



PG DRIVES TECHNOLOGY

PC PROGRAMMER MOBILITY MANUAL

MANUFACTURING VERSION SK76982/7

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About this manual

The Electronic Manual gives a complete guide to the PC Programmer, its functionality and operations. Throughout the manual icons are used to draw the reader's attention.

The icons used are:



Note - A general point for best practice.



Caution - A point of safety which if ignored could result in damage to the control system or the vehicle.



Warning - A point of safety which if ignored could cause injury to the individual.



PG Drives Technology accept no liability for any losses of any kind if the points are not followed.



CHAPTER I

INTRODUCTION

I Introduction

The Mobility PC Programmer software allows PG Drives Technology powered mobility control systems to be programmed with a PC. In addition to programming, the PC Programmer can be used to perform diagnostic operations on the vehicle's electrical system.

The main advantage of using programmable controllers is that they can be easily tailored to the specific needs and capabilities of a particular vehicle while taking into account safe performance characteristics.

The programmable controller achieves this great flexibility by referring to a set of internal parameters which govern factors such as the vehicle's speed, acceleration and braking. These parameters can be changed over a wide span to suit different vehicles and users, using a simple, hand-held programmer.



It is possible to set up a control system so that it is unsuitable for some users or even some vehicles. For all of the above reasons it is important that you contact PG Drives Technology if you have the slightest doubts or if you need any advice on programming.



Programming and diagnostics should only be conducted by healthcare professionals with in-depth knowledge of PG Drives Technology electronic control systems. Incorrect programming could result in an unsafe setup of a vehicle for a user. PG Drives Technology accept no liability for any losses of any kind if the programming of the control system is altered from the factory preset values.

2 Hardware

The PC Programmer pack comprises of the following items:

- CD ROM
- Programming Cable(s)
- Technical Manual (Hardcopy in Packaging)

2.1 CD ROM

The CD ROM contains installation, executable and information files. There are three version of CD ROM

- Dealer programming
- OEM programming. This version is only available to vehicle manufacturers.
- Manufacturing programming. This version is only available to vehicle manufacturers.

It is recommended that you print a copy of the latest Electronic manual and keep it in a convenient place.

2.2 Programming Cable(s)

The programming cables connect the PC to the vehicle control system via a communications port. There are two cables supplied, one for wheelchair control systems which terminates at one end in a RS232 connector and at the other in a Neutrik plug suitable for connection to Pilot+ and VSI, the other is for scooter control systems which terminates at one end in a RS232 connector and at the other in a Molex 'Mini fit Jnr.' 4 way plug suitable for connection to S-Drive and Egis control systems. As different control systems and PC's are developed, alternative cables may be necessary.

3 Vehicle Control Systems

This issue of PC Programmer software has the capability to program:

- VSI control systems.
- PILOT+ Control Systems.
- S-Drive Scooter Controllers.
- Egis Scooter Controllers.
- VR2 control systems.

See the software update site at www.pgdt.com for the latest release.



CHAPTER 2

USER GUIDE

I Connecting to a Control System

For programming operations you can connect the PC Programmer cable to a control system at any time, regardless of the operating condition of the control system.

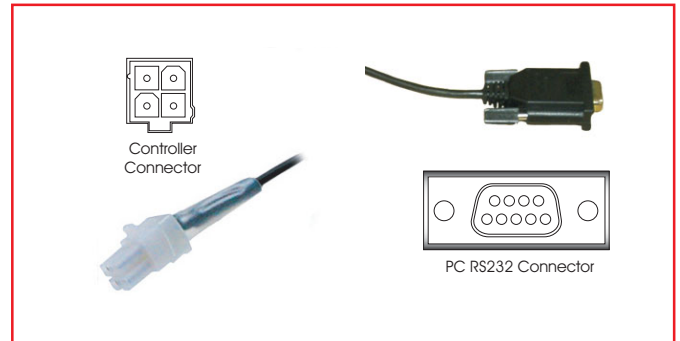
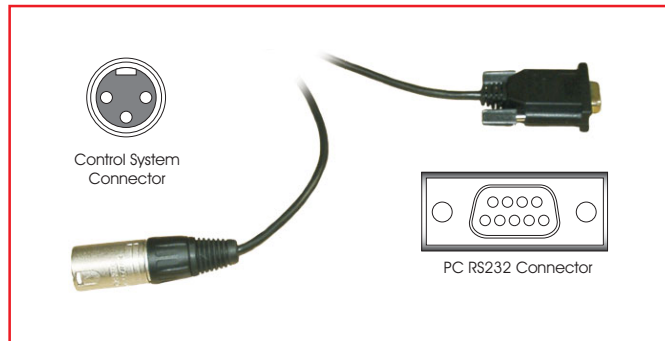


The control unit must be connected and ON before program transfer can be achieved.

If you are using the PC Programmer for diagnostics purposes, then to view the current trip code you must connect the PC Programmer while the control system is in a tripped state, i.e. the battery gauge is flashing rapidly.

To attach the control system to the PC use the programming cable as follows:

- Insert the RS232 plug into the communications port to be used.



- Insert the Neutrik plug (for wheelchairs) or the Molex plug (for scooters) into the control system.
- Switch the control system ON.

As long as the connection correct the PC programmer will register the connection with COMMS ACTIVE in the Status bar.

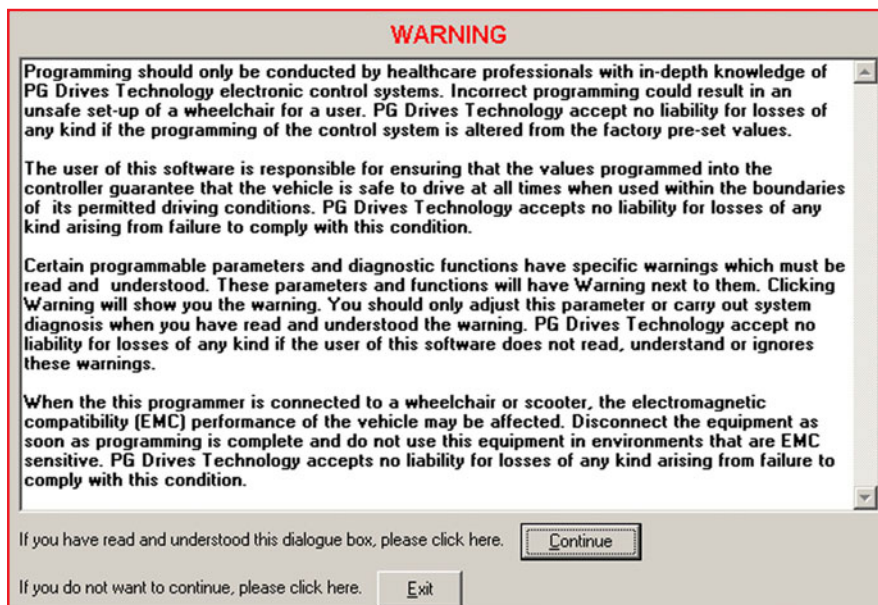


Ensure the PC Programmer cable has been disconnected from the control system before you start driving.

2 Operation Initiation

PC Programmer can be used to edit existing control systems or to perform initial programming acts. Once a program has been loaded into PC Programmer editing tasks can be performed at any time.

Upon opening PC Programmer the following warning window will appear. It is important that this warning is read and understood before programming commences.



Clicking Continue opens the PC Programmer Application Window. If a control system is connected, and ON, then the status bar will state what type the connected system is.



If the Control System is not supported by the version of PC programmer currently installed then the program will alert the user.

To begin using the PC Programmer one of two things must occur:

- A New program must be opened.
- An existing program must be opened.

3 The Application Window

For ease of description the application window will be separated into 6 different sections. These are:

- 3.1 - Program Information Bar
- 3.2 - Drop Down Menus
- 3.3 - Toolbar
- 3.4 - Program Button
- 3.5 - Program Display Area
- 3.6 - Status Bar

3.1 Program Information Bar

3.1.1 Description

The description box contains user defined information about the current program being viewed. When a new program is opened the description will read Default Program until it is adjusted

As soon as the program is adjusted a <Mod> notation will appear after the description.

Original

Adjusted

3.1.2 File Name

The file name box contains user defined name for the current program being viewed. When a new program is opened the name will read Default Program until it is adjusted

As soon as the program is adjusted a <Mod> notation will appear after the name.

Original

Adjusted

3.1.3 Program

Each control system produced by PGDT has a set of Default Values and a set of Working Values. The Default Values are used when a programmer wishes to return to the control system's basic setup if, for example, the vehicle is not reacting as expected to parameter changes.

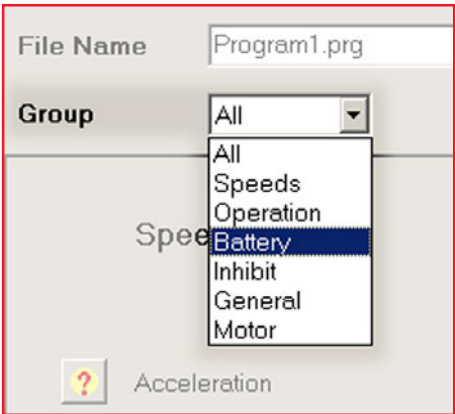
With the Program Presets set to YES the next time the Program button is pressed the Default and Working Values will be overwritten.

With the Program Presets set to NO the next time the Program button is pressed only Working Values will be overwritten.

The Program Button downloads the program parameter information from the SELECTED Group into the control system connected.

3.1.4 Group Menu Selection

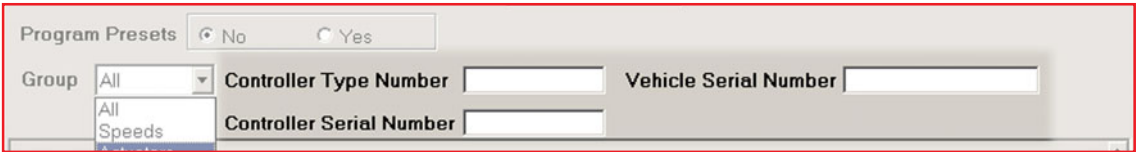
The Group menu selection is a drop down menu. The menu lists the program parameter groups which are available for display and adjustment either individually or as a whole.



When the a file is in a PROTECTED state the only Group available is ALL.

3.1.5 Identification Fields

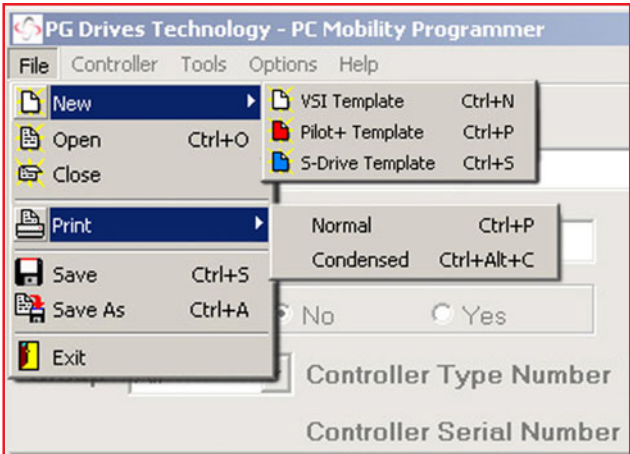
When the Serial Number field in the Options drop down menu has been set to Yes, this is where the information will be displayed. The Vehicle Serial Number is requested when programming of the controller is attempted. The Controller Type Number and the Controller Serial Number are then read from the controller it self. Refer to section 3.2.4.



3.2 Drop Down Menus

3.2.1 File

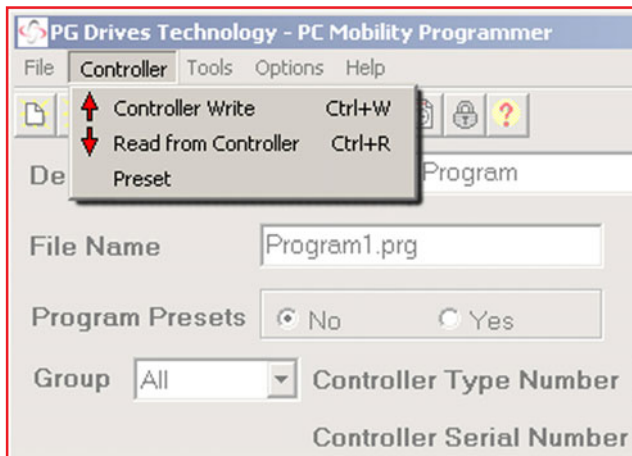
This menu contains standard Windows operational elements.



- When opening a New program the menu will display the current list of templates available. One of the templates must be selected.
- A new function to the standard print menu is the ability to choose the type of print required.
- Normal - When the print option, in this menu, is used only the parameters listed within the Group Menu Selection will be printed.
- Condensed - This option is of note as it allows the operator to print all of the parameters within the file on one side of A4 paper.

3.2.2 Controller

This menu contains specific programming tools.



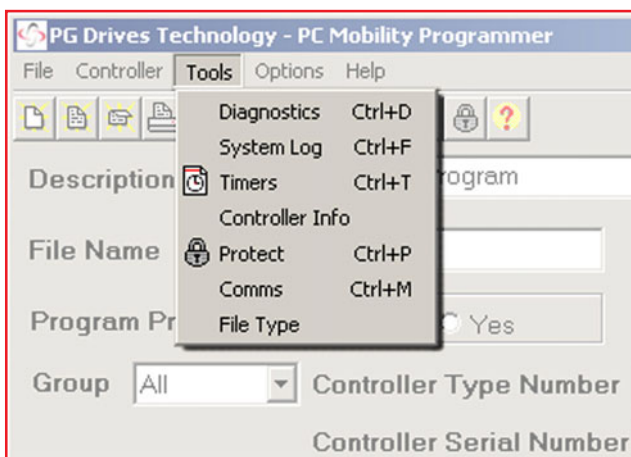
Write Controller - Downloads ALL the program parameter information into the control system connected.

Read Controller - Inputs all the program parameter information from the control system connected.

Preset - Restores all program parameters to the control systems PRESET values.

3.2.3 Tools

This menu contains specific control system information tools.



Diagnostics - If the connected control system is in a tripped state then this option will display the specific trip code and type.

System Log - Displays the diagnostic Log of the connected control system. Within the window is also the option to clear the Log information. For detailed information on the System Log window refer to section 4.

Timers - Displays the connected control system's timer information. This is in the form of an hours run timer, which refers to the time the control system has been driven.

Controller Info - Displays control system specific information such as the Controller Serial Number.

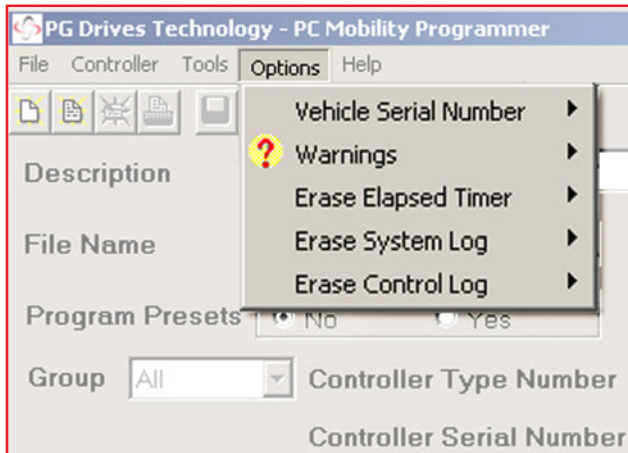
Protect - Allows PC Programmer to be secured using a password. Once the program has been protected users can only Open / Close , Read From / Write To and Program attached control systems. When a file is protected PC Programmer will only allow ALL groups to be viewed.

Comms - Allows the user to select which communication port to attach the control system to the PC.

File Type - Displays the format in which the file was created. ie. Dealer, OEM or Manufacturing Programmer.

3.2.4 Options

This menu contains selective options to enable customization of the workspace

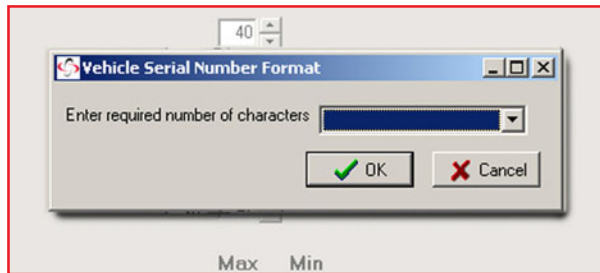


Vehicle Serial Number -

When set to Yes this allows PC Programmer to record the Controller Type Number, the Controller Serial Number and the Vehicle Serial Number of the vehicle onto which the parameters have been loaded.

When Yes is selected the following window will appear asking for the correct quantity of characters for the Vehicle Serial Number.

A number between 4 and 32 or Any can be selected. (Any has a minimum requirement of 1 character)



Once the desired quantity is selected clicking on the OK button will open a window asking for a saving location for the program file.

The next time either the Program or Write to Controller buttons are clicked PC Programmer will request a valid Vehicle Serial Number.



If multiple Vehicle Serial Number lengths are used on your production line then it is suggested that the Any value is selected.

Once a valid number has been entered PC Programmer will read the required controller information and save it all within the file location previously selected. The file name will be the entered Vehicle Serial Number. Example - xxxxxx.prg

If a Vehicle Serial Number is entered that does not equal the quantity of characters selected then the programmer will display a window saying, Enter Correct Vehicle Serial No.

Warnings -

As PC Programmer is issue sensitive, warnings are displayed if all the parameters available on the PC are not located on the controller connected.

These warnings can be switched off by selecting No within the warning dialogue box.



PG Drives Technology accept no liability for any losses of any kind if this function is set to No.

Erase Timer System Log Control & Log -

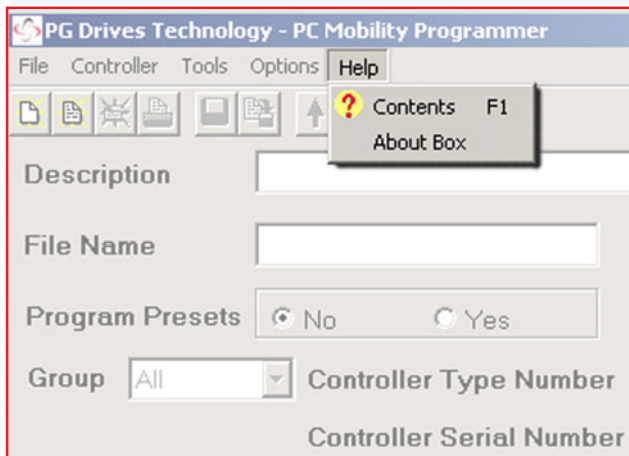
Once the programming of a controller is complete the Elapsed Timer, System Log and Control Log can be automatically erased. Each option can be set individually to Yes or No.

If set to Yes, then after programming all entries will be deleted.

If set to No, then no entries are deleted.

3.2.5 Help

This menu contains specific information about the PC Programmer software.

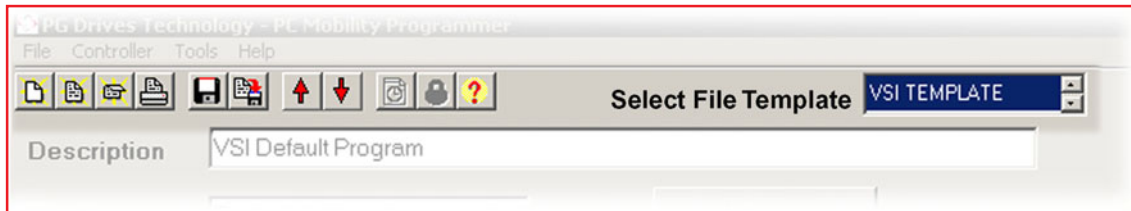


Contents - Displays the available Help topics. This follows a Windows typical control method.

About Box - Displays the PC Programmer software issue information.

3.3 Toolbar

The toolbar icons are shortcuts to the most regularly used functions within the drop down menus.



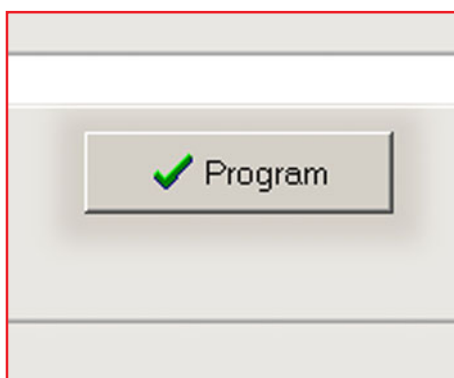
The Select File Template window will only appear when the New File button is clicked.

Viewing the different file types available is achieved using the arrows.

To select the desired file type simply click on the name when it appears.

3.4 Program Button

Downloads the program parameter information from the SELECTED group into the control system connected.



3.5 Program Display Area

All adjustments to the program parameters are made within this window.

Each programmable parameter has its own adjustable entry. All of these parameters have a Help icon located next to them which give a brief description of what the parameter controls.

The screenshot shows a window titled "Speed Settings". It contains several parameters, each with a yellow question mark icon (Help icon) to its left. The parameters are:

- Acceleration: 60
- Deceleration: 47
- Turn Acceleration: 30
- Turn Deceleration: 30

Below these, there are two columns labeled "Max" and "Min".

- Forward Speed (%): Max 100, Min 30
- Reverse Speed (%): Max 50, Min 20



Where a parameter has a Warning icon the warning should be read and understood before adjustment to the parameter is attempted.

To adjust a parameter move the mouse cursor to the parameter reading and click on the arrows to increase or decrease the reading.

Where there is a toggle selection instead of a reading then simply click on the required selection.

The screenshot shows a window titled "Motor Settings". It contains several parameters, each with a yellow question mark icon (Help icon) to its left. The parameters are:

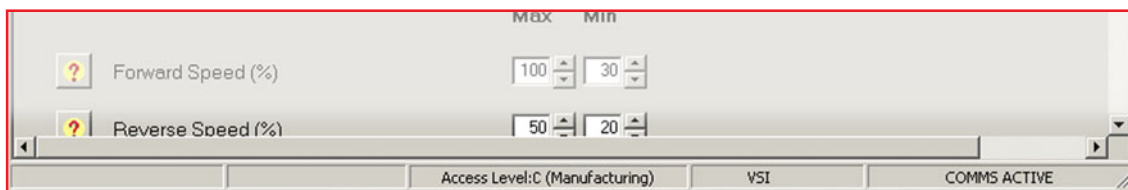
- Lock Function Enabled: Off (selected) / On
- Brake Fault Detect: Off (selected) / On

Below these, there are two parameters with numerical values and a red warning icon to their right:

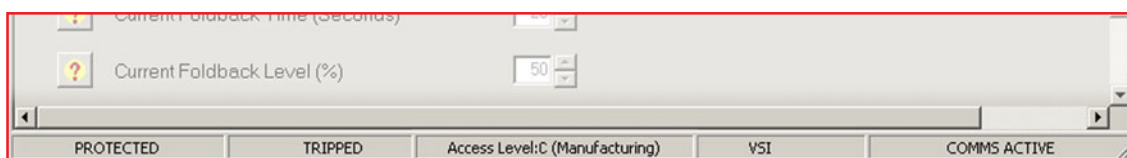
- Current Limit Max. (Amps): 50
- Boost Drive Current (Amps): 50

3.6 Status Bar

Displays program relevant information.



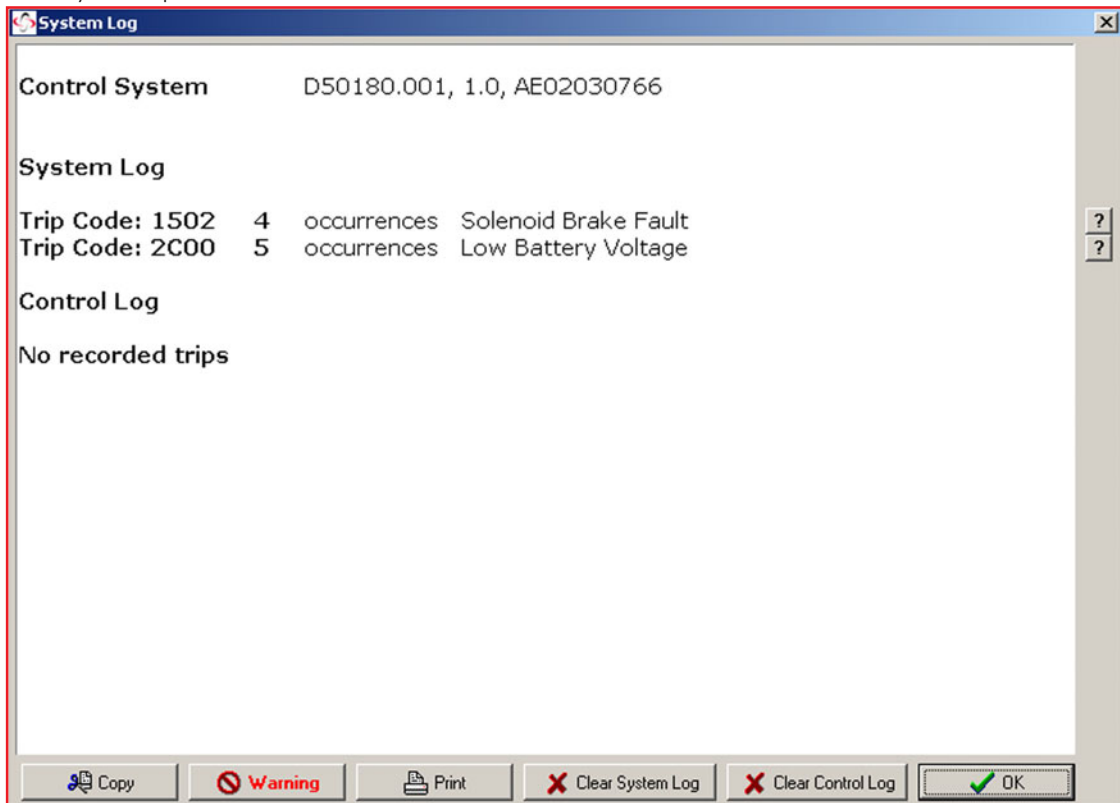
- Protect - When the PC Programmer has been password protected the protection box will show PROTECTED to alert the user.
- Trip Box - When the connected control system has tripped the trip box will display TRIPPED to alert the programmer. To view the trip code select Diagnostics in the Tools drop down menu.
- Access Level - Displays the level of programming access available with the installed version of PC Programmer.
The two types of access are:
Level: A (Dealer)
Level: B (OEM)
Level: C (Manufacturing)
- Control System - Displays the type of control System currently connected to the PC.
- Activity - Displays if a control system is switched ON. If a control system is connected but not ON then the Activity will display COMMS INACTIVE.



The above status bar is indicating that the program is PROTECTED and connected to a TRIPPED VSI control system.

4 System Log Window

Displays Control system trip information.



Control System - Details the type of control system currently connected to the PC, the control system's software issue and serial number.

System Log - The system is tripped out in response to an issue external to the control system. The system log lists the last 8 types of system trip that has occurred since the system was either initialized or last cleared. Each type of trip has an occurrence value and a brief description.



If there is a control trip then the system log records it under a general code which alerts the technician to check the control log.

Control Log - The control log registers a trip in response to an issue within the control system. The system log lists the last 8 types of control trip that has occurred since the system was either initialized or last cleared. Each type of trip has an occurrence value and a brief description.



There are no serviceable parts within any of the PG Drives Technology control systems. Consequently, any defective units must be returned to PG Drives Technology or a PG Drives Technology approved service organization for repair. PG Drives Technology accept no liability for any losses of any kind arising from unauthorized opening, adjustment or modification to any component of a control system.



A description of the each trip code can be found within the Help facility under - Index

The system log window has a row of options along the base. These are:

- Copy** - Allows the user to copy and paste the logs to another file.
- Warning** - It is important that this warning is read and understood before further action is taken to correct any trips.
- Print** - Prints the system log window to the PC's default printer.
- Clear System** - Clears the control system's system log.
- Clear Control** - Clears the control system's control log.
- OK** - Returns the user to the program display area.

5 Upgrades

If you have purchased a copy of the PC Programmer software you are eligible for free upgrades. This means each time a new programmable function or control system is introduced, then you can upgrade you PC Programmer to the latest version.

To qualify for free upgrades, you need to send the following information to ftprequest@pgdt.com:

- Your name
- Your address
- Your organization (the organization which originally purchased the PC Programmer)
- Product type - this is the number, Dxxxx/x, which can be located on the packing box, the CD and the cable labels.
- Product serial number – this is the number, *Hxxxxxx*, which can be located on the packing box, the CD and the cable labels.

Once qualification has been recognized you will then be sent an Email containing an unique username and password.

This username and password allows you to access the latest software via the www.pgdt.com website.

This is achieved as follows:

- Upon entering www.pgdt.com site locate the Service Center and click on the ACCESS FTP SITE icon.
- When prompted enter the unique username and password.
- Open the Mobility Customers folder.
- Open the Software folder.
- Open the PC Programmer folder.
- Open the Relevant Program type folder. i.e. - OEM, Dealer or Manufacturing.



It is recommended that the Issue log is read prior to a download being attempted. The Issue log contains a complete history of the improvements, adjustments and changes created within each issue.

- Select the required version upgrade.



All the upgrades will be kept in separate folders to allow users to install earlier versions of the program if required. Each upgrade overwrites the existing copy on the PC when it is downloaded. Therefore if an old version is downloaded the latest version will need to be downloaded again.



You can check the version of software you have currently installed on your PC by using the About Box in the Help pull-down menu of the PC Programmer.

- Double-click on the .exe file to start the download.
- Follow the instructions within the Zip wizard.



Each upgrade will have a new Electronic Manual specific to that version within the self extracting zip.