EPAS Desktop Software

User Manual

Issue 1.10

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1 Introduction

1.1 What is EPAS Desktop?

PolyLogic's EPAS Desktop Software enables the operating parameters of the DC Electronics EPAS Lite ECU to be viewed in real time. EPAS Desktop also provides facilities for configuring and re-programming the EPAS Lite ECU via the serial port of the host PC.

With PolyLogic's EPAS Desktop Software you can:

- View real-time data for:
    - Battery voltage
    - Current consumption
    - Applied steering torque
    - Steering motor duty
    - Control switch setting
- Read ECU serial number, firmware version and system type
- Configure the EPAS Lite ECU via the serial port of the host PC
- Update the firmware of the EPAS Lite ECU via the serial port of the host PC

1.2 About This Manual

This User Manual is intended to complement the help files built into the EPAS Desktop application. The chapters are presented in an order intended to help new users understand the program as quickly as possible. Be aware, however, that this manual and the program's help file assume that you are comfortable using the Microsoft Windows 98/2000/Me/NT4/XP operating system. If you are new to Windows you may find the Windows Online Help file useful. To access Microsoft Windows Help choose **Help** from the start menu on your Windows desktop.

Error! Reference source not found.

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1.3 Typographical Conventions

Please be aware of the following typographical conventions when reading this manual:

- Menu items that you are instructed to choose appear with an arrow (➡) symbol separating each menu level. For example, if you if you are instructed to choose the Parameters command in the Setup menu it will appear as **Setup ➡ Parameters**.

- Where a button or other control needs to be clicked the name of the button or control will be shown in **bold** text.

1.4 Getting Technical Support

For technical support with EPAS Desktop please contact:

<div align="center">

support@polylogic.co.uk

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In addition, there are pages dedicated to support issues with PolyLogic's products on the PolyLogic web site.

The table below lists the ways to contact PolyLogic:

Contact Method	Address or Number
Website:	www.polylogic.co.uk
Email:	support@polylogic.co.uk
Telephone:	+44 (0) 5601 140733
Fax:	+44 (0) 5601 140733
Mail:	PolyLogic Limited 47 Old Forge Drive West Haddon Northampton NN6 7ET UK

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2   Getting Started

EPAS Desktop is supplied on a CD-ROM which is used to install the program onto the hard disk of your computer.

2.1 System Requirements

Before attempting to install EPAS Desktop, make sure that your computer meets the following minimum system requirements shown in the table below:

Component	Requirement
Processor	Pentium class processor or equivalent
Operating System	Microsoft Windows 98/Me/NT4/2000/XP
Hard Disk Space	10Mb
System Memory	32Mb (64Mb recommended)
Other Drives	CD-ROM
Monitor/Display	Super VGA (800 x 600) or higher resolution with 256 colours
Serial Port	One serial port or USB port with USB-serial adapter
Pointing Device	Microsoft Mouse or compatible pointing device

2.2 Installing EPAS Desktop

Before you can run EPAS Desktop you must install it on the hard disk of your computer.

Follow these steps to install the software:

- Switch on your computer and log on in the normal way.
- Insert the EPAS Desktop CD into the CD drive. The EPAS Desktop Setup Wizard dialog will appear automatically.
- Click **Next**.
- Choose the installation folder for the software and click **Next**.
- Click **Next** again to complete the installation.
- Click **Close** once the installation is complete.
- The installation process places shortcuts to EPAS Desktop on the computer's desktop and Start menu.

NOTE: *If the EPAS Desktop installation process does not start automatically, you can start it manually by using My Computer or Windows Explorer to navigate to the contents of the CD and then double-clicking the file SETUP.EXE.*

2.3 Uninstalling EPAS Desktop

EPAS Desktop can be removed from your computer by selecting the **Add and Remove Programs** option within Windows **Control Panel**. Find EPAS Desktop in the list of installed software, select it, and then click **Remove**.

This will remove the EPAS Desktop software together with its shortcuts and configuration entries.

2.4 Using Online Help

Once EPAS Desktop is running you can view items in the Help menu at any time. To display the online Help file press choose **Help ➡ Help Topics** from the main menu.

2.5 Starting EPAS Desktop

Start EPAS Desktop by either double clicking the shortcut on the computer's desktop or by selecting **Programs ➡ PolyLogic ➡ EPAS Desktop** from the **Start** button on the desktop's toolbar.

2.6 Exiting EPAS Desktop

You can exit EPAS Desktop using any of the following methods:

- Choose **File ➡ Exit** from the main menu, or

- Click the close button ⊠ in the upper right corner of the title bar, or

- Press the key combination Alt + F4.

3 Getting to Know EPAS Desktop

This chapter provides an overview of the EPAS Desktop user interface. It describes the main window, menu, and other important features. To help you better understand the program and become familiar with its features, please review this chapter thoroughly prior to connecting a PC to an EPAS Lite ECU.

3.1 Tour of the EPAS Desktop User Interface

When you start EPAS Desktop the main program window appears as shown below.
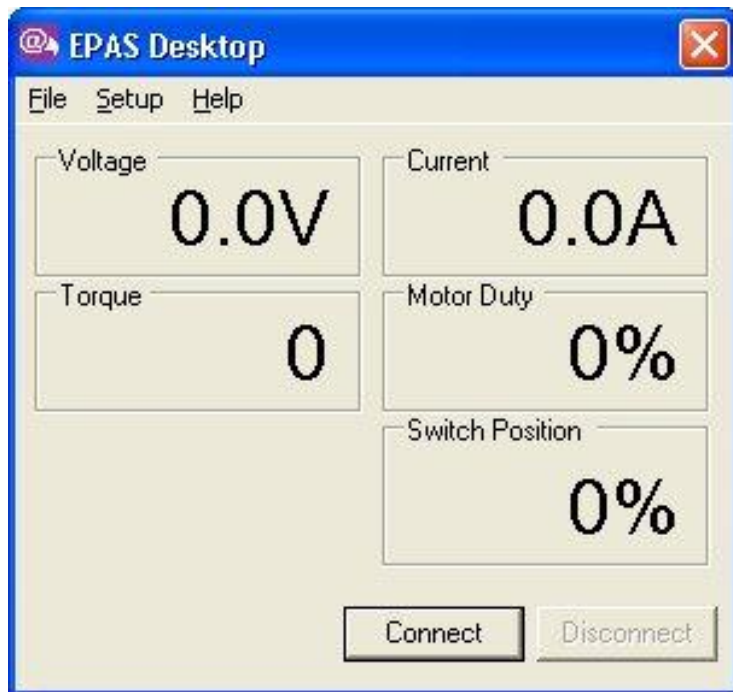

Figure 1 – EPAS Desktop Main Screen (Inactive)

At the top of the main program window a menu provides access to a majority of the program's features.
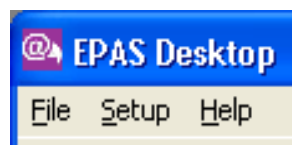
3.2 Main Menu

Figure 2 –EPAS Desktop Main Menu

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The Main Menu (Figure 2), which is directly below the title bar, displays the menu headings. Click a menu heading to open the menu and choose a command.

Use either of the following methods to choose a menu command:

- Open the menu and click the command, or

- Open the menu, use the Up arrow or Down arrow key to highlight a command, and then press <Enter>.

In addition, each menu may be opened by pressing the <Alt> key and then pressing the key associated with the required menu. Section 3.3 lists all the available menu commands.

3.3 Command Reference

The following commands are available:

Menu Command	Keyboard Shortcut	Section
File Menu	**Alt + F**	
Exit	Alt + F, X	2.6
Setup Menu	**Alt + S**	
Serial Port	Alt + S, S	5.1
Firmware	Alt + S, F	5.2
Parameters	Alt + S, P	5.3
Help Menu	**Alt + H**	
Help Topics	Alt + H, H	-
About	Alt + H, A	-

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4   Viewing EPAS Lite ECU Status

This chapter describes how EPAS Desktop allows you to connect to an EPAS Lite ECU and view its status.

4.1 Connecting to EPAS Lite ECU

The status of an active EPAS Lite ECU can be viewed in the following way:

1. Connect the serial port connector on the PC to the serial port connector on the EPAS Lite ECU using a suitable cable.

2. Click the **Connect** button on the main screen.

3. The current status of the EPAS Lite ECU will be displayed in the various panels on the main screen and these will be updated every 250ms.
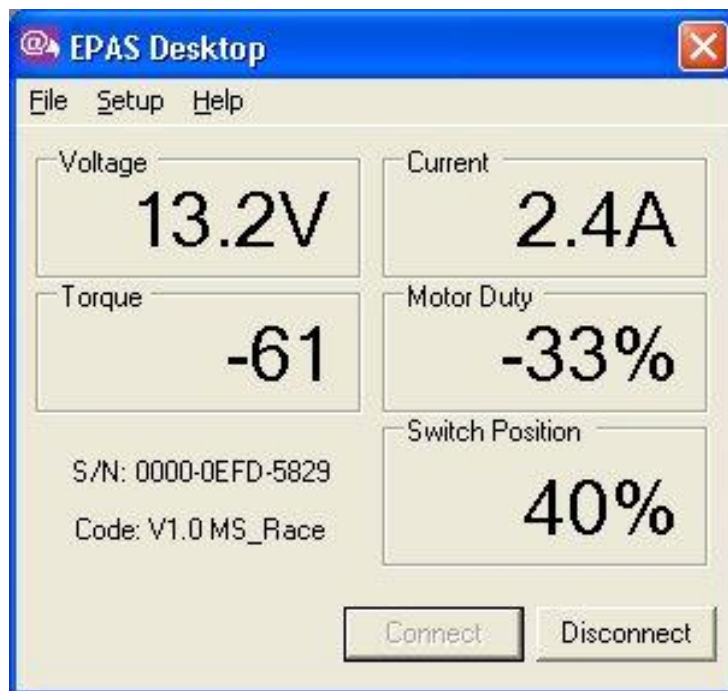

Figure 3 - EPAS Desktop Main Screen (Active)

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4.2 Main Screen Displays

The panels on the main screen display the following information:

Item	Description
Voltage	Displays instantaneous EPAS Lite ECU supply voltage in Volt. Resolution is 0.1Volt and maximum reading is 25.5V.
Current	Displays instantaneous EPAS Lite ECU current consumption in Amp. Resolution is 0.5Amp and maximum reading is 25.5A.
Torque	Displays instantaneous applied steering torque in bits. Resolution is 1bit and maximum reading is 255 bits. This value is positive when the applied steering torque is in the clockwise direction.
Motor Duty	Displays instantaneous motor duty in %. Resolution is 1%. A value of 100% indicates that the motor is operating at full power.
Switch Position	Displays instantaneous steering control position in %. Resolution is 1%. A value of indicates that the control is at its maximum position, i.e. fully clockwise.
S/N	Unique 64-bit serial number of EPAS Lite ECU.
Code	Firmware version and system type.

4.3 Disconnecting from EPAS Lite ECU

To stop viewing the status of an active EPAS Lite ECU click the **Disconnect** button on the main screen.

NOTE: It is important to disconnect in this way, rather than just closing the EPAS Desktop application, as otherwise the connection to the EPAS Lite ECU will remain active and any attempt to reconnect will fail unless the EPAS Lite ECU is reset first.

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5 Configuration

EPAS Desktop provides facilities for the EPAS Lite ECU to be configured via the serial port.

This chapter describes how this configuration is carried out.

NOTE: Configuration changes can only be made whilst EPAS Desktop is not actively communicating with an EPAS Lite ECU. Disconnect any active connection, by clicking the **Disconnect** button on the main screen, before attempting to make changes to the configuration.

5.1 Serial Port

To alter the serial port that EPAS Desktop uses to communicate with the EPAS Lite ECU do the following:

1. Choose **Setup ➡ Serial Port** from the main menu. The Setup Serial Port Dialog (Figure 4) appears.
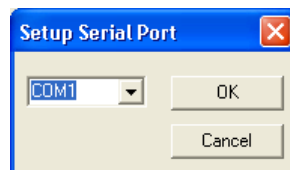
Figure 4 - Setup Serial Port Dialog

2. Select the new serial port from the list.

3. Click **OK** to update the serial port or **Cancel** to leave it unchanged.

5.2 Firmware

The firmware of the EPAS Lite ECU can be re-programmed via the serial port.

The **Setup ➡ Firmware** option from the main menu has been provided to enable this.

IMPORTANT: Do not attempt to upload a hex file to the EPAS Lite ECU without first contacting DC Electronics and obtaining the correct file for your system and application.

5.3 Parameters

The operating parameters of the EPAS Lite ECU can be viewed and altered via the serial port in the following way:

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1. Select the **Setup** ➡ **Parameters** option from the main menu. The Setup Parameters dialog (Figure 5) is displayed.

Figure 5 - Setup Parameters Dialog
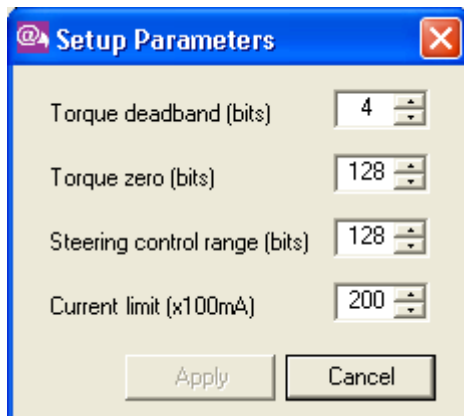
2. The Setup Parameters dialog displays the current values of all the user configurable parameters of the EPAS Lite ECU.
3. Make any changes that are required and click **Apply** or **Cancel** to leave the parameters unchanged.

WARNING: Care must be observed when changing EPAS Lite ECU parameters. Using the wrong values could damage both the EPAS Lite ECU and the steering unit.

6 Troubleshooting

Problem	**I can't connect to the EPAS Lite ECU or read/write its parameters.**
Cause	The EPAS Lite ECU is not powered up.
Action	Turn on the Master switch, and the ignition switch (if necessary).
Cause	The serial lead is not connected.
Action	Connect the EPAS Lite ECU to the serial port of the host computer using the correct cable and try again.
Cause	The lead is not making a good connection.
Action	Ensure both connectors are fully home and that the lead is not damaged in any way.
Cause	The serial port is not configured correctly.
Action	Choose **Setup ➔ Serial Port** from the main menu and select the correct serial port. If you are using a USB to serial adapter use Windows Device Manager to determine the COM port number.
Cause	A previous connection was not disconnected correctly.
Action	Reset EPAS Lite ECU and try again.

7 Error Messages

One of the following error messages will be displayed whilst trying to connect to an EPAS Lite ECU using EPAS Desktop when the EPAS Lite ECU fault light is lit:

Message	Error 100 : Low battery voltage
Meaning	The battery supply voltage has fallen below a preset threshold and the EPAS Lite ECU cannot continue to operate safely.

Message	Error 101 : Torque sensor not connected
Meaning	The torque sensor is not responding either because it is faulty or because it is not connected correctly.

Message	Error 102 : Torque sensor fault
Meaning	The reading from the torque sensor is incorrect either because it is faulty or because it is not connected correctly.

Message	Error 103 : Current sensor fault
Meaning	The reading from the internal current sensor is incorrect.

Message	Error 104 : Motor power fault
Meaning	The power drawn when the motor power relay is energised is higher than expected.

Message	Error 105 : Motor not connected
Meaning	The power steering motor is not drawing enough current indicating that it may not be connected.

Message	Error 106 : Motor is shorted or stalled
Meaning	The power steering motor is drawing too much current indicating that it is either shorted or stalled.

Message	Error 107 : Clutch not connected
Meaning	The motor clutch is not drawing enough current when energised

indicating that it may not be connected.

Message	Error 108 : Clutch is shorted or stalled
Meaning	The motor clutch is drawing too much current when energised indicating that it is either shorted or stalled.

Message	Error 109 : Over current condition detected
Meaning	The internal current limit has been exceeded.