

Drive Coach

Publication No. T1692EN Rev 0002 (07/06)



User's Guide

ALSPA Drive Coach

MVS3004-4001

User's Guide

English

Acknowledgements

Microsoft and Windows are registered trademarks of Microsoft Corporation in the USA and other countries.

Publication No. T1692en Issue 2 (07/06)

© 2006 Convertteam UK Ltd

Contents

Acknowledgements	2
Contents	3
Getting Started	6
About ALSPA Drive Coach	6
About This Guide	6
What You Receive	6
System Requirements	7
Introduction	8
General	8
Installation	9
Microsoft Windows™ '95/'98, NT 4.0, 2000 or XP	9
Drive Coach Help Contents	10
Introduction	10
Serial Links	11
Introduction	11
Serial Link Set-up on the P.C.	12
Serial Link Set-up on the Drive	12
Serial Link Statistics	13
Transmissions	13
Receptions	13
CRC errors	14
Hardware Errors	14
Data Errors	14
Timeouts	14
Terminator Errors	14
NAKs	14
Serial Link Problems	14
Are Drive settings correct?	15
Are P.C. serial link settings correct?	15
Show Link Statistics	15
Uploading Parameters from Drive to P.C.	16
Is there a valid template file for this firmware version?	16
Is a valid Drive connected to the P.C.?	16
Upload User Changeable Parameters	16
Upload User Edits Only	16
Uploaded Parameters	17
Opening a Saved Parameter File	17
Downloading Parameters from P.C. to Drive	18
Is there a valid Template file for this Firmware version number?	18

Is there a valid Drive connected (GD3000E/DC3000/MV3000e)?	18
Does firmware version in the download file match the firmware version in the Drive?	18
Does ID number in the download file match ID number in Drive (parameter P99-13)?	19
Does the download file have a valid header?	19
Editing Saved Parameter Files	19
Introduction	19
Using ALSPA Drive Coach to Edit Parameter Files	20
Using Excel to Edit Parameter Files	21
Parameter Line	22
Comment Line	22
Using a Text Editor to Edit Parameter Files	23
Monitoring Parameters in the Drive	24
Introduction	24
Running the Drive Monitor	25
Entering a Parameter to Monitor	25
To Enter a parameter to monitor:	25
Deleting Parameters	26
Saving a Monitor Set-up	27
Loading a Monitor Set-up	27
Changing the Value of a Parameter	27
Exiting the Drive Monitor	28
History Records	29
Introduction	29
Set-up History Record	30
Run History Record	30
Halt (Freeze) History Record	30
Get History Record	31
Displaying History Graphs	31
Using Excel to Analyse History Records	32
Drive information:	32
Trip Information:	32
History Record Set-up Information:	32
History Record Data:	32
Using a Word Processor/Text Editor to Analyse History Records	33
MV3000e/GD3000E History Record Data Format	33
Column 1:	33
Column 2:	34
Column 3:	34
Columns 4 to 12:	34
DC3000 History Record Data Format	34

DC3000 Normal History Record Data Format	35
Column 1:	35
Column 2:	35
Column 3:	35
Columns 4 to 12:	35
DC3000 Commutations History Record Data Format	36
Column 1:	36
Column 2:	36
Column 3:	36
Columns 4 to 12:	36
DC3000 Fast History Record Data Format	36
Column 1:	37
Column 2:	37
Column 3:	37
Columns 4 to 11:	37
Automatic History Log	38
Automatic History Log Overview	39
Automatic History Log Set-up	39
Automatic History Log Status	40
Automatic History Log Disable [not functioning]	41
Disabling the Auto-History:	41
Clear Auto-History Enable Check-box	41
Exiting the Drive Monitor	41
History Log Total Reaches 999	41
Serial Link Failure.	41
If P32.00 is set to 1	42
Trouble Shooting History Logs	42
Serial Link Failure.	42
If P32.00 is set to 1	42
Exiting the Parameter Editor	42
Directory Structure	43
Structure of a Parameter File	44
Changing The Root Directory	45
Using the Package without a Mouse	47
SELECTING WINDOWS	47
MAIN KEYS	47
OPERATION OF THE MONITOR	48

Getting Started

About ALSPA Drive Coach

Welcome to Convertteam's ALSPA Drive Coach for Windows '95/'98 , NT 4.0, 2000 and XP. The enclosed CD-ROM contains all the software for your product, plus all the information you will need to install, configure and maintain your ALSPA Drive Coach software.

About This Guide

Use this guide for information on installing and registering your copy of the ALSPA Drive Coach software and for quick tips on running ALSPA Drive Coach. All of the instructions contained in this guide are also repeated in ALSPA Drive Coach's on-line help (to access click on the HELP menu).

What You Receive

All you need to understand and use ALSPA Drive Coach release 3 is contained in the CD-ROM and in this guide. Please note that in the CD-ROM you have access to 2 files <License> and <Readme> (You also have access to an electronic copy of this document). The first is a copy of your Software License Agreement with Convertteam, the second is latest information for the current software release. Be sure to read them carefully before using the product.

System Requirements

Your system must meet the following minimum requirements to successfully install and run ALSPA Drive Coach

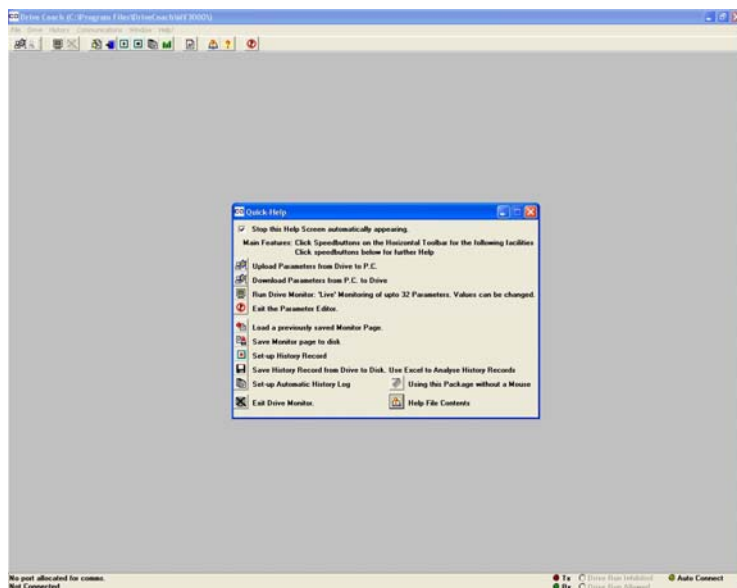
	Minimum	Recommended
For Windows '95/98		
CPU	Pentium/66	Pentium/133
RAM	32MB	64MB
CD-ROM Drive	Yes	Yes
Free disk space	5.00MB	5.00MB
Free Serial Port	Yes	Yes
For Windows 'NT 4.0		
CPU	Pentium/75	Pentium/133
RAM	64MB	96MB
CD-ROM Drive	Yes	Yes
Free disk space	5.00MB	5.00MB
Free Serial Port	Yes	Yes
For Windows 2000		
CPU	Pentium/75	Pentium/133
RAM	64MB	96MB
CD-ROM Drive	Yes	Yes
Free disk space	5.00MB	5.00MB
Free Serial Port	Yes	Yes
For Windows XP		
CPU	Pentium/75	Pentium/133
RAM	64MB	96MB
CD-ROM Drive	Yes	Yes
Free disk space	5.00MB	5.00MB
Free Serial Port	Yes	Yes

Introduction

This software is designed to interact with the MV3000e, GD3000E and DC3000 ranges of A.C. and D.C. Drives. It enables uploading of parameters to a P.C., download of parameters to a Drive, and a Drive Monitoring facility, incorporating Drive History Record set-up and Automatic History Recording.

General

The source of documentation for the product is its help files. For your convenience these files are reproduced in this guide.



Installation

ALSPA Drive Coach Software is designed to run on a pc under Microsoft Windows™ '95,'98, NT 4.0, 2000 or XP operating systems. To install the software insert the CD-ROM into your CD-ROM drive and the software will self install, alternatively:-

Microsoft Windows™ '95/'98, NT 4.0, 2000 or XP

From 'Start' - 'Run' d:\setup where 'd' is your CD-ROM drive

ALSPA Drive Coach is connected from the pc to the RS232 port on the drive (recommended lead - PC Programming Lead GDS1009-4001). The RS232 port is located on the front of each drive and is the connection for the drive's keypad.

Drive Coach Help Contents

Introduction

This software is designed to interact with the, MV3000e, GD3000E and DC3000 of A.C. and D.C. Drives. It enables uploading of parameters to a P.C., download of parameters to a Drive, and a Drive Monitoring facility, incorporating Drive History Record set-up and Automatic History Recording. Click on the headings below for further information.

[Serial Links](#)

[Uploading Parameters From Drive to P.C.](#)

[Opening a Saved Parameter File](#)

[Downloading Parameters From P.C. to Drive](#)

[Editing saved Parameter Files](#)

[Monitoring Parameters in the Drive](#)

[Saving a Monitor Set-up](#)

[Loading a Monitor Set-up](#)

[History Records](#)

[Automatic History Log](#)

[Using Package without a Mouse](#)

[Directory Structure](#)

[Exiting the Parameter Editor](#)

Serial Links

Introduction

ALSPA Drive Coach can communicate with a drive either through the keypad port (RS232 compatible) on the front of the drive or via the drive's RS485 compatible serial port.

When connecting to the keypad port we recommend the use of the PC Programming Lead GDS1009-4001. To communicate via the RS485 serial port a suitable RS232 to RS485 converter is required. The RS485 connections are shown below.

Converter		Drive	MV3000e	GD3000E/ DC3000
TXA	-----	RX-	TB4/4	TB1/4
TXB	-----	RX+	TB4/3	TB1/3
RXA	-----	TX-	TB4/2	TB1/2
RXB	-----	TX+	TB4/1	TB1/1

Before the P.C. is able to communicate with the Drive, the serial link settings on the P.C. need to be compatible with the Drive settings. Click on the following topics for further information on Serial Link set-up and suggestions on how to overcome Serial Link problems.

- [Serial Link Set-up on the P.C.](#)
- [Serial Link Set-up on the Drive](#)
- [Serial Link Statistics](#)
- [Serial Link Problems](#)

Serial Link Set-up on the P.C.

Menu option **Comms - Setup Serial Port** allows set-up of the P.C. Serial link. It has options for Baudrate, Comm Port, and Drive Tributary Address. The default settings are

38400 Baud
Comm Port 1
Drive Tributary Address 0

Auto Configure

There is also a AutoConfigure option. This option will only work through the ALSPA Drive Data Manager (keypad) port on a MV3000e drive, not the GD3000E or DC3000 drives. Choosing the AutoConfigure option configures the PC to communicate using

38400 Baud
Drive Tributary Address 0

The PC then uses a special AutoConfigure sequence that by-passes the drives serial link settings. The drive settings are re-established when the link is removed.

Serial Link Set-up on the Drive

RS232 Serial Port

For MV3000e drives the easiest way to set up the serial link is to check the autoconfigure check box. This overrides the settings in the drive and attempts to communicate at 38400 baud and tributary 0. No editing of the drive parameters is then necessary. However, the AutoConfigure option will only work on the RS232 link of MV3000e drives.

For those situations where the autoconfigure system does not work, the user may explicitly configure the RS232/RS485 link.

To communicate with the P.C. the Drive set-up for the RS232/RS485 serial link must match the set-up of the P.C. The serial link set-up of the Drive is achieved by entering values into the following

Parameters in Drive Menu 32. The factory defaults of the drive and the defaults of the PC package are the same, so no editing of the communication settings are required if neither has been changed.

Note that the value for Parameter P32.12 **MUST** be entered first to allow changes to be made to the other RS232 serial link set-up parameter tables. In the default case, the serial link set-up for the RS232 link on the Drive should be:-

P32.12 = 1	Protocol Gem80 ESP. <u>Set this parameter first.</u>
P32.10 = 38400	Baudrate 38400 baud
P32.11 = 0	Drive tributary address 0

RS485 Serial Port

Note that the P.C. may be connected to the RS485 port on the Drive as long as a lead fitted with a RS232-RS485 converter is used. In the default case, the serial link set-up for the RS485 link on the Drive should be:-

P32.52 = 1	Protocol Gem80 ESP.
P32.50 = 38400	Baudrate 38400 baud
P32.51 = 0	Drive tributary address 0

Note that if uploading/downloading of the history is required, P32.00 should be set to a 1 for optimal data transfer.

Serial Link Statistics

Menu Option [Stats](#) displays the Serial Link Statistics window. The serial link statistics are a series of counters that indicate serial link activity and record any serial link failures. The definition of the statistics are as follows:

Transmissions

increment on every message transmission from P.C. to Drive.

Receptions

increment when P.C. receives a correct response from the Drive.

CRC errors

increment when P.C. receives a garbled message

Hardware Errors

increment when P.C. USART overruns (Hardware Errors = 0 does not mean that the lead is connected up O.K. as this parameter does not increment when there is no connection between the drive and the pc.)

Data Errors

increment when P.C. receives an Invalid message from Drive

Timeouts

increment when P.C. does not receive any reply from Drive.

Terminator Errors

increment when P.C. receives incorrectly terminated reply from Drive

NAKs

incremented when P.C. receives a NAK from the Drive (i.e. Drive did not understand message from P.C.).

See [Serial Link Problems](#) for further information on using Drive Statistics to analyse the serial link.

Serial Link Problems

The serial link to the Drive is designed to be robust and in most cases is transparent to the user. However, should the link to the Drive fail, or if communication can not be established using this software package, then the software will keep trying to re-establish the link with the Drive. In this situation a dialogue box will be displayed stating 'Trying to Establish Communication with Drive' and giving a list of possibilities for failure to establish the link. These are as follows:

Is the Drive Powered up?

Is the serial link lead plugged in?

Are Drive settings correct?

Refer to the Drive and PC serial setting pages of this help file:

[Serial Link Set-up on the Drive](#)

[Serial Link Set-up on the P.C.](#)

The settings for the drive must match those set at the pc.

Note that certain Drive system trips will disable the serial link to the P.C. because they force a return to the Default parameter set of the Drive. The default parameter set-up of the Drive has the RS232 link settings set up for the PC Package (i.e. P32.12=1, P32.10 = 38400, and P32.11 = 0).

Are P.C. serial link settings correct?

See [Comms-Setup Serial Port](#) menu option and check:

Baud rate and Tributary address against Drive settings

Ensure correct Comm Port selected and that the lead is plugged into correct Comm Port. The settings in the pc must match those set in the drive.

This dialogue box also has two buttons as follows:

Show Link Statistics

This button brings up the [Serial Link Statistics](#). The statistics can be a guide to determining whether the problem is no response at all (transmissions and timeouts only will increment if this is the case) or whether the problem is due to corruption of messages on the link by electrical 'noise'. In this case, other link statistics such as CRC errors and Terminator errors will be seen to increment along with transmissions and possibly timeouts. A healthy link is indicated when only the transmissions and receptions statistics are incrementing and all other statistics are frozen.

Uploading Parameters from Drive to P.C.



The [File - Get Data From Drive](#) Menu option, or the Toolbar icon shown, activates the serial link to upload parameters from the Drive to the P.C.

On selecting Upload, the Drive is interrogated to determine its Drive Title (i.e. 'MV3000e'), its firmware version, and its Drive I.D. Number (P99.13). A default filename to save the uploaded parameters to is supplied which is created from the first two characters of the Drive Title and the Drive I.D. number.

Prior to upload a number of checks are made:-

Is there a valid template file for this firmware version?

The template file contains all the information for a given firmware version including comments, default values, attributes etc. If the P.C. can not find a template file or the template file is corrupt, then the user is given the option to upload a template file from the Drive. Uploading a template file takes about 2 minutes via the RS232 serial port, 50 seconds via the RS485 serial port.

Is a valid Drive connected to the P.C.?

If not, upload is aborted.

If the checks are O.K., then the user is given the option to enter a comment to be stored within the parameter file.

There are 2 upload options:

Upload User Changeable Parameters

Uploads all parameters that can be changed by the user. It does not upload read only parameters. This upload is fast, taking about 20 seconds.

Upload User Edits Only

Only uploads those parameters whose values are different to the default values. This upload is slower, taking about 1 minute.

Uploaded Parameters

Uploaded parameters are stored in the Drvfiles directory. See [Directory Structure](#). The parameters are checked for duplicates, out of range and, where appropriate, default out of range, etc...The parameters can be viewed by using the menu tabs and are shown with their values, comments, attributes, and all other relevant information. The paramters can be edited via ALSPA Drive Coach and as the fields in each line are TAB delimited the file can easily be loaded into Excel as a 'Tabbed Delimited Text File' for editing. See [Editing saved Parameter Files](#) for further information.

Note that this option is not active when monitoring Drive Parameters.

Opening a Saved Parameter File

From the [File - Open](#) menu select the parameter file. ALSPA Drive Coach presents the file and checks it against relevant templates. The file can be edited, saved and/or [downloaded to a connected drive](#).

Downloading Parameters from P.C. to Drive



The [File - Send Data To Drive](#) enu, or the Toolbar icon, activates the serial link to download an opened parameter file from the P.C. to the Drive. [Note that this button is not active when monitoring Drive parameters.]

On selecting this option, the Drive is interrogated to determine its Drive Title (i.e. 'MV3000e'), Firmware version number, and Drive I.D. Number (P99.13). A default filename is provided which is created from the Drive ID and the first two characters of the Drive Title.

Prior to download, a number of checks are made:-

Is there a valid Template file for this Firmware version number?

The template file contains all the information for a given firmware version including default values, comments, Attributes etc. If the template file is corrupt, the user is given the option to upload a template file from the Drive. Uploading the Template file takes about 2 minutes. If the P.C. cannot find the template file, the user can change the root directory, see [Changing The Root Directory](#).

Is there a valid Drive connected (GD3000E/DC3000/MV3000e)?

If there is not a valid drive connected to the P.C. then download is aborted.

Does firmware version in the download file match the firmware version in the Drive?

If the firmware version in the Download File does not match the firmware version in the Drive (Parameter P99.03) then the user is given the choice of continuing the download, or aborting the download. Note that continuing with the download is generally not recommended because there may be incompatible changes between firmware versions. Because downloading parameters from a different firmware version is only to be done with extreme care, the user is given two separate chances to abort the download.

Does ID number in the download file match ID number in Drive (parameter P99-13)?

If not, then the user is given the choice of continuing with the download, or aborting the download.

Does the download file have a valid header?

If the Parameter file does not have a valid header, then download is aborted see [Structure of a Parameter File](#) for further information on Parameter file formats).

If all the above conditions are met, then the chosen filename is displayed in the download window with its date, time, and file comment.

The user clicks the [Send To Drive](#) button to proceed with the download.

During the download process, the syntax on the download file is checked and any errors found are displayed in a window, and are written into the error file which has the same name as the download file with a .ERR extension. If any syntax errors are detected then no download takes place.

The Download will take about 20 seconds.

If for any reason any of the parameters can not be written, or have their values clamped, then this information will be displayed in a window and reported in the error file (see above).

Editing Saved Parameter Files

Introduction

Parameter files that have been saved to disk may be edited by a spreadsheet such as Excel, or by a text editor. Note however that these files should **not** be edited by a **wordprocessor**, otherwise they may not be able to be downloaded to the Drive.

See the following for further information:

[Using Drive Coach to Edit Parameter Files](#)

[Structure of a Parameter File](#)
[Using Excel to Edit Parameter Files](#)
[Using a Text Editor to Edit Parameters](#)

Note that within the Drive a small number of parameters are duplicated, i.e. control flags often exist within the control flag menu (menus 33 and 34) and also within other menus. It is important when editing such parameters within uploaded files using Excel or a Text Editor that BOTH sources of the parameter are edited, otherwise during download the value in one parameter source will overwrite the value in the other parameter source. See the relevant Manual for the Drive for information on duplicated parameters.

This restriction does not apply when editing parameters using the Drive Monitor, the Enhanced Keypad, or the Drive push-buttons. There is also no problem if the uploaded parameter set is not modified

Using ALSPA Drive Coach to Edit Parameter Files

ALSPA Drive Coach has an inbuilt editor for editing parameter sets. A parameter set first needs to be opened using the [File-OpenTable](#) Menu option. This will load and check a parameter set. Before a parameter set can be edited a template is required, see [Downloading Parameters from P.C. to Drive](#)

Values that are different from their defaults are highlighted in purple. These parameters have already been user edited.

Values outside their permitted range are highlighted in red. These parameters should be corrected before they are sent to the drive. If uncorrected they will be limited and an entry will be added to the download error log.

Duplicate parameters are highlighted in yellow. These are parameters that appear more than once in the parameter set, perhaps because they logically fit into more than one menu. It is important that both parameters of a duplicate parameter set have the same value. If their values differ, the parameters are highlighted in green. It is not possible to download a parameter set if duplicate

values differ. See the relevant manual for the drive for information on duplicate parameters.

Once a parameter set has been edited, it can then be set to the drive using the [File - Send Data To Drive](#) menu option.

Using Excel to Edit Parameter Files

DUPLICATE PARAMETERS

Note that within the Drive a small number of parameters are duplicated, i.e. control flags often exist within the control flag menu (menus 33 and 34) and also within other menus. It is important when editing such parameters within uploaded files using Excel that BOTH sources of the parameter are edited, otherwise during download the value in one parameter source will overwrite the value in the other parameter source. See the relevant Manual for the Drive for information on duplicated parameters.

This restriction does not apply when editing parameters using the Drive Monitor, the Enhanced Keypad, or the Drive push-buttons. There is also no problem if the uploaded parameter set is not modified

To load a parameter file into Excel:

Run Excel.

Choose FILE - OPEN

Select All Files.

Choose the appropriate parameter file to load into Excel (they have a '.DRV' extension).

When the Text Import Wizard window opens, click on the Finish button.

The parameter file will now be loaded into Excel.

To adjust the Cell widths to cope with the Drive comments, do FORMAT - COLUMN - AUTOFIT SELECTION, or select the whole spreadsheet and 'click' on the rectangle in the top LH corner.

See [Structure of a Parameter File](#) for information on the file structure.

The only allowable changes in the HEADER SECTION are changes to the comment line, and under certain circumstances it may be required to alter the Software version number. However, if the software version number is changed, keep the same format (i.e. if changing from version 4.080 to 4.090, enter 4.090, NOT 4090). Changes to any other parts of the header section will prohibit the file from being downloaded to the Drive.

Existing parameter lines can have any Cell edited.

Lines can be inserted within the PARAMETER section, although inserted lines must become either a:

Parameter Line.

A parameter line must have a valid Parameter number (i.e. P2.10) in the first Cell, and a valid value (i.e. 52.12) in the second Cell. Enter decimal points as on the Keypad. Do not enter units in the second cell.

Comment Line.

A comment line can contain anything, but must start with an open bracket in the first Cell.

Note that parameter lines can be entered in any order, although note that the download time may be affected if the parameters are not in sequential order.

Any number of lines of any form can be inserted between the HEADER and PARAMETER sections.

After alterations to the parameter file are complete, it must be saved as a Text Delimited file. This should be possible by just doing a Save. On Exiting Excel, Excel will ask 'Save Changes to filename.txt?' and will warn that the file is not a Microsoft Excel Workbook. Just click on Yes to save the file in its current text format. **Do not** save as an Excel worksheet or download will not be possible.

Using a Text Editor to Edit Parameter Files

DUPLICATE PARAMETERS

Note that within the Drive a small number of parameters are duplicated, i.e. control flags often exist within the control flag menu (menus 33 and 34) and also within other menus. It is important when editing such parameters within uploaded files using a Text Editor that **BOTH** sources of the parameter are edited, otherwise during download of the modified parameter set to the Drive the value in one parameter source will overwrite the value in the other parameter source. See the relevant Manual for the Drive for information on duplicated parameters.

This restriction does not apply when editing parameters using the Drive Monitor, the Enhanced Keypad, or the Drive push-buttons. There is also no problem if the uploaded parameter file is not modified.

A text editor (**NOT a wordprocessor**) may be used to change parameter values within the parameter file providing that the [Structure of the Parameter File](#) is adhered to i.e. HEADER section is not altered, comment lines in PARAMETER section are started with an open bracket etc. When using a Text Editor, great care must be taken not to INSERT or DELETE any TAB's which are used to delineate fields. See [Using Excel to Edit Parameter Files](#) for further information on editing parameters.

Monitoring Parameters in the Drive

Introduction



It is possible to establish a 'live' link to the Drive which enables upto 32 parameters to be monitored. The Drive Monitor can be operated using the Mouse or just by using the Keyboard, and has several built in facilities. See the following topics for further

information:

[Running the Drive Monitor](#)

[Entering a Parameter to Monitor](#)

[Saving a Monitor Set-up](#)

[Loading a Monitor Set-up](#)

[Changing the value of a Parameter](#)

[Exiting the Drive Monitor](#)

[Using Package without a Mouse](#)

Running the Drive Monitor



The [Drive - On Line Parameters](#) menu, or the Toolbar icon, will establish a 'live' link with the Drive. Up to 32 Drive Parameters can be monitored and Parameter data can be changed. Changing the value of a List parameter will update the list text accordingly.

Note that when running the Drive Monitor the following facilities become available:

[Drive Monitor Facilities](#)
[History Record](#)
[Automatic History Log](#)

and the following facilities are disabled:

[parameter upload](#)
[parameter download](#)

The monitor window will display parameters being monitored and the status of the Drive ('Drive Running, No Trips' etc.).

Entering a Parameter to Monitor

To Enter a parameter to monitor:

Double-Click (or press INSERT, ENTER, RETURN, or SPACEBAR (or simple press 'P') in the first column of the Monitor screen to enter a parameter to monitor. This will bring up the Parameter Entry dialogue box which has a window for entry of the Parameter and OK, Cancel, and Delete Entry buttons. Note that a single parameter may be entered (i.e. P1.12), or a list of consecutive parameters to be monitored may be entered e.g. entering P1.01\10 will monitor P1.01 and the following 9 parameters. Note that it is not necessary to enter the decimal point in the parameter number for example entering P203 will monitor P2.03, and entering P4001 will monitor P40.01. Acceptable formats are:

P2 - get P2.00

P20 - get P20.00
P20.1 - get P20.01

Any one of the following characters may be used to delimit the number of parameters required / \ , ; ;

If a single parameter (i.e. P2.01) is entered for monitoring and the parameter does not exist, then a 'Parameter does not Exist' dialogue will be displayed.

If a block of parameters (i.e. P3.01\3) is entered for monitoring, and one or more of the parameters does not exist, then the next existing parameter(s) will be displayed.

Deleting Parameters

The parameter entry window gives the option to delete entries in the monitor window. Enter \n where n = 1 to 32 and click Delete Entry to delete the required number of lines. For example, entering \4 will delete the present line and the following 3 lines. If the parameter entry window is left blank, and Delete Entry is clicked, the present line will be deleted. Single parameter lines can also be deleted by pressing the DELETE key.

Alternatively the [Load](#) button from the [On Line Parameters](#) screen can be used to load a previously saved monitor screen or the [Clear](#) button can be used to clear the Monitor screen completely. When a useful set of parameters have been constructed, they may be saved using the [Save](#) button. Selecting the [Close](#) button will exit the monitor screen, see [Exiting the Drive Monitor](#), [Saving a Monitor Set-up](#), [Loading a Monitor Set-up](#)

Saving a Monitor Set-up

When a useful set of parameters have been constructed, they may be saved using the [Save](#) button from the [On Line Parameters](#) screen. You will be prompted for a file name to save the parameter monitor set. It is a good idea to organise your monitor files into the supplied sub-directory for the type of drive. ALSPA Drive Coach will present the default path as <root_dir>\<drive_type_connected>monitor. For example, use the directory Alspa_d\MV3000e\MONITOR, where 'Alspa_d' is the place where the program was installed.

See [Loading a Monitor Set-up](#), [Directory Structure](#).

Loading a Monitor Set-up

If a useful set of parameters have been constructed and saved previously, they may be selected again using the [Load](#) button from the [On Line Parameters](#) screen. You will be prompted for a file name to load the parameter monitor set from. You will need to have saved at least one parameter monitor set in the appropriate sub-directory before you can load a parameter set.

See [Saving a Monitor Set-up](#), [Directory Structure](#).

Changing the Value of a Parameter

To change the value of a parameter in the Monitor window :

Double-Click (or Press INSERT, ENTER, RETURN, or SPACEBAR) in the third column of the monitor screen to change the value of a parameter. This will bring up the Data Entry dialogue box which has a window for entry of the new value for the Parameter and OK and Cancel buttons. Enter the new value for the parameter in the parameter data entry window. Note that the value may be entered in decimal (i.e. 54.12) or in Hexadecimal (DB12h). If for any reason the new value can not be written to the Drive (i.e. because the Drive is running and the Parameter is a 'Stop to Edit Parameter') or the value is clamped a dialogue box will be displayed with a 'Value not written or clamped' message.

Exiting the Drive Monitor



The Toolbar icon or the **Close** button at the bottom of the monitor screen will shut down the Drive monitor window. Activating this button will also

disable:

[Drive Monitor](#),

[Drive History](#)

and [Automatic History Log](#)

and **enable**

[parameter upload](#) and

[Open Table](#) options

History Records

Introduction

When running the Drive Monitor, it is possible to run, stop, set-up or upload Drive History Records. See the following topics for further information.

[Set-up History Record](#)

[Run History Record](#)

[Halt History Record](#)

[Save History Record](#)

[Using Excel to Analyse History Records](#)

[Using a Word Processor/Text Editor to Analyse History Records](#)

[MV3000e/GD3000E History Record Data Format](#)

[DC3000 History Record Data Format](#)

[Displaying History Graphs](#)

Set-up History Record



The [History - Set-up History](#) menu option or the Toolbar icon will load the History Record set-up parameters into the monitor window. Note that because this action will overwrite the present contents in the monitor window, a dialogue box gives the user the option to save the present monitor settings or to abort the History Set-up.

Once the History Set-up parameters are loaded, they can be changed as required. Because the History Record set-up parameters are in the Monitor window, they are 'live' and any changes will take immediate effect.

If the monitor window is not open, then activating this option will open the Monitor Window and Load the History Record parameters.

Run History Record



The [History - Run History](#) menu option or the Toolbar icon will start the Drive History record. If the History record is already running, then this command has no effect. If the Drive is tripped, then this Command will be unable to start the History record running.

Note that this option is only available when Monitoring Drive parameters.

Halt (Freeze) History Record



The [History - Halt History](#) menu option or the Toolbar icon will halt the Drive History record. If the History record is already stopped or the Drive is tripped, then this command has no effect.

Once the History Record has been stopped using this button, it can either be re-started by the [History - Run History](#) menu option or alternatively the History Record will automatically restart next time that the Drive goes from Halt to Run (i.e. after a trip, resetting the Drive and running the Drive will restart the History Record).

Note that this button is only active when Monitoring Drive parameters.

Get History Record



The [History - Get History](#) menu or Toolbar icon will upload the Drive History record from the Drive. Before upload, the option is given to choose the filename for the history record (a default name is provided which is created from the Drive I.D. number) and a comment for the History record may be entered. The Drive History record is uploaded in tabbed text format, and includes the Drive type, I.D. number, software version number, comment, date and time of upload, present Drive trips, the Drive trip History (last 10 trips), the Drive History Record set-up, and the history record data.

The History Record can now be viewed. See [Displaying History Records](#).

Alternatively the History Record is stored in the chosen file. The fields in each line are TAB delimited so that the file can easily be loaded into EXCEL as a 'Tabbed Delimited TextFile'. EXCEL can then be used to analyse the History record or draw graphs of the History record parameters. See [Using Excel to Analyse History Records](#) or [Using a WordProcessor/TextEditor to Analyse History Records](#) for further information on History Record analysis.

Note that this button is only active when the Monitoring Window is open.

NOTE

Note that if P32.00 is set to 1, then the History Upload will be faster than when P32.00 is set to 0.

Displaying History Graphs

ALSPA Drive Coach has the ability to display History graphs. By selecting the [History-View History Graphs](#) menu an existing history file may be displayed in graphical form. It is then possible to view each history trace separately, or all history traces together on a single graph.

The graph may be manipulated in various ways, it can be scaled and rotated to obtain the required view. Once selected, the graph may be copied to the clipboard for use in other documents or printed.

Using Excel to Analyse History Records

Using Excel (or other Spreadsheet) To Analyse History Records.

To load a History Record file into Excel:

Run Excel.

Choose FILE - OPEN and select Text Files.

Choose the History Record file to load into Excel (they have a '.TXT' extension).

When the Text Import Wizard window opens, click on the Finish button.

The History Record file will now be loaded into Excel.

To adjust the Cell widths to cope with the Drive comments, do FORMAT - COLUMN - AUTOFIT SELECTION, or select the whole spreadsheet and 'click' on the rectangle in the top LH corner.

The History Record file displays its information in sections containing the following:

Drive information:

Drive title, I.D., software version number, and date and time of the History Upload.

Trip Information:

Present Drive trips, Trip History, and time since last trip.

History Record Set-up Information:

The full set-up information for the History Record including channel descriptions, channel modes, trigger settings etc.

History Record Data:

The format of the History Record data will depend upon the Drive type and upon the History record channel modes, but essentially will consist of one or more columns of History Data. The columns of History data may be visually inspected, or a graph may be produced

from the data using the Chart Wizard. Note that the Chart Wizard will 'ignore' any columns that contain Hexadecimal data (i.e. values preceded by a '&' character). Also note that the **X-Y scatter option in the Chart Wizard must be taken**. Choosing other display modes may cause incorrect data display for some types of History Record.

Note when operating the History Record in Commutations Mode or Fast History Mode (DC3000 only) then Channel 10 of the History record is used by the internal Drive software for internal calculations and will not be able to be programmed by the user for any other parameter. All the other 9 channels are unaffected and may be used and programmed as the user wishes.

See

[MV3000e/GD3000E History Record Data Format](#) and
[DC3000 History Record Data Format](#)

for further information on History Record Data formats.

Using a Word Processor/Text Editor to Analyse History Records

A text editor or a wordprocessor may be used to analyse History Records saved to disc, although analysis using such packages could only be done by examining the History record in its tabular form. See [Using Excel to Analyse History Records](#), [MV3000e/GD3000E History Data Records](#) and [DC3000 History Record Data Format](#) for details of the format of the History Record. Note that the fields within the history record are TAB delimited, and care must be taken not to delete or add any TABS, otherwise future examination of the stored History Record using a spreadsheet may be impaired. It is strongly recommended that [Excel](#) or some other spreadsheet be used for examination of History Records.

MV3000e/GD3000E History Record Data Format

The History Record data format for the MV3000e/GD3000E is as follows:

Column 1:

sample numbers starting with sample 100 down to sample 0 (sample 0 is the last sample taken). The History record is stored with sample 100 first so that when a graph is drawn of the History Record, the most recent sample will be over on the right hand side of the graph.

Column 2:

Time in Milliseconds. Time starts from the oldest recorded sample (sample 100) and increases towards the last sample taken (sample 0). The time between samples will depend on the value entered into the History Log Sample Period (Parameter P26.00). The time between samples will be $5\text{mS} \times \text{value in P26.00}$.

Column 3:

Data for channel 1. Data is shown with a decimal point in the appropriate position (i.e. 56.12). If the data is of a hexadecimal quantity (i.e. a control flags word) then the data is followed by a 'h' character (i.e. DB02h).

Columns 4 to 12:

Data for channels 2 to 10, format as described for column 3

DC3000 History Record Data Format

The DC3000 History Record format depends upon the channel modes selected for the History Record.

[DC3000 Normal History Record Data Format](#)

If all the channel modes are either Min, Max, or Average (values 1, 2, or 3), then the history record data format will be identical to the History Record data format for the GD3000E.

[DC3000 Commutation History Record Data Format](#)

If **ANY** of the History channel modes are set to **COMMUTATIONS (4)**, then the History Data Format is the DC3000 Commutation History Data Format. In this Mode, the DC3000 takes a History sample every commutation and 'ignores' the Max, Min, and average settings on the other channels. Every channel is sampled every commutation. Note that if any of the History Data Channel Modes are set to **FAST HISTORY (5)** then the Fast History Mode takes precedence over the COMMUTATIONS Mode (see next). Note that when in Commutations Mode to enable graphing of DC3000 Commutation History Records in Excel the internal Drive Software will force channel 10 of the History Record to be Commutation time (i.e. $P26.19 = P11.54$).

[DC3000 Fast History Record Data Format](#)

If ANY of the History channel modes are set to **FAST HISTORY (5)**, then the History Data Format is the DC3000 Fast History Data Format. In this Mode, the DC3000 takes a History sample every thyristor commutation and also stores all the individual current samples. This enables an accurate representation of the current pulses. In this mode, the Max, Min, and average settings on the other channels are ignored and every channel is sampled every commutation. Note that the FAST HISTORY takes precedence over the COMMUTATIONS mode i.e., if one channel mode is set to COMMUTATIONS, and another channel mode is set to FAST HISTORY, then the Fast History Mode will be adopted. Note that when in Fast History mode, there is no recording of Channel 10.

DC3000 Normal History Record Data Format

This History Data Format will be employed if all the History channel modes are between 1 and 3 (i.e. Average, Maximum, or Minimum) . This format is identical to the GD3000E and is as follows:

Column 1:

sample numbers starting with sample 100 down to sample 0 (sample 0 is the last sample taken). The History record is stored with sample 100 first so that when a graph is drawn of the History Record, the most recent sample will be over on the right hand side of the graph.

Column 2:

Time in Milliseconds. Time starts from the oldest recorded sample (sample 100) and increases towards the last sample taken (sample 0). The time between samples will depend on the value entered into the History Log Sample Period (Parameter P26.00). The time between samples will be 5mS x value in P26.00.

Column 3:

Data for channel 1. Data is shown with a decimal point in the appropriate position (i.e. 56.12). If the data is of a hexadecimal quantity (i.e. a control flags word) then the data is preceded by a '&' character (i.e. &DB02).

Columns 4 to 12:

Data for channels 2 to 10. Format as described for column 3

DC3000 Commutations History Record Data Format

If any of the channel modes are set to 4 (COMMUTATIONS) and none of the channel modes are set to 5 (FAST HISTORY) then the History Record will take a sample every commutation (every 3.3mS steady state at 50Hz, every 2.8mS steady state at 60Hz). **Note that to allow graphing of a Commutations History Record using Excel** the internal Drive Software will force Channel 10 of the History Record to be the Commutation time parameter (i.e. **P26.19 = P11.54**). This is so that it is possible to calculate the time between commutations during History Record upload. Because of this it is impossible for the user to program channel 10 to be any other parameter whilst in Commutation History Mode.

Column 1:

sample numbers starting with sample 100 down to sample 0 (sample 0 is the last sample taken). The History record is stored with sample 100 first so that when a graph is drawn of the History Record, the most recent sample will be over on the right hand side of the graph.

Column 2:

Time in Milliseconds. Time starts from the oldest recorded sample (sample 100) and increases towards the last sample taken (sample 0). The time between commutations on a D.C. Drive varies with both Mains frequency and also whether the Drive is Accelerating, Decelerating or running steady state. The History record uploader uses the Commutation time in channel 10 to accurately calculate the time between each commutation.

Column 3:

Data for channel 1. Data is shown with a decimal point in the appropriate position (i.e. 56.12). If the data is of a hexadecimal quantity (i.e. a control flags word) then the data is preceded by a '&' character (i.e. &DB02).

Columns 4 to 12:

Data for channels 2 to 10, format as described for column 3.

DC3000 Fast History Record Data Format

If any of the history channel modes are set to 5 (FAST HISTORY) then the History Record will take a sample every commutation (every

3.3mS steady state at 50Hz, every 2.8mS steady state at 60Hz) and will also record all the separate current samples. There are 20 current samples taken every commutation when operating the motor steady-state. Because part of the History record is taken up by the individual current samples, the Drive can only record data for approximately 33 commutations. **Also, note that there is no recording of channel 10 in Fast history mode**, and there is no column of history sample numbers.

Column 1:

Time in milliseconds. Time starts from the oldest recorded sample and increases towards the last sample taken. This is done so that when a graph is drawn of the History Record, the most recent sample will be over on the right hand side of the graph. The time between samples will depend upon the mains frequency. At 50Hz the time between current samples is approximately 0.16mS, and at 60Hz the time between current samples is approximately 0.14mS.

Column 2:

Current sample values in per-unit quantities. Note that the values in columns 3 to 11 will remain frozen for each set of current samples.

Column 3

Data for channel 1. Data is shown with a decimal point in the appropriate position (i.e. 56.12). If the data is of a hexadecimal quantity (i.e. a control flags word) then the data is preceded by a '&' character (i.e. &DB02).

Columns 4 to 11:

Data for channels 2 to 9. Note that there is NO recording of CHANNEL 10 in fast history mode.

Automatic History Log



Introduction

When running the Drive Monitor, it is possible to set up and use the Automatic History Log. The Automatic History Log is enabled through the [History - Auto History](#) menu option (or by clicking the speed button with the symbol shown above). When enabled, the P.C. will check the Drive every ten seconds (note that the Drive Monitor is fully functional whilst the Automatic History feature is running). If the Drive trips, the history record will be automatically uploaded to the P.C.. See the following topics for further information:

[Automatic History Log Overview](#)

[Automatic History Log Set-up](#)

[Automatic History Log Status](#)

[Automatic History Log Disable](#)

Automatic History Log Overview

When [set up and enabled](#), the Automatic History Log feature (which will be called Auto-History for short) will poll the Drive every ten seconds and check for a Drive Trip. If the Drive has tripped, the Auto-History will automatically upload the History Record from the Drive. Each time the Auto-History uploads a history record it saves it to a filename of the form 'AUTOHxxx.HST' where xxx is the Auto-History log number. Each time Auto-History uploads a History record it increments the log number so that a different filename is used. With the Auto-History running, it will therefore upload a History Record after every trip saving it to a unique filename. The History records thus saved can be analysed at leisure. This process will continue until the user [disables the Auto-History](#), the Auto-History disables itself when 999 Auto-History records have been uploaded i.e. 999 trips have occurred during this Auto-History session (up to 999 History Records are stored. Each History record will take up about 8 Kilobytes of disc space). Note that the status of the Auto-History is shown in its own window.

In order for the AutoHistory log to operate correctly, it needs to be able to detect that a trip has occurred. If the drive is configured for Auto-restarting (Menu 28) it is recommended that parameter P28.01 - 'Auto Reset Delay' is set to greater than 20 seconds. This allows time for the Auto-History to detect and record the history information.

Automatic History Log Set-up

The Automatic History Log (Auto-History for short) is set up as follows:

Click on the [History - Auto-History](#) menu and a set-up window will be displayed with the following options:

Enable Auto-History Log.

Check this box to enable Auto-History. Clear this box to disable Auto-History.

Delete Auto-History files before starting Auto-History Log.

Check this box if previous auto-history files are to be deleted.

If this box is cleared, then the Auto-History will continue where it left off (i.e. if this box is cleared, and files AUTOH1.txt and AUTOH2 .txt exist in the HISTORY sub-directory, then the Auto-History will select AUTOH3.txt as the name for its next upload file etc).

Note that the Auto-History button is only active whilst monitoring Drive parameters. Note also that Exiting the Drive monitor will disable the Auto-History function.

In order for the AutoHistory log to operate correctly, it needs to be able to detect that a trip has occurred. If the drive is configured for Auto-restarting (Menu 28) it is recommended that parameter P28.01 - 'Auto Reset Delay' is set to greater than 20 seconds. This allows time for the Auto-History to detect and record the history information.

Automatic History Log Status

The [History - Auto-History Status](#) menu will display a window showing the status of the Automatic History Log (Auto-History for short). If the Auto-History is not running, then this window will display 'Auto History Log Status Not Running'. If the Auto-History is running, then this window will display the status of the Auto-History:

Auto-History Status	Description
Uploading Auto-History	The history record is uploaded and saved in the 'Auto-History' file.
Waiting for Drive Run	Waiting for the drive to run, the next Auto-History file is displayed.
Checking for Trip	On the next Trip the Auto-History file will be uploaded automatically.
Not Running	Auto-History has not been selected

and the Filename that the Auto-History will use to store its next History Record. Note that this window will be displayed automatically when the [Auto-History is first enabled](#), and will be automatically be hidden when the [Auto-History is disabled](#).

In order for the AutoHistory log to operate correctly, it needs to be able to detect that a trip has occurred. If the drive is configured for Auto-restarting (Menu 28) it is recommended that parameter P28.01 -

'Auto Reset Delay' is set to greater than 20 seconds. This allows time for the Auto-History to detect and record the history information.

Automatic History Log Disable [not functioning]

Disabling the Automatic History Log feature (or Auto-History for short)

Disabling the Auto-History:

The Auto-History will be disabled (or will disable itself) under the following circumstances:

Clear Auto-History Enable Check-box

The user executes the [History - Auto History](#) menu option and CLEARS the [Enable Auto-History Log checkbox](#).

Exiting the Drive Monitor

[Exiting the Drive Monitor](#) via the [On Line Parameters Close](#) button will disable the Auto-History function. The Drive monitor must be running for the Auto-History to operate.

History Log Total Reaches 999

If the Auto-History reaches 999 files saved then the feature will disable.

Note that the Auto-History will not be able to operate under the following circumstances:

Serial Link Failure.

In a situation of Serial link failure the Auto-History will be unable to operate. Note that on failure of the serial link a dialogue box "Trying to Establish Communication with Drive" will be displayed. See [Serial Link Problems](#) for further information.

If P32.00 is set to 1

Note that if P32.00 is set to 1, then the History Upload will be faster than when P32.00 is set to 0.

Trouble Shooting History Logs

Serial Link Failure.

In a situation of Serial link failure the Auto-History will be unable to operate. Note that on failure of the serial link a dialogue box "Trying to Establish Communication with Drive" will be displayed. See [Serial Link Problems](#) for further information.

If P32.00 is set to 1

Note that if P32.00 is set to 1, then the History Upload will be faster than when P32.00 is set to 0.

Exiting the Parameter Editor



The [File - Exit](#) menu option or the Toolbar icon will exit the Parameter Editor.

Directory Structure

After installation of this software package, a certain directory structure is assumed and certain files are assumed to be within certain locations.

If the default installation of this package is followed, the directory structure will be as follows:

```
ALSPA_D                                     root
directory
|
|--DC 3000
|--GD3000E
|--MV3000e
|   |--DRVFILES                             sub-directory
|   |
|   |--HISTORY                             sub directory
|   |
|   |--MONITOR                             sub directory
|   |
|   |--TEMPLATE                             sub-directory
```

ALSPA_D

Root directory. This directory contains the executables and the Help File:

ALSPA_D.EXE, QCBASED.DLL, PEDITOR.HLP

All these files are used by the package, and if any of them are missing or corrupted, then the package will not operate.

If during the installation of the package, a different directory was specified, then the Root directory will be replaced by the specified directory name BUT the sub-directories will still have the same names.

DRVFILES

This subdirectory contains the parameter files uploaded from the relevant Drive. These files are text files and will have filenames like:

GD123.DRV GD = Drive type, 123 = Drive ID number
GD123.ERR Error file

If any of the files have a .ERR extension, then this is an error file which has been produced because there were errors during an upload (unable to read certain parameters) or because there were errors during a download (the download file had errors in it). Note that any such errors would be reported to the user in a window during upload or download, but these files are produced as a 'copy'.

HISTORY

This sub-directory stores the uploaded history files. History records uploaded by the Automatic History Log feature will have filenames like

AUTOH1.HST, AUTOH2.HST etc (1st log, 2nd log etc.)

and manually uploaded History records will have filenames such as Hst123.HST where 123 is the Drive ID number.

MONITOR

This subdirectory contains monitor set-up files. If any monitor screens have been saved to disk, then there will be text files of the monitor set-up in this sub-directory. These files may have filenames such as

MSETUP1.MON.

TEMPLATE

This sub-directory contains the Drive template files. There will be a template file for each Drive firmware version. Template files will typically have filenames of the form

S0008__1.TPL where 0.08 is the firmware version number

Structure of a Parameter File

The structure of a parameter file is as follows:

The file of parameters has a HEADER section and a PARAMETER section.

These sections have the following layout:

HEADER section:

START_HEADER

Cell description line

Drive Title TAB Version TAB I.D. TAB Date TAB Time TAB

Blank line

File Comment

Blank Line

END_HEADER

PARAMETER Section:

START_EDITS

Cell description Line

Parameter 1 line

Parameter 2 line

etc

END EDITS

0 0

The **START_HEADER** section must be the first line on the spreadsheet.

Do **NOT** alter the **START_EDITS**, **END_EDITS**, **START_HEADER** or **END_HEADER** lines, otherwise download will not be possible

Do **NOT** delete the line after the **END_EDITS** line.

Any number of lines of any form can be inserted between the HEADER and PARAMETER sections.

Lines can be inserted within the PARAMETER section, although inserted lines must become either a **Parameter Line** or a **Comment Line**.

See [Using Excel to Edit Parameter Files](#) for further information on editing the Parameter File.

Changing The Root Directory

The [File - Root Directory](#) menu allows the user to select the root directory that ALSPA Drive Coach uses to look for its files. ALSPA Drive Coach expects files to be found in a fixed directory format from a root directory, see [Directory Structure](#). In order to allow the user to install ALSPA Drive Coach on any drive, and also allow the possibility

of organising data as required, the user may select a Root Directory in which this fixed directory structure exists. The default directory is where ALSPA Drive Coach was installed into.

Using the Package without a Mouse



This package can be operated without a Mouse by using a combination of keys on the P.C. keyboard. Note that when [Monitoring Parameters](#) the P.C. is communicating with the Drive constantly and sometimes may 'miss' a key press. It may therefore be necessary to occasionally repeat key presses.

Throughout this explanation the term 'control' or 'control item' is used to refer to the buttons, text boxes, check boxes etc within a window. A control item is in fact anything in a window that reacts to user input.

SELECTING WINDOWS

Note that in most cases, the key operations described below only operate on the currently active window. To select a window and make it active, do ALT-W to select the Window Menu, and use ALT-letter (see next) or the cursor keys to select the required window. Note that only windows that are currently displayed will be present in the Window Menu.

MAIN KEYS

ALT-letter

The captions on the main buttons and the menu items are shown with a single letter underscored i.e. Monitor Parameters. Pressing the ALT key and the letter indicated by the underscore will press the button or select the menu item. For example to upload a History Record from the Drive the key combinations would be ALT-H to select the History Menu and ALT-G to upload the History Record (or having selected the History Menu use cursor keys to select required option). To Abort the History Record upload once it is in progress the key combination ALT-A will activate the ABORT button on the upload form.

TAB or SHIFT-TAB or the UP/DOWN cursor keys

Pressing either of these keys will select the next or previous control item in the active window. For example pressing TAB whilst the QuickHelp window is active will select each of the Quickhelp buttons and the 'Stop Help Screen Appearing' checkbox in turn. The currently selected control will be highlighted in some way (it is often shown

surrounded by a thin dotted line). Pressing the SPACEBAR will press the selected button or check/uncheck the checkbox.

SPACEBAR

Activates the currently selected control i.e. presses the button, checks/unchecks the checkbox etc. Note that if a text box is selected, then simply type the required text. If a ScrollBar is selected, then use the UP and DOWN cursor keys to scroll.

ESCAPE

Will often close down a dialog box.

OPERATION OF THE MONITOR

PAGEUP, PAGEDOWN, HOME, and END

These keys are used to select the top or bottom 16 rows of the monitor window.

UP, DOWN, LEFT, or RIGHT cursor keys

These keys are used to navigate around individual cells in the monitor window.

Alternatively, individual cells can be navigated by TAB to select the scroll bar, and use the cursor keys to scroll the monitor table. Note that TAB must be pressed again to select the monitor table in order to enter data or parameters after using the scroll bar in this manner.

INSERT, SPACEBAR, ENTER or RETURN

Pressing either of these keys whilst in the first column of the monitor window will bring up the Parameter Entry dialog box. Pressing either of these keys whilst in the second column of the monitor window will bring up the Data Entry dialog box.

DELETE

Pressing this key whilst in the Monitor Window will delete the current entry.

MONITOR SCROLLING

To scroll the Monitor window, press TAB to select the scroll bar, and use the cursor keys to scroll up and down. Note that in order to enter data or parameters after scrolling in this manner, the TAB key must be pressed again to select the Monitor table.

MONITOR OPTIONS

ALT-M to select the Monitor Menu and cursor keys to select the required menu option, or alternatively ALT-W and ALT-D to select the desktop, and use TAB to select the various buttons on the toolbar.



Avid Controls, Inc.
41261 Park 290 Dr
Waller, TX 77484
+1(281)640-8600
Fax +1(281)640-8605

info@avidcontrolsinc.com

www.avidcontrolsinc.com