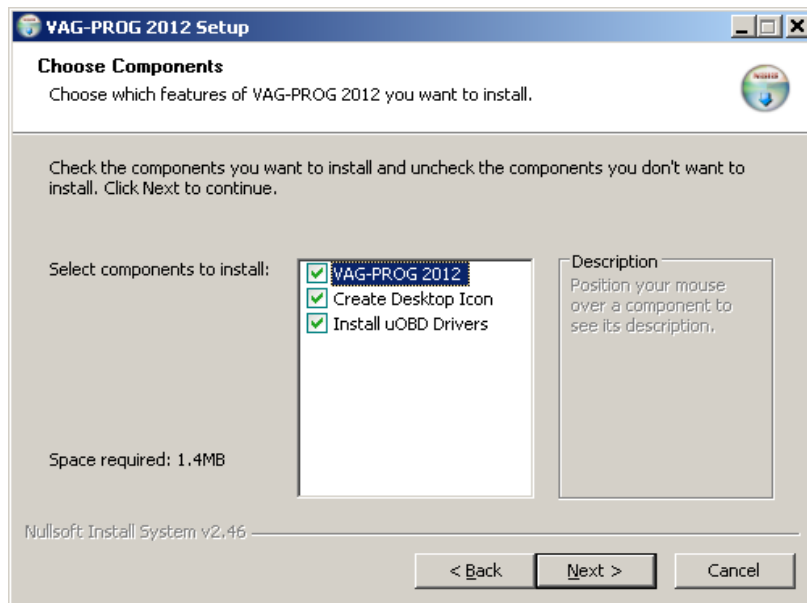
4. Please select target directory for program installation:
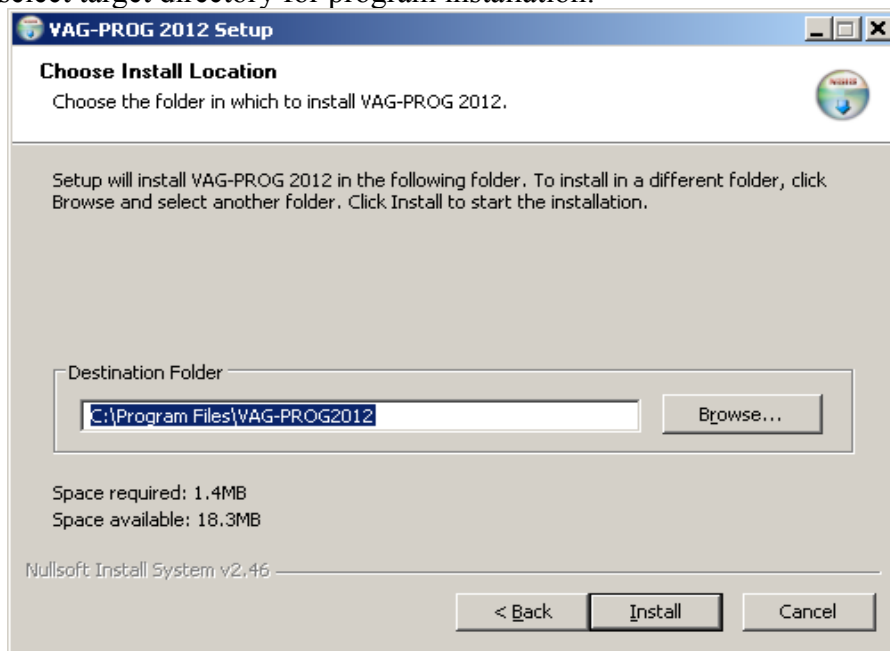
If you see Windows message asking whether you want to install unsigned drivers, please choose "Install this driver software anyway" (Windows Vista / 7) or click on "Continue" (in Windows XP).
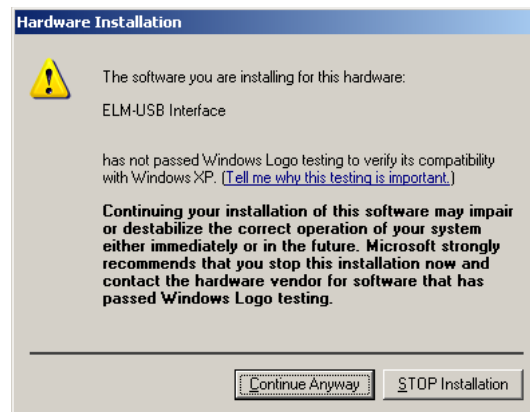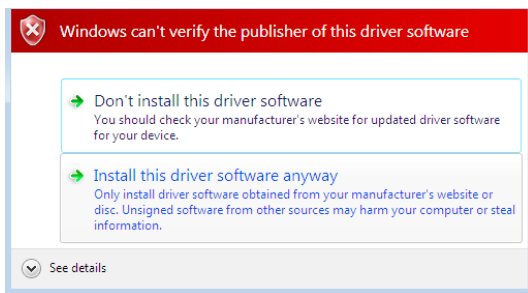
Microsoft® Windows® will install all drivers automatically when MicroOBD interface is plugged in.

The latest VAG-Prog version is available for download at www.vagprog.com.

3. Program usage

1. Install VAG-Prog according to instructions in previous chapter.

2. Connect the MicroOBD interface into your computer.

   LED should start blinking after connecting the MicroOBD to the computer, LED is orange during communication and red after error or during firmware upgrade.

3. Connect the MicroOBD interface into the OBD-II plug in the vehicle.

4. At the top right corner „Communication" select device you want to connect with.Click on *Connect* if you want to connect to device. For disconnection click on *Disconnect*.
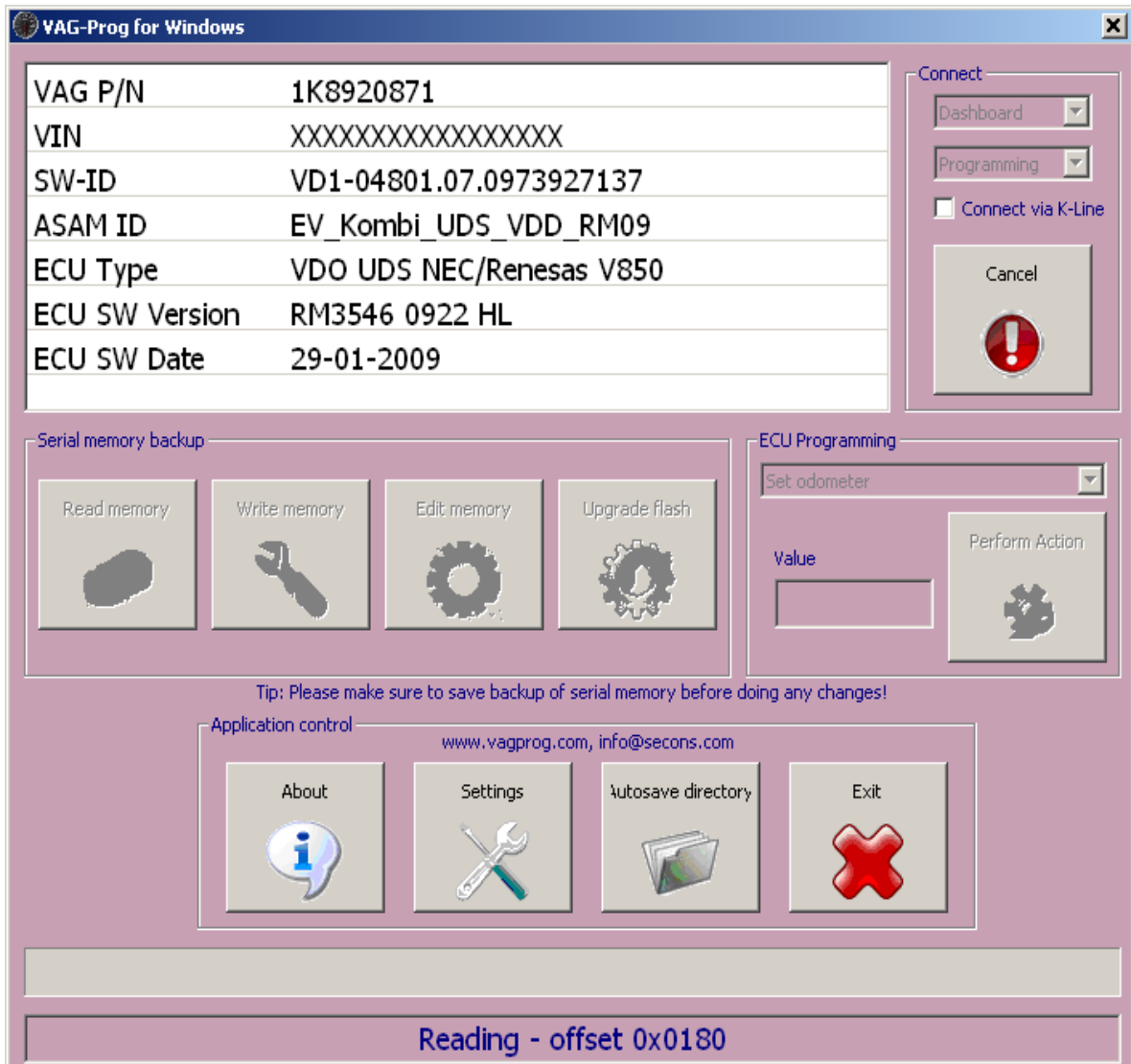
Now it is possible to use programming and diagnostic functions described in this chapter.

⚠️ Before you start using the program , close all running programs, VAG-PROG requires enough time for processor for communication with low latency.

4. VAG-Prog functions

At first it is necessary to choose a type of control unit you wish to connect to and type of diagnostic session. "Programming" session is always used for control unit programming functions, in some cases diagnostic functions are also available in programming session. On the other side diagnostic session can be used for diagnostic operations such as deleting the error memory, login, programming transponders, etc. It is impossible to make programming operations in diagnostic session (not even retrieving vehicle pin code).And also programming session may not be accessible for diagnostic functions (key coding , etc.) .
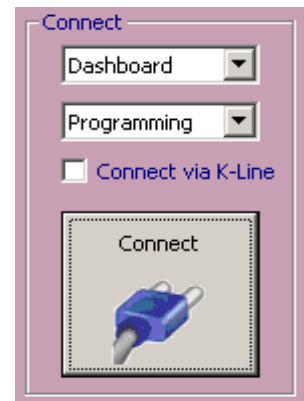
The immobilizer control unit and the dashboards are usually implemented in a single control unit, called KOMBIINSTRUMENT (there is also CAN-BUS gateway very often). It is an instrument panel. Programming is always performed by dashboard control unit, and in some cases there is coding of keys , etc.

The program allows you to select the connection only through the bus ISO9141 (K-Line). This is especially suitable for older control units that support the diagnostic of the K-Line, but programming functions are available only via K-Line.

4.1 Read memory function

This function allows you to read data from the control unit's memory and saves it to disk. This is suitable mainly for storing backup data in case of erroneous reprogramming, or when editing in an external application.

Note: Before any operation with control unit is recommended to save a backup of the original contents of memory to the disk in case of recovery.

4.2 Write memory function

It allows you to write data to the memory of control unit from the file to disc.

Note: Before any operation with control unit is recommended to save a backup of the original contents of memory to the disk in case of recovery.

4.3 Edit memory function

This function is accessible from main menu by clicking on „Edit memory" button. With this feature you can edit data stored in ECU memory.

```
Data editor                                                          ×
0930 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF ................ ▲
0940 10 01 EA CE AA FA 00 91 02 11 06 09 00 20 57 FF ............. W.
0950 FF FF FF FF FF 01 01 07 09 03 00 00 00 00 00 00 ................
0960 00 35 33 33 35 35 31 39 32 30 31 31 31 30 30 36 .533551920111006
0970 30 39 30 35 34 30 35 37 36 33 43 30 34 30 37 00 0905405763C0407.
0980 00 00 00 00 00 41 32 43 35 33 33 35 33 30 34 32 .....A2C53353042
0990 30 30 34 34 31 35 30 56 44 31 2D 30 34 38 11 30 0044150VD1-048.0
09A0 30 30 30 30 30 30 30 37 33 39 32 37 31 33 37 63 000000073927137c
09B0 01 07 09 FF FF FF 11 06 09 00 00 00 00 00 00 00 ................
09C0 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
09D0 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ................
09E0 00 00 00 00 00 00 00 00 41 30 34 30 34 30 41 32 ........A04040A2
09F0 43 35 33 33 35 35 31 39 32 5F 5F 5F 43 30 34 30 C53355192___C040
0A00 37 41 32 43 35 30 30 30 30 30 30 5F 5F 5F 41 7A2C50000000___A
0A10 30 30 30 30 00 00 00 00 00 00 41 41 00 00 00 00 0000......AA....
0A20 00 00 00 00 00 00 00 45 56 5F 4B 6F 6D 62 69 5F .......EV_Kombi_
0A30 55 44 53 5F 56 44 44 5F 52 4D 30 39 00 00 00 00 UDS_VDD_RM09....
0A40 00 00 00 00 00 00 00 00 00 00 00 00 00 FF 00 ................
0A50 55 00 00 00 00 00 00 00 58 30 30 31 00 00 00 00 U........X001...
0A60 00 00 00 00 00 00 00 00 2D 2D 2D 2D 2D 2D 2D 2D ........--------
0A70 2D 2D 2D 2D 2D 2D 2D 2D 2D 2D 2D 2D 00 00 00 00 ------------.... ▼

    Save to ECU                                      Cancel
```
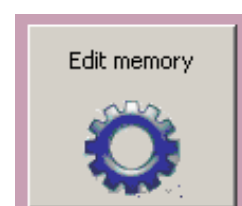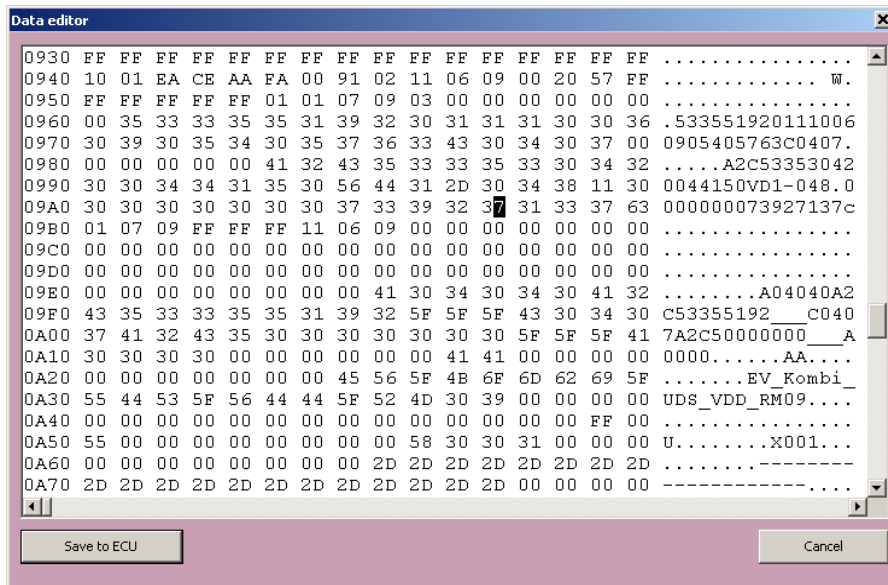
⚠ Note: Before any operation with control unit it is highly recommended to save a backup of the original contents of memory to the disk for possible recovery.

4.4 Diagnostic functions

4.4.1 Login

This function performs ECU security login. Enter PIN code of diagnosed ECU into the field.

4.4.2 Language setting

You can set language of dashboard with graphic display. Into the field, type a value for desired language (1 = German, 2 = English, 3 = French 4 = Italian 5 = Spanish, 6 = Portuguese, ...).

4.4.3 ECU adjustment (channel 50)

The function performs adjustment of engine control unit, immobilizer and possibly fuel pump. Into the field, type a PIN code of adapted control unit(when diagnosing dashboard, type PIN of engine ECU, and vice versa).Before this function the control unit must be authorized using "login" function.

4.4.4 Key coding – KW1281/KWP2000 control units
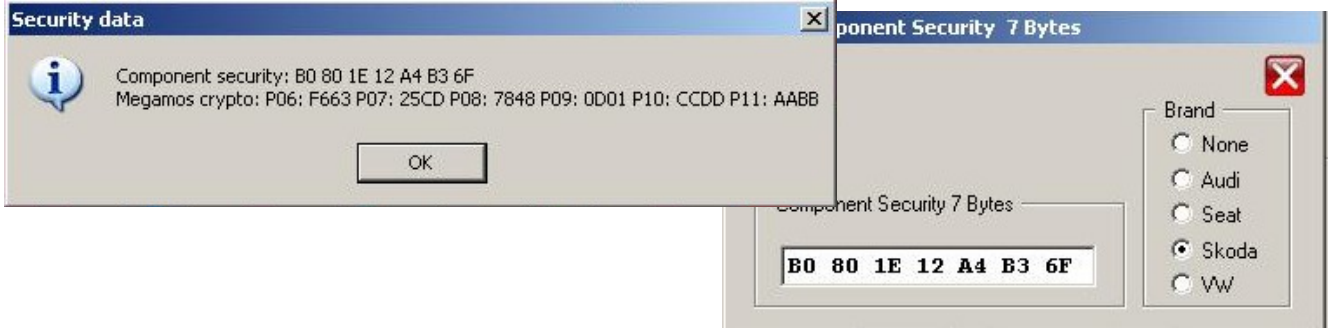
Specify total number of coded keys into the field. The first coded key must be in the ignition. All existing keys will be deleted. Prior to this function, the ECU must be authorized using "Login" function.

Turn the ignition off, insert next key and turn the ignition on. Immobilizer warning lamp should light for about 2 seconds. Repeat this step for each additional key.

4.4.5 Key coding – VWTP 2.0 (2006 +) control units

Vehicle immobilizers since 2006 (in VDO dashboard) require a dealer (pre-programmed) transponder chip. It is possible to read data required for pre-programming using "Read security data of key". It is necessary to program the data into transponder using third-party tool.

Security data
Component security: B0 80 1E 12 A4 B3 6F
Megamos crypto: P06: F663 P07: 25CD P08: 7848 P09: 0D01 P10: CCDD P11: AABB
OK

ponent Security 7 Bytes
Brand
- None
- Audi
- Seat
- Skoda
- VW

Component Security 7 Bytes
B0 80 1E 12 A4 B3 6F

left: retrieved data for Megamos crypto transponder, right: programming in to the chip.

After programming the data security keys it is possible to make programming by VAG-PROG to the control unit. Is necessary to read out the ID of the transponder and add it into the valid keys with relevant function:

ID
Word 2-3 77 87 38 C6 Read

Edit key IDs
+
778738C6
44126356
Cancel - Save
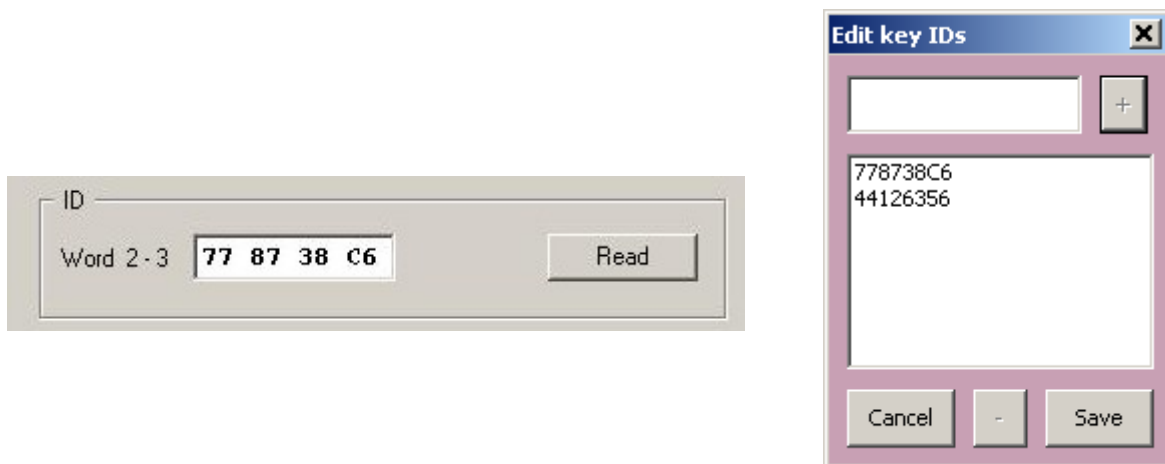
left: chip ID reading, right: VAGProg has programed chip ID to the immobilizer

After the restart of control unit should be the transponder added and immobilizer unlocked.

4.4.6   Key coding– control unit UDS (2009+)

Anti-theft vehicles from 2009 (in the instrument cluster VDO) also require the dealer (pre-programmed) chip transponder, but data are displayed within the format of the "Word" (words) Megamos crypto transponder. The important data for the pre-programing is possible to read by "Read Data security key". This data is required third-party tool programmed into the transponder directly to each "word" of the encryption key:
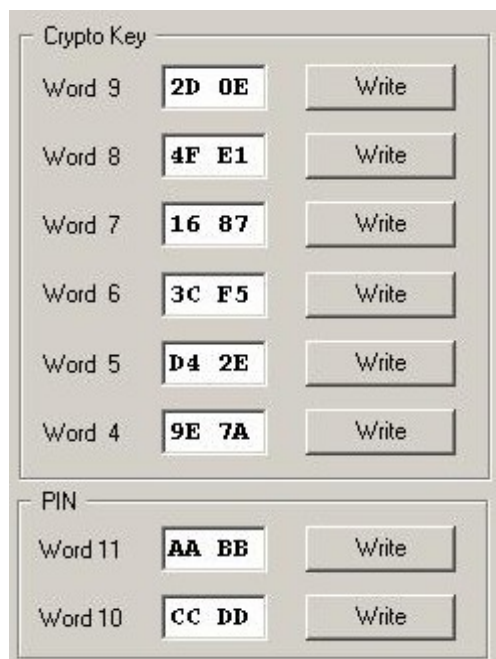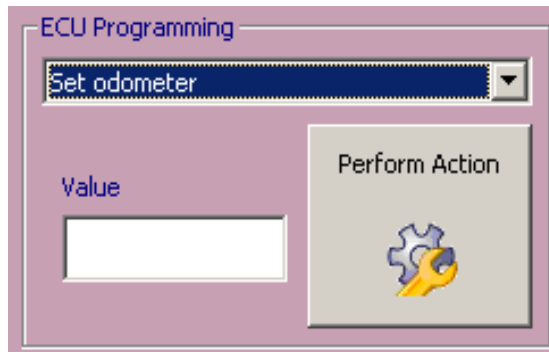

left: readed data for transponder Megamos pro immo 2009+, right: programming to the chip.

Key transponder ID adding to the control unit is the same like in control unit VWTP 2.0 from 2006.

4.5 Function for programming the control unit

It allows you to program control units for predefined functions, for example setting the odometer.

Before setting the odometer, you must first enter a value.

⚠️ Note: Before any operation with control unit is recommended to save a backup of the original contents of memory to the disk in case of recovery.

When reading the security code is displayed waiting dialog that appears after 5 minutes of the requested information
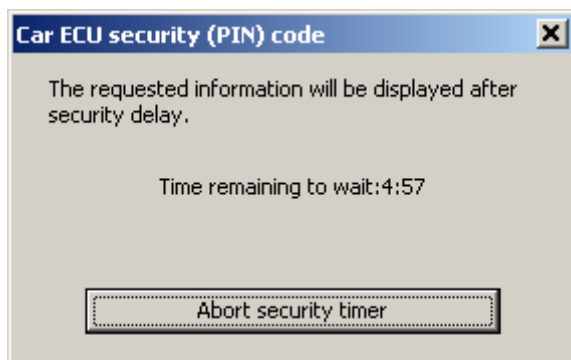
5. Supported control units

A current list of supported control units is available at http://www.vagprog.com/supported_ecus

5.1 Dashboards

5.1.1   Dashboard TRW Golf III

Unable to diagnose memory is necessary to reprogram the EEPROM programmer.

5.1.2   Dashboard UKNSI

It can be diagnosed, transcription EEPROM is not possible after diagnosis

5.1.3   Dashboard VDO KW1281

It can be diagnosed, read pin, serial memory programming and rewrite the odometer.

5.1.4   Dashboard VDO KW1281 VW Polo, Škoda Roomster, Fabia 2007+, Superb 2007

When the panels are connected, the symbol „DEF" appears on the small display.
To delete the temporary "errors" just unplug the battery or restart the computer.

5.1.5   Dashboard VDO Audi

It can diagnose, read pin serial memory programming and rewrite the odometer.

If there is an error with communication, unplug the battery for a while to restart the control unit.

Newer models use encrypted EEPROM. The contents of EEPROM memory readed with this program can not be entered into the universal programmer.

5.1.6   Dashboard MotoMeter a starší Bosch

It can diagnose, read pin serial memory programming and rewrite the odometer.

 Initiating of communication may take up to 45min (detection of secret code).

5.1.7 Dashboard Bosch V850 (Bosch RB4, RB8)

Application: VW Golf IV , VW Passat , VW Touareg , Porsche Cayenne .

It can diagnose, read pin, serial memory programming and rewrite the odometer. The entire serial memory is not stored in reading, the control unit does not read the security field (pin code can be read).

The control unit encrypts part of the serial memory , so you can not use a stored " dump" (content) to program the programmer. Program VAG -Prog saves unencrypted content in the first part (0x000 - 0x360), encrypted for any manual programming to the second part (0x400 - 0x7FF). When writing registers only the first part .

The control unit is in communication switched to the " bootloader " mode, which causes the malfunction indicator lights, displays and indicators. After the end of the communication unit is restarted. If it occurred during communication interruption , it is necessary to disconnect the battery while the vehicle to restart the instrument .

If the communication fails, the control unit will remain in service mode and the vehicle , among other things can not be started . Disconnect the battery of vehicle to restart the controller .

If lights up on the instrument panel light " DEF", it is necessary to rebuild procedure .

5.1.8 Dashboard Jaeger/Magneti-Marelli HC08

It can diagnose and rewrite the odometer.

For the instrument Audi TT (esp. software version 7.62 High-Line) can only be set to "0". Specific desired value can then be programmed using standard diagnostic VAG across the channel number (doplnit)

5.1.9 Dashboard Jaeger/Magneti-Marelli HC11

The control unit is a very rare and is not supported.

5.1.10 Dashboard Magneti-Marelli M73 (CAN-BUS)

Some versions of the instrument are supported, can not read or write serial memories, only to set the odometer.

5.1.11 Dashboard VDO CAN

It can diagnose, read pin serial memory programming and rewrite the odometer. Panels are supported until 09/2006 (not encrypted EEPROM) and since 09/2006 with the exception of a few "mini-dot" version.

Most of these panels, especially since MY 2006 require for successful programming and immobilizer properly configured valid key in the lock. If this condition is not met, the program will fail. In this case, you have to disassemble the control unit, re-program EEPROM memory with virginised data and retry the operation again. It is not possible to exchange EEPROM contents between instrument clusters as the EEPROM is encrypted with unique key stored in microcontroller (Micronas CDC ARM).

If the communication fails, the control unit can remain in service mode and the vehicle, among other things can not be started. Disconnect the battery while the vehicle to restart the control unit.

5.1.12 Dashboard Visteon CAN

It is possible to diagnose, read pin, serial memory programming.

5.1.13 Dashboard VDO UDS „NEC V850" (2009-)

It is possible to diagnose, serial memory programming., read vehicle security data (PIN and component security), rewrite the odometer, program key transponder IDs.

All of these instrument clusters require for successful programming and immobilizer properly configured valid key in the lock. If this condition is not met, the program will fail. In this case, you have to disassemble the control unit, re-program EEPROM memory with virginised data and retry the operation again. It is not possible to exchange EEPROM contents between instrument clusters as the EEPROM is encrypted with unique key stored in microcontroller (Micronas CDC ARM).

5.1.14 Dashboard JCI/JohnsonControls UDS „NEC V850" (2010-)

It is possible to perform serial memory programming.

5.2   *Immobilizér*

The immobilizer control unit is usually part of instrument cluster (KOMBIINSTRUMENT) in most vehicles. Programming functions takpe place in instrument cluster/dashboard control unit, which implements immobilizer functions.

There is an exception, older vehicles equipped with so called "immobox" or vehicles with smart key (kessy).

5.2.1   Siemens Immobox

It is possible to diagnose and read pin with a valid key.

5.2.2   Megamos Audi

It is possible to diagnose, read pin without having a valid key, EEPROM reading and writing.

5.2.3   VW LT

It is possible to diagnose, read pin.

5.3 Engine control units

5.3.1 Diesel Bosch EDC15P+, EDC15VM+

Program promotes reading EEPROM of the ECU, incl. programming and setting the odometer. After the programming is necessary to turn off the ignition for 20 seconds

5.3.2 Diesel Bosch EDC16

Program supports setting the odometer and reading PIN code.

⚠️ In some EDC16 connection is required after the K-Line, along with other CAN. It does not work if the diagnostics CAN-BUS, feature by selecting "Join the K-Line"

☐ Connect via K-Line

5.3.3 Petrol Siemens SIMOS 3xx/7xx

Program promotes reading EEPROM of the ECU, incl. read PIN code etc..

5.4   Airbag control units

5.4.1   Siemens airbags

Supported EEPROM read and write, delete "crash" data (record of impact). After the programming is required for about 20 seconds to turn off the ignition.

VW5 airbags fitted to some cars Škoda Fabia can not be edited via OBD-II connector, but they need a direct connection to the airbag connector. Airbags VW5 require direct memory access connections to K-Line, but in these cases the diagnosis through CAN-BUS, which advanced features are supported.
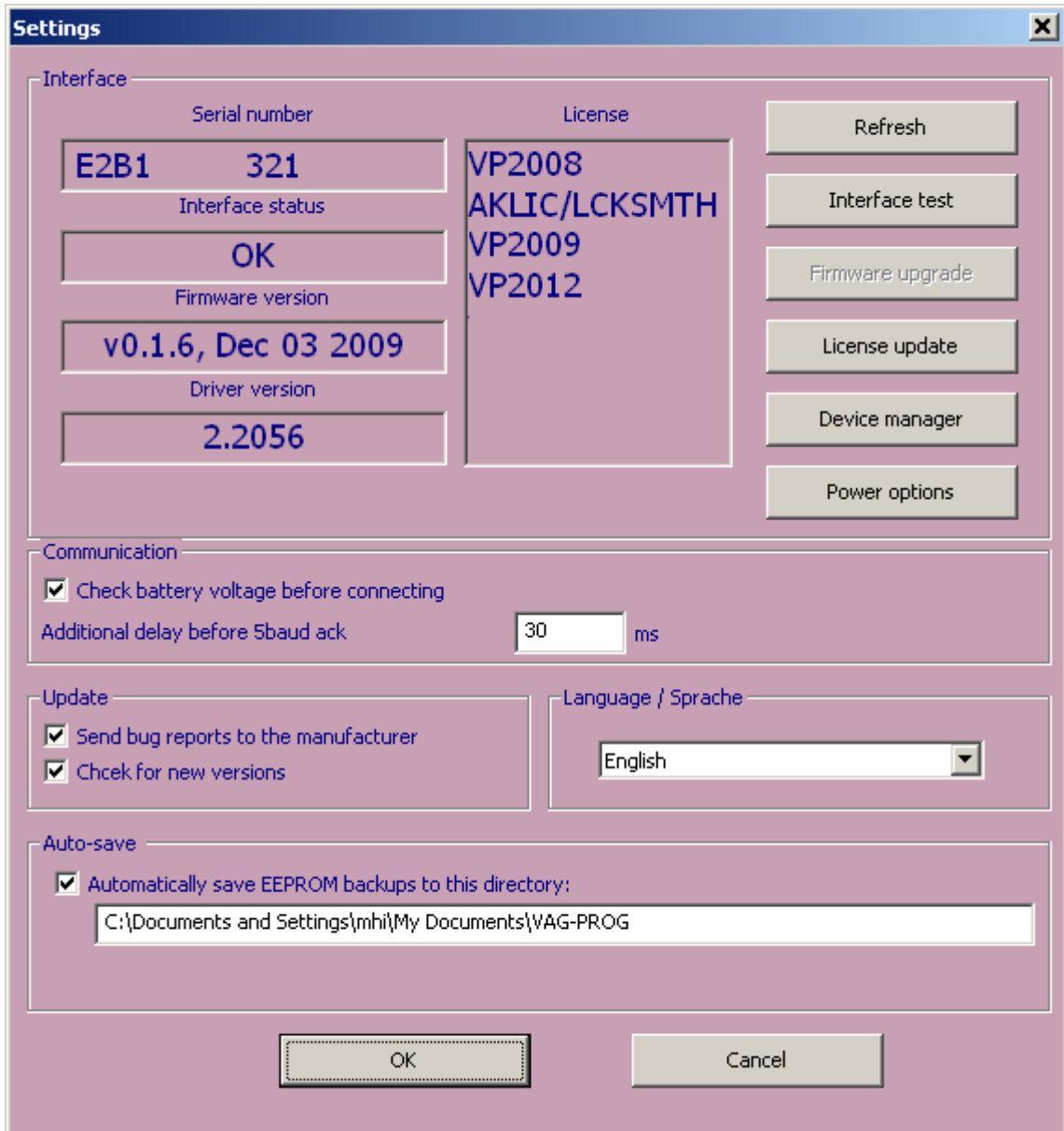
Did you know that airbags Octavia II (Siemens VW8) allow 3x clear crash data using standard diagnostic functions erasing fault memory?

5.4.2   Bosch airbags

Supported read and write EEPROM, clear crash data.

6. Settings

Dialog settings can be selected from the main menu, press "Settings".If the Micro-OBD interface is connected, avalaible licenses and number of the cable are automatically loaded.

6.1   Interface test

Use the "Test uOBD interface" to start the control panel Micro-OBD interface in which the interface can be tested, to see the available licenses and to update the firmware or recording license.

6.2 Activate licence

To update the license there must be connection to the Internet. Press the "Upload License" button to download the current license from the Internet and load it into the cable.

6.3 Upgrade firmware

The "Upgrading the firmware" is active when connected MicroOBD interface contains outdated firmware. We recommend in this case, the press firmware update, which will automatically upload the new version.

⚠ When updating the firmware, never disconnect the Micro-OBD interface from the computer!

6.4 Device manager

The "Device Manager" runs the same name component of Microsoft Windows that you can use to solve problems with drivers, etc.

6.5 Power options
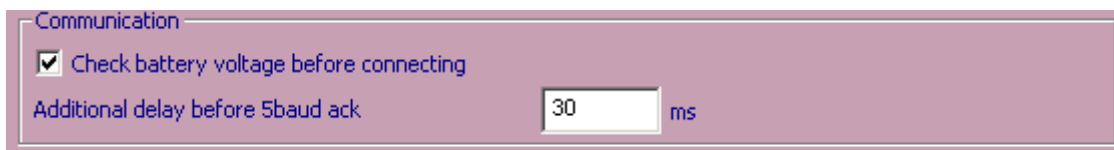
The "Power Options Properties" control panel starts the computer's power settings. You can set battery saving, etc. Some computers use a separate application to the management, in which case you need to change the settings provided by your computer manufacturer. The correct setting is very important for the operation of the program! We recommend that you configure the computer to never fall asleep, disconnect the individual peripherals, and even display.

⚠ VAG-PROG   Program   requires   while   the programming   of controllers   turned   off   power management.
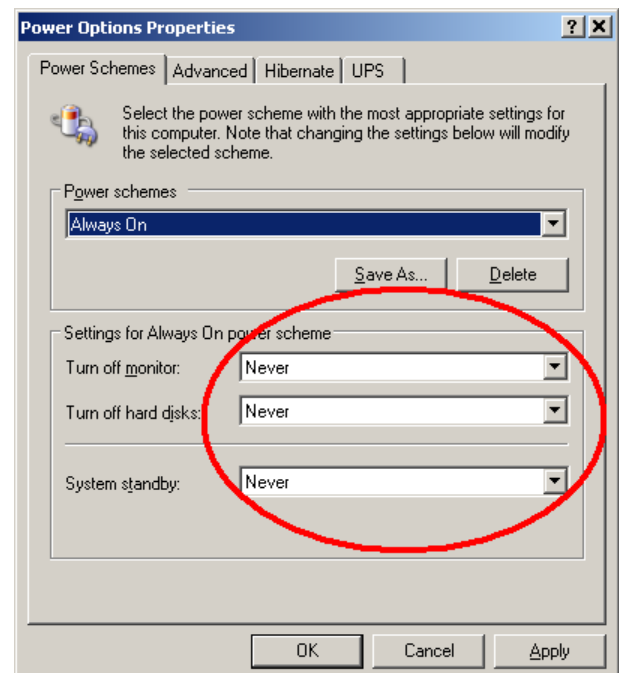
6.6   Communication settings

Check battery voltage before connecting allows you to turn off battery measuring for the first generation of MicroOBD interfaces that do not support this feature.

Additional delay before 5baud ack sets timing parameter for vehicles that do not conform to ISO9141 standard (such as Skoda Fabia). Due to inconsistency of Microsoft Windows API functions for real-time control it is not possible to set this value automatically. Additonally some computers (mainly early netbooks) do not provide sufficient computing power to reliably establish connection. If you have problems with connecting to control units, please modify this value upwards or downwards, until the program does not reliably connects to the control unit.

⚠ The default value is 30 ms, in case of doubt about the correctness of your settings, return to default values.

6.7   Language

Use this option to change the language

6.8   Automatic backups

The program allows you to automatically save a backup memory when you read, you are writing or editing a memory controller. In the settings you can change the directory in which to store all backups. It can be easily viewed using the "Automatic backup" in the main menu of the program.

7. Problems

The issue of direct memory access is very complicated. Program VAG-Prog must be aware of all possible versions of software controllers. Our aim is to cover the widest possible range of versions and types of control units.

However, sometimes it can happen that the program will not work properly and report an error. Oftentimes, the manufacturer of such atypical installed in the vehicle control unit which is normally absent. If the error persists, please contact us and we will do our best to correct errors or extension support.

7.1 Communication scamming

At runtime, always close all other applications, especially web browser, etc. VAG-Prog requires communication with low latency enough processor time when running other programs can lead to disintegration of communication or other problems. Also, make sure that you have the latest version of VAG-Prog.

If you will not help close all applications, it is possible that different processes are still running "in the background", eg monitoring printers, instant messenger, etc. Please uninstall or temporarily disable such programs.

7.2 Unable to establish communication with CU Fabia/Polo/Roomster

If you are unable to communicate with the control unit in Fabia / Roomster / VW Polo, this error is usually caused by applications running in the background or improper or inadequate SIS700 chipset hardware configuration. With the control unit test several times.

7.3 „DEF" lights up on the display

U VDO instrument panels since 2008, it is necessary to reset the control unit selecting from the menu operations.

If this is the panel Bosch RB4 / RB8 (Audi A4/S4 / ...) with encrypted EEPROM, understand this chapter recovery routine Bosch RB4.

7.3.1 Restoring Bosch RB4

This procedure is used to remove defects " DEF" on panels Bosch V850 / RB4 / RB8 with encrypted EEPROM . This error is apparent by reading . " DEF " in the odometer and is caused by a breach of EEPROM memory , especially the encrypted part. This situation may rarely occur for many different reasons.
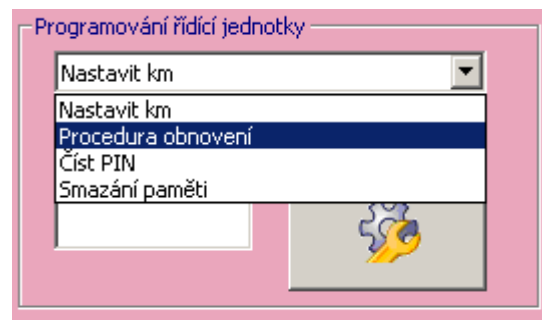
Before performing a complete memory back up . From the menu , select " restore procedure " in the input field, type the address 4F read out from memory , or " 0C " , or otherwise after consultation with the manufacturer. After starting the operation will reboot the controller and the disappearance of the symbol " DEF" , erase the fault memory.

If the restore procedure does not work, it is necessary to erase the EEPROM programmer , or the " Erase Memory" . This function will erase the entire EEPROM , therefore all configuration data incl . immobilizer etc. Before erasing try to save a backup of EEPROM program memory VAG -PROG , or at least the programmer. If you do not have a backup saved by VAG -Prog , you will need to retrieve data from another instrument panel and make a complete coding of the immobilizer , keys, etc. After the erasure of memory is also displayed in the instrument cluster shows " Error". You can then upload to the panel in the standard way new data and perform restoration procedure.

7.4 The instrument cluster is „Dead" after communication

If communication is interrupted and the instrument panel does not respond to the diagnosis, it is necessary to perform the reset. Disconnect the vehicle battery for a while, then clear all faults diagnosis of controllers.

If it is possible to establish a program VAG-Prog diagnostic connection, first select "Restart".

7.5 Reporting bugs

If you find an unsupported controller, send us more information about the error by e-mail to support@secons.com and we will do everything to sort the problem. The successful resolution of need:

Information about the type of vehicle (model, model year, ideally with a VIN code)

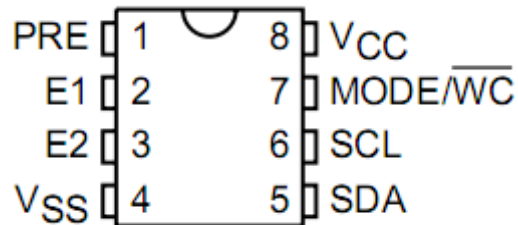Controller Type and order code

Description of the problem

Debug log (attach file)

Debug log easily fits into the application. Confirm the operation that fails and returns an error, then from the main menu, select "About", and "Save debug logging. " The created file attach to e-mail.
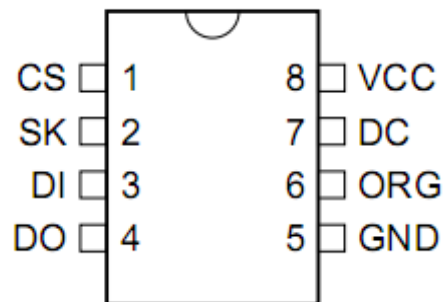
8. EEPROM pinouts

In case you will need to re-program EEPROM manually, most common SO8 memories pinout follows:
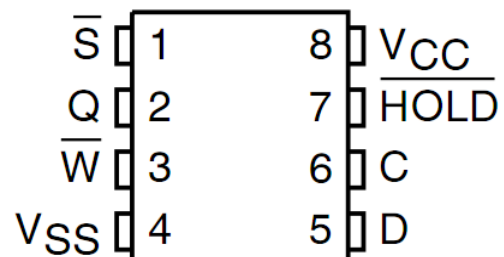
8.1 24Cxxx

```
PRE  [ 1      8 ]  VCC
E1   [ 2      7 ]  MODE/WC
E2   [ 3      6 ]  SCL
VSS  [ 4      5 ]  SDA
```

8.2 93Cxxx

```
CS  [ 1      8 ]  VCC
SK  [ 2      7 ]  DC
DI  [ 3      6 ]  ORG
DO  [ 4      5 ]  GND
```

8.3 95xx

```
S   [ 1      8 ]  VCC
Q   [ 2      7 ]  HOLD
W   [ 3      6 ]  C
VSS [ 4      5 ]  D
```

-blank-

-blank-