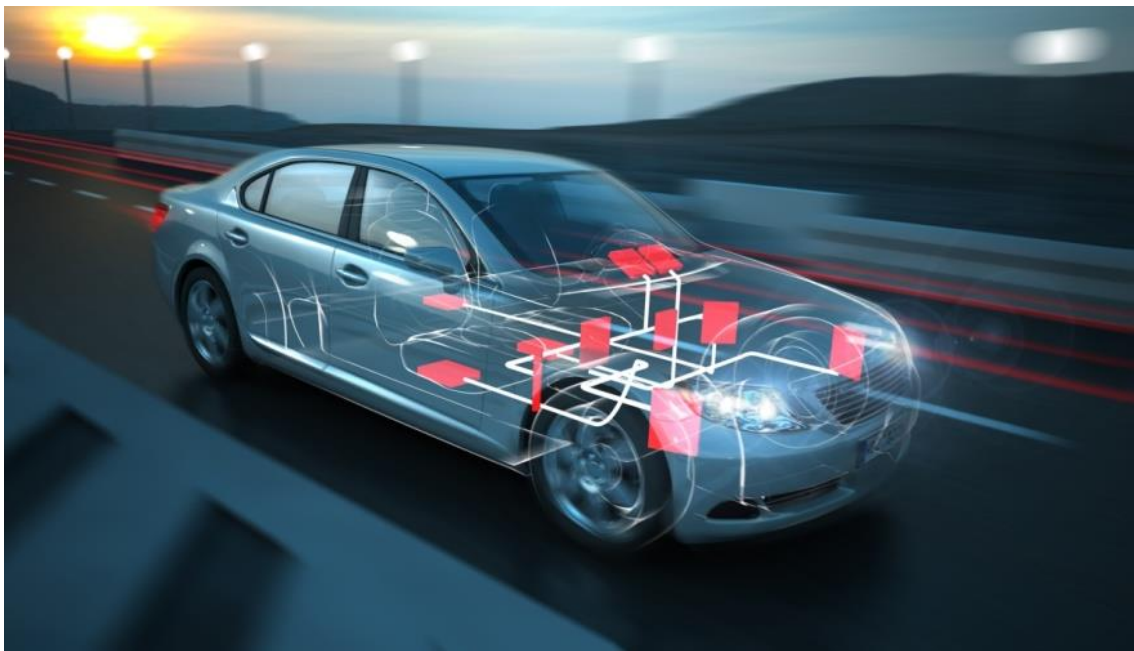


USER MANUAL

AVLDITEST XDS 1000

EXPERIENCED DIAGNOSTIC SOLUTION



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Warning and Safety Notes

This user manual contains important **warning and safety notices** that must be observed by the user.

The product is intended only for the highly specific use described in the user manual. The most important prerequisites and safety measures for the use and operation of the product are also described to ensure faultless operation.

No warranty can be given and no liability is assumed for applications beyond the described use, irrespective of observance of the necessary prerequisites and safety measures.

The product may only be used and operated by personnel who, based on their qualifications, are capable of adhering to the necessary safety measures during use and operation. Only accessories and consumables supplied by AVL DiTEST or approved by AVL DiTEST may be used. The measurement results obtained from the product in question depend not only on correct functioning of the product, but also on a series of general conditions. The results delivered by the product must therefore be evaluated by a specialist (e.g. plausibility check) before further measures are taken on the basis of a delivered measurement.

Settings and maintenance work on open devices while still live may only be performed by trained specialists who are aware of the associated danger.

The product may only be repaired in the factory of origin or by specialists specifically trained to perform such repair.

When using the product, it must be ensured by a specialist that the test object or test system is not brought into any operational state that could result in damage to goods or endangerment of people.

Summarized Safety Notes



DANGER



Danger to life by electric potential on vehicles with high voltage systems

Deadly high voltages are present on the HV energy store (HV battery) and on parts connected to it! Make sure no-one can come into contact with the connections on the HV battery, connecting cables of the HV battery or other parts under high voltage!



WARNING



Danger to life by electric potential on the ignition system

The ignition system carries a deadly high voltage!
Do not touch the ignition system while the motor is running!



WARNING



Danger to life by electric potential on vehicles with Xenon light

A lighting system that uses a xenon light carries a deadly high voltage!
Do not touch the components of the xenon light while the lighting is turned on!



WARNING

Danger from harmful or irritating substances

When performing measurements on the running motor in closed rooms (workshops, test halls, etc.), extract the vehicle exhaust gases and ventilate the rooms thoroughly!



WARNING

Risk of burns from hot parts

Measurements must be performed at normal motor operating temperature or according to the test specification! Do not touch hot parts such as the motor, motor components or any of the entire exhaust system! Use cooling fans if necessary!

**WARNING****Risk of injury from rotating parts**

Only ever perform work in the engine bay while the motor is not running and the ignition is turned off!

Do not touch any rotating parts such as alternator, radiator fan or their drives (e.g. drive belts)!

Make sure measurement cables are laid safely while the motor is running!

**WARNING****Risk of injury from unsecured vehicle**

Engage the handbrake or shift the gearshift to P (on automatics)!

Adequately secure the vehicle against rolling!

**WARNING****Risk of explosions due to pyrotechnical setups and restraint systems**

Testing and assembly work may only be performed by trained personnel!

Never test the igniter with a multimeter!

Only perform system tests with approved testing equipment!

Disconnect the battery when working on the airbag system!

When reconnecting the battery, the ignition must be turned off and there must be no person inside the vehicle.

Always store the airbag unit with the discharge side facing upwards or according to the storage specifications!

Never leave the airbag unit lying around unattended!

Protect the airbag unit against flying sparks, open fire and temperatures above 100°C!

Do not transport the airbag unit in the passenger space!

Do not allow the airbag unit to come into contact with oil, grease or cleaning agents!

An airbag unit that has been dropped from a height greater than 0.5 m must be renewed!

Dispose of untriggered airbag units!

Do not open or repair the airbag unit!

NOTICE

When maintaining the cut-off speed of diesel engines, observe the applicable manufacturer's specifications!

NOTICE

Always turn off the ignition before connecting or disconnecting the OBD connector or the various AVL DiTEST vehicle adapters!

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1 Introduction

1.1 General Description

AVL DiTEST XDS 1000 (XDS: (XDS: eXperiencedDiagnosticSolution) is a modern and future oriented vehicle diagnostic system. It combines a wide coverage of vehicle makes with a professional scope of testing. The fast and easy application reduces identification and diagnostic times.

For vehicle diagnostics with AVL DiTEST XDS 1000 is either a VCI (VCI: Vehicle Communication Interface) or a Scantool, necessary. Refer to the documentation of your VCI/Scantool.

Functions:

- Read/delete error code at vehicle or control unit level
- Central service functions (resets, adjustments, codifications ...) at the vehicle or control unit level through guided procedures
- Actuator test
- Professional evaluation of the measured values using graphic presentation
- Adaptable test documentation

Expandable:

AVL DiTEST XDS 1000 may be combined with additional modules:

- **AVL DiTEST SCOUT**
Guided vehicle diagnostic system.
- **Technical Info System AVL DiTEST XIS**
Comprehensive information system for purposeful error correction.
- **Diagnostic System Software AVL DiTEST DSS**
When starting AVL DiTEST XDS 1000 in AVL DiTEST DSS the vehicle ident data of the selected vehicle is transferred automatically to AVL DiTEST XDS 1000.

1.2 Operation of PC Programs

This manual assumes fundamental knowledge of MS Windows®.

Please turn to your MS Windows® manual for details.

If necessary, contact your PC advisor/system administrator.

1.3 Installation and Update

Please note for the initial start-up the Quick Start Instruction. Included with the AVL DiTEST XDS 1000 CD/DVD.

When buying an AVL DiTEST diagnostic station AVL DiTEST XDS 1000 is already installed and ready for use.

An installation is necessary only:

- when upgrading an AVL DiTEST station with AVL DiTEST XDS 1000
- when using an AVL DiTEST station with its own customers' PCs

Insert the AVL DiTEST XDS 1000CD/DVD into the DVD-drive. The installation starts automatically. Follow the instructions on the screen.

1.4 Operator Interface

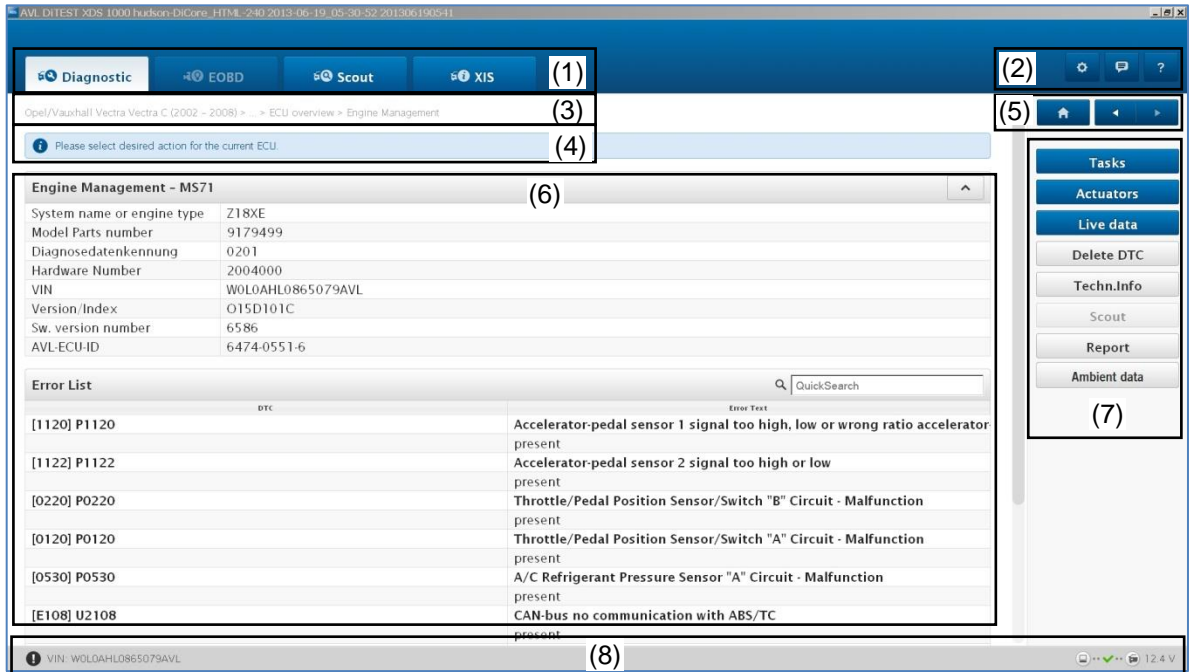



Fig. 1-1

Point	Description
(1)	Main navigation: Buttons "Diagnostic", "EOBD", "Scout" and "XIS".
(2)	Navigation: Buttons "Setup", "Feedback" and "Help".
(3)	Navigation path: Displays the selected vehicle and the chosen function.
(4)	Info section: Instructions in clear text.
(5)	Navigation Section: Buttons "Vehicle Selection", "Back" and "Next".
(6)	Operating range: Presentation of the current function.
(7)	Navigation Section: Buttons of the functions. Important functions are displayed in blue, less important ones in gray.
(8)	VIN (Vehicle Ident Number), connection status: PC ↔ vehicle and battery voltage.

1.5 Help

By clicking on  a window appears with a detailed description of the current screen display.

Information

Use the function "Help"! It is the easiest way to solve a problem.

1.6 Vehicle Diagnostic System AVL DiTEST SCOUT

Information

For this you need the vehicle diagnostic system AVL DiTEST SCOUT.

Clicking on **Scout** starts AVL DiTEST SCOUT.

When starting AVL DiTEST SCOUT in the "Navigation Section", see Fig. 1-1 (7), the vehicle ident data and the selected error code are automatically transferred to AVL DiTEST SCOUT.

To run AVL DiTEST SCOUT please turn to the documents:

- Installation AVL DiTEST SCOUT, ID-No.: AT7636D
- User manual AVL DiTEST SCOUT, ID-No.: AT7641D

1.7 Technical Information System AVL DiTEST XIS

Information


For this you need the technical information system AVL DiTEST XIS!

Clicking on **XIS** starts the technical information system AVL DiTEST XIS (XIS: eXperienced Information Solution).

When starting AVL DiTEST XIS in the "Navigation Section", see Fig. 1-1 (7), the vehicle ident data is automatically transferred to AVL DiTEST XIS.

Refer to the documentation of AVL DiTEST XIS.

1.8 Setup

After the initial start of AVL DiTEST XDS 1000 or the change of the VCI/Scantool carry out various adjustments in the "Setup" mode (button ).

1.8.1 System Information

The installed AVL DiTEST XDS 1000 - version and the current license are displayed.

Change license	Opens the window " <i>product activation</i> ". Here you can enter the activation code.
Show log	Opens a window and displays the logfile.

1.8.2 Scantool

Here you select the communication interface (USB cable or wireless Bluetooth connection) and update the firmware of your VCI/Scantool.

AutoCom	Depending on the selected communication interface the COM-interface in use will be determined.
Boxupdate	Updates the firmware of the VCI/Scantool used.
COM-Settings	Opens a window where you can enter the appropriate COM-interface.

Note


Please note that the firmware update of the VCI/Scantool does not work with Bluetooth. For the firmware update, please connect your VCI/Scantool with the USB-cable to the PC (notebook, AVL DiX DRIVE UM, etc.).

1.8.3 Settings

Here the workshop data can be configured, i.e. your workshop address, logo, and the language of the user interface as well as the memory location of your log file.

Select Logo	A window appears, allowing you to select a logo. Confirm the selection by clicking on Open . The data type has to be ".jpg".
XIS Login	Here you may change your XIS-password.

1.9 Feedback

By clicking on  | **OK** anonymous user information is sent to AVL DiTEST. This helps to improve the product and service performance. For the automated analysis no personal data will be used. You may use the input field to send us your detailed feedback.

1.10 Product Activation

To work with AVL DiTEST XDS 1000 you have to activate it for the use on your PC. After the initial start of AVL DiTEST XDS 1000 the dialogue "*Product Activation*" appears. Follow the detailed instructions on the screen. Please note, that for this step you need a PC with a functioning internet connection.

1.11 In Case of an Error

In case of an error proceed as follows:

- Make sure that AVL DiTEST XDS 1000 and the VCI/Scantool used have been started properly.
- Close AVL DiTEST XDS 1000 and start it once again.
- Disconnect PC ↔ VCI/Scantool ↔ vehicle and reconnect them once again.
- Please note the error messages and the proposed solutions on the screen.

2 Vehicle Diagnostic

2.1 Vehicle Identification

Double click on **AVL XDS 1000**. AVL DiTEST XDS 1000 is started and the dialogue "Vehicle selection" appears on the screen.

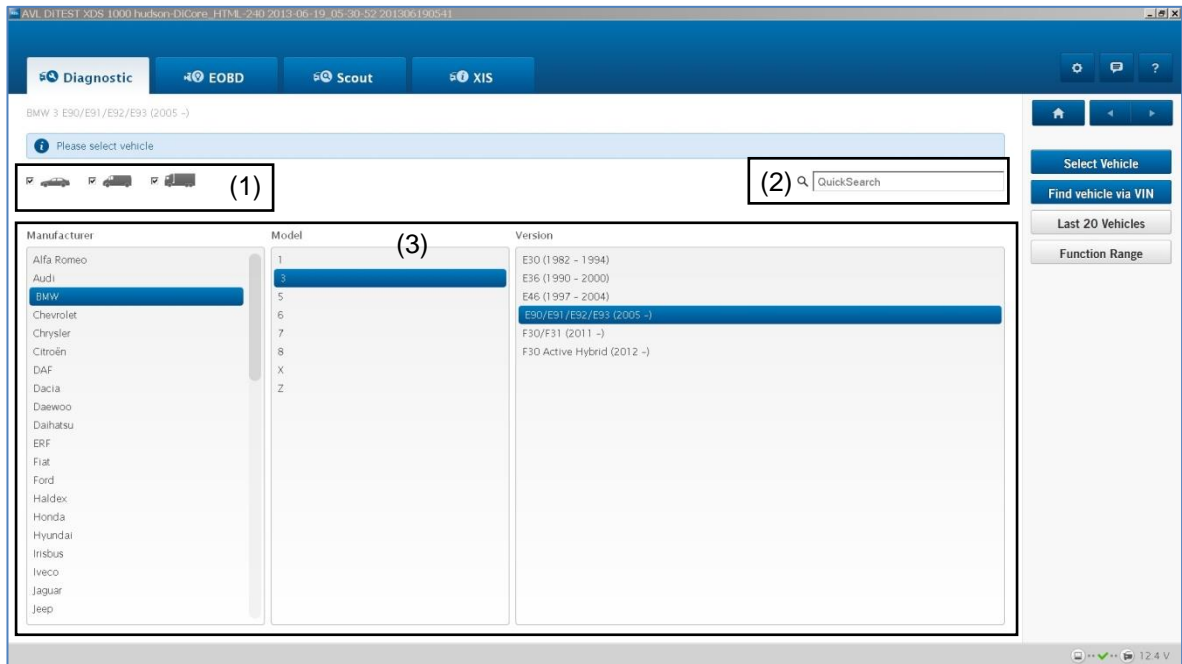


Fig. 2-1

(1) Vehicle Type

Here you can make a pre-selection, what kind of vehicle (passenger car, van and/or truck/trailer) is displayed in section (3).

(2) Quick Search

After typing one or several letters the entries of the section "Brand", "Series" and "Model" are filtered according to the input.

(3) Manufacturer, Model, Version

Select the vehicle you need by clicking on the respective manufacturer, model and version in the table.

- Select Vehicle** Confirms the selection made under (3). The dialogue "Vehicle Information" appears, see Fig. 2-2.
- Find Vehicle via VIN** The identified vehicle is displayed.
- Last 20 Vehicles** Displays a list of the 20 most recently selected vehicles. Click on the required **Vehicle** and **Select Vehicle**.
- Function Range** Displays a list of all possible functions of the selected vehicle.

Information

If AVL DiTEST XDS 1000 is started with the diagnostic system software AVL DiTEST DSS (version 2.2 and higher) the vehicle ident data is transferred to AVL DiTEST XDS 1000.

2.2 Vehicle Information

After clicking on **Select Vehicle**, see Fig. 2-1, the dialogue "Vehicle Information" appears.

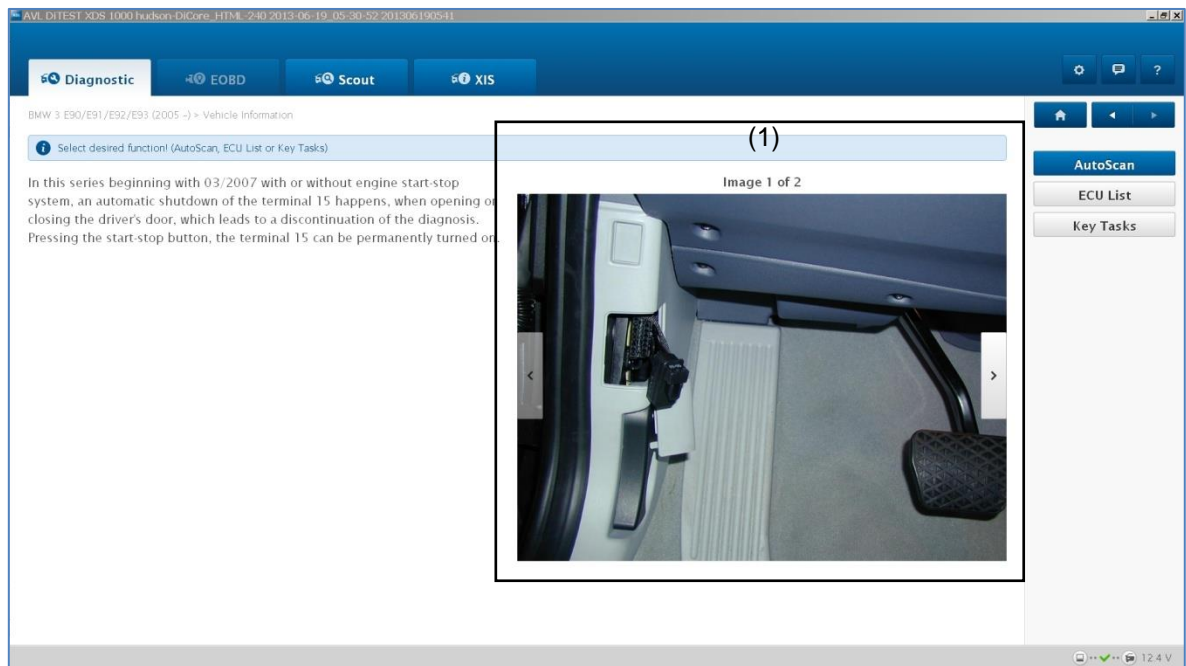


Fig. 2-2

(1) Help Diagrams

Several help diagrams for the selection and the adaptation of the vehicle adapter (fitting position of diagnostic socket, diagnostic cable, etc.) are displayed.

- AutoScan** An automatic check of all vehicle control units is performed, see page 2-3.
- ECU List** A list appears for the manual selection of control units, see page 2-3.
- Key Tasks** Shows a selection of different functions that can be performed without Autoscan and ECU identification. See chapter 3.4.

2.3 Control Unit List

AutoScan:

Displays all control units installed in the vehicle.
 The AVL DiTEST XDS 1000 is specially optimized for the fastest AutoScan.
 Some vehicles may require the AutoScan caused by the control equipment installed in the vehicle but up to several minutes.

ECU List:

Displays all control units that could be installed in this vehicle.

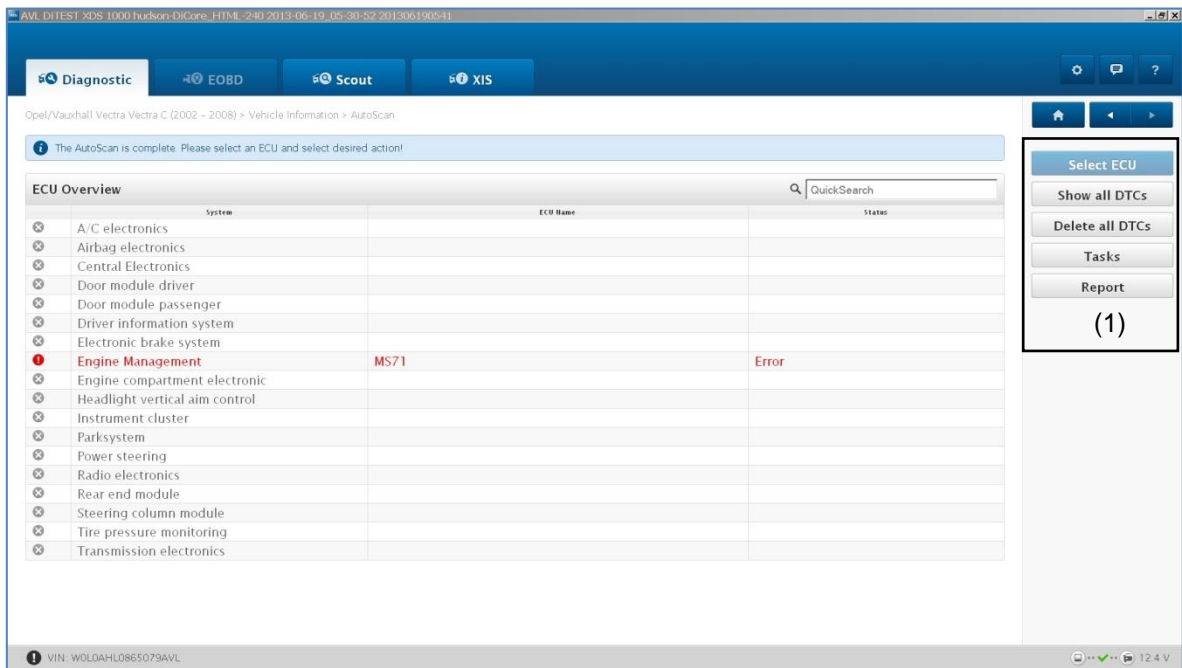


Fig. 2-3



Control unit is okay.



An error is stored in the error memory of the control unit.



Control unit was not found.

In section (1) are displayed the diagnostic operating modes that are possible for this vehicle.
 Click on the respective **Diagnostic Operating Mode**. See the Diagnostic Operating Modes in page 3-1.

Select a system/control unit by clicking on the required **system/control** unit and **Select ECU**.

2.4 Control Unit Identification

The selected control unit is read and the information is displayed in detail under (1). Furthermore if the program found errors, are displayed the error codes and the error texts (2).

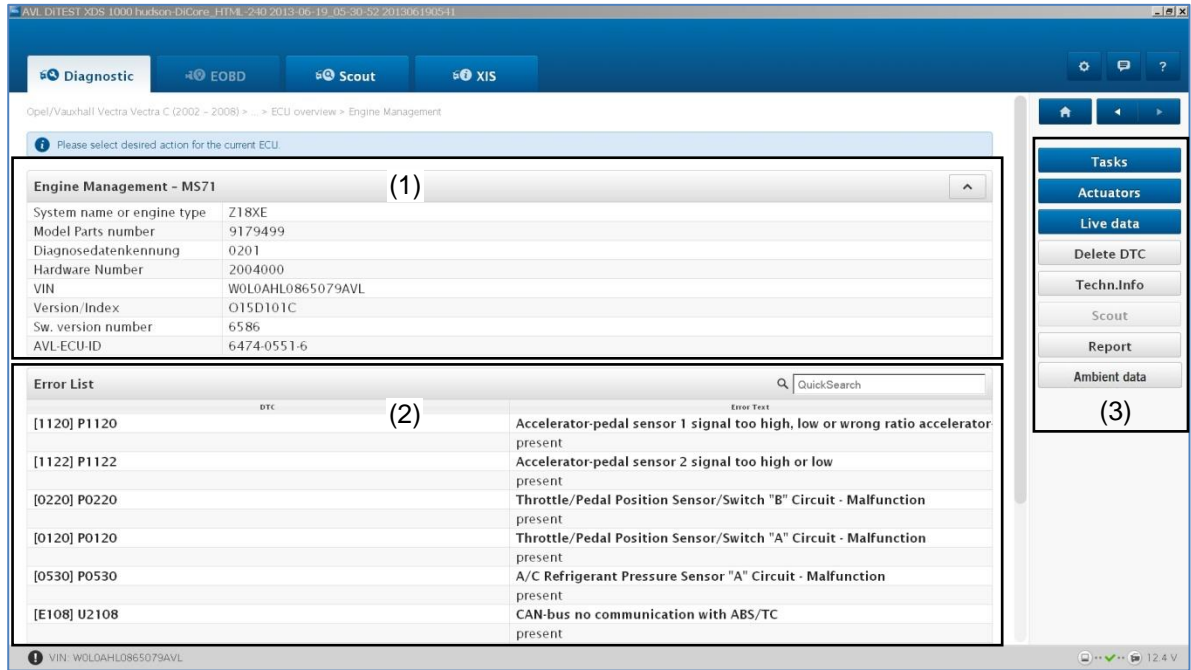


Fig. 2-4



Detail information is displayed.



The display of the detail information is finished.

In section (3) the diagnostic operating modes are displayed that are possible for this control unit/system.

Click on an error code (section (2)) and the selected **Diagnostic Operating Mode**. Diagnostic Operating Modes, see page 3-1.

3 Diagnostic Operating Modes

3.1 Read All Error Codes

Reads the error memory of all control units installed in the vehicle and displays the stored error codes and texts.

3.2 Delete All Error Codes

Deletes the error memories of all control units installed in the vehicle. Should there still exist an error in the vehicle, this error is stored in the error memory after a short time.

Information

For safety-related systems the error codes are not always immediately deleted. In these cases turn off the ignition for several seconds or take a test drive.

For some vehicles the error memory can be deleted only if the engine is not running. It may also be necessary to follow a certain deletion sequence of the control units.

3.3 Delete Error Code

Deletes the error memory of the selected control unit. Should there still exist an error in the control unit, this error is stored in the error memory after a short time.

Information

For safety-related systems the error codes are not always immediately deleted. In these cases turn off the ignition for several seconds or take a test drive.

For some vehicles the error memory can be deleted only if the engine is not running. It may also be necessary to follow a certain deletion sequence of the control units.

3.4 Key Tasks

Runs certain functions with the help of guided instructions. The Key Tasks are related to the selected vehicle. Instructions on the screen guide you through the individual procedure steps. Follow the instructions on the screen.

3.5 Functions

Runs certain functions with the help of guided instructions. The functions are related to the selected control unit. Instructions on the screen guide you through the individual procedure steps. Follow the instructions on the screen.

3.6 Actuators

Checks actuators and circuits of the selected system/control unit. The procedure depends on the selected vehicle. For some vehicles a certain sequence has to be followed, for others the control unit may be selected from a list.

Follow instructions for the actuator test.

Information

With many control units, the ignition has to be turned ON/OFF with each actuator test.

3.7 Measured Values

Reads the current measured values (actual values/parameters) from the selected control unit and displays them. The measured values are grouped together in measured value groups (measured value blocks). Measured values can be displayed graphically.

Group Selection

Here you select which groups of measured values in the section "*Error List*" are displayed.

Error List

Select the desired measured values () .

By entering a search term in the field "*QuickSearch*" you can directly look for a specific measured value.

Details

Actual value, Set-point value, Unit and a Comment of the selected measured values are displayed.

Start recording	The measured values are recorded.
Save record	The recorded values are stored. A browser window appears to select the storage location.
Stop recording	The recording of measured values is terminated.

Graphic

The selected measured values are displayed graphically. A maximum of 4 measured values can be graphically displayed simultaneously.

3.8 Log

AVL DiTEST XDS 1000 continuously records all interactions with the VCI/control unit in form of a log.

In the dialogue "*Control Unit List*", see Fig. 2-3, the log can be printed out by clicking on **Print**.

3.9 Environmental Data

Reads the operating conditions that were present during the storage of an error, and displays them.

4 EOBD

Information

The available EOBD modes depend on the vehicle!

4.1 EOBD Mode 1 Actual Values

Reads the emission-relevant, current engine operation data (actual values) and displays them.

Readiness Code:

Is under EOBD Mode 1 "*Actual Values*" the point "*Number of Error Codes, Malfunction Lamp, Readiness Code*" selected, the readiness code is read and displayed.

The readiness code displays the status of the emission-relevant components.

The engine control unit regularly checks the emission-relevant components and displays the results in the readiness code.

When deleting the EOBD error codes, EOBD Mode 4, or due to any interruption of the control unit power supply, the readiness code is set to not performed.

To generate the readiness code once again, all tests have to be repeated in driving mode according to manufacturer specifications.

4.2 EOBD Mode 2 Freeze Frame

Reads the operating conditions that existed at the time of storing an emission related error and displays them.

4.3 EOBD Mode 3 Read Error Memory

Reads the stored, emission-relevant error codes and displays them.

4.4 EOBD Mode 4 Delete Error Codes

- Deletes the operating conditions under which an emission-related error has been stored (EOBD Mode 2).
- Deletes the emission-relevant error codes (EOBD Mode 3).
- Deletes the lambda sensor values (EOBD Mode 5).
- Sets the readiness code to "*not performed*".
- Deletes the sporadically occurring, emission-relevant error codes (EOBD Mode 7).
- Deletes the display of the driven kilometers with activated malfunction lamp.

In some vehicles, the EOBD Mode 3 "*Read Error Memory*" and EOBD Mode 7 "*Read Error Code Sporadic*" has to be carried out for EOBD Mode 4 "*Delete Error Code Memory*" to function.

4.5 EOBD Mode 5 Lambda Values

Reads the lambda sensor values and displays them.

Information

The measured values of sensor 1 are shown in hexadecimal numbers!

4.6 EOBD Mode 6 Test Values Sporadic

Reads test values of manufacturer-specific components that are not constantly monitored such as catalysts, evaporative systems etc. and displays them.

For the displayed test values to be valid the readiness code should not be reset.

If necessary, generate a new readiness code in driving mode according to manufacturer specifications.

Explanation (Example):

Meaning		
Test	ID TID\$01	Number of the test supported by the control unit
Components	CID\$11	Number of the tested component; refer to factory specifications
Limit	0 ... 22316	Range the test value should be in
Value	4660	Read-out test value
Result	ok	Finding: okay/ not okay

4.7 EOBD Mode 7 Error Codes Sporadic

Reads the sporadic emission-relevant error codes and displays them.

4.8 EOBD Mode 8 Actuator Test

Activates components. "EOBD Mode 8 Actuators" is currently supported only by a few control units. In some vehicles, the tank venting system is prepared for a leakage test.

The leakage test has to be performed by the user.

4.9 EOBD Mode 9 Vehicle Information

Reads the following information and displays it:

- Vehicle information
- Adjustment information
- Adjustment verification number

