Drives Window

Drives Window

User's Manual

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Table of Contents

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Chapter 1 - Introduction to Drives Window Manual

Overview

This chapter describes the purpose and the intended audience of this manual, explains conventions used in the manual, and lists related publications.

Before You Start

The purpose of this manual is to provide you with the information necessary to use the Drives Window program for commissioning and maintaining ABB products.

The audience for this manual is expected to have

- basic knowledge of ABB drive names and terminology, and
- experience in commissioning and maintaining ABB drive following the applicable safety standards.

What This Manual Contains

Here is a brief overview of the information in this manual:

Chapter 1 - Introduction to Drives Window Manual, the chapter you are reading now, introduces you to the Drives Window User Manual and the conventions used throughout the manual.

Chapter 2 - Overview of Drives Window provides a quick summary of the functions and operation of the program.

Chapter 3 - Getting Started describes how to install, set-up, and start the Drives Window program. The hardware and computer system requirements for using Drives Window are also presented.

Chapter 4 - User Interface describes the working environment and the main user display. How to access and begin the user functions are also presented.

Chapter 5 - System Configuration explains the System Configuration Display and how to use the available functions.

Chapter 6 - Drives Panel explains the drive control principle used in Drives Window.

Chapter 7 - Monitor Tool explains how to monitor the signal and parameter values of an ABB drive.

Chapter 8 - Signals and Parameters Tools describes the available Signal and Parameter handling functions of Drives Window. Detailed examples are also given.

Chapter 9 - Data Logger Tool describes how to set up the Data Loggers located in the ABB product. This chapter also details how to display the contents of the Data Loggers by using Drives Window.

Chapter 10 - Event Logger Tool describes how to upload the contents of the event logger from an ABB drive and display the contents with Drives Window.

Chapter 11 - Fault Logger Tool describes how to upload the contents of the fault logger of the ABB product and display the contents with Drives Window.

Chapter 12 - Application Tool describes how to display the symbols of an application and how to control the application programs of the ABB drive.

Appendix A describes version control.

Appendix B describes different Drives Panels.

Appendix C describes use of CDW.INI profile file.

Appendix D describes use of DDCS channel, node autonumbering etc.

Index lists major topics and the pages they appear on.

Related Publications

In addition to this manual you can use documentation for products supported by Drives Window. Supported products are listed in Appendix A.

Conventions Used in This Manual

Listed below are the terms and conventions which have special meaning throughout this manual.

Actual Signals

Actual signals refer to the variables which the ABB product measures or calculates. These signals are also commonly termed 'feedback' signals.

Communication Driver

The communication driver is a part of the Drives Window program which handles all of the communications with a product. The communication driver passes the data between Drives Window and the ABB product through the communication link.

Communication Link

The communication link is the data bus which is used for communication between the Drives Window program and the ABB product.

DDCS Link

The DDCS (Distributed Drive Communication System) link is a high speed fibre optic data bus (communication link) dedicated for ABB drives.

Default Drive The default drive is the active drive currently being used as the targetdevice for Drives Window. The default drive can be set using any of the drive selection commands in Drives Window.

Parameters Parameters are operating instructions for the drive program; they are organized in logical parameter groups. Parameter values can be downloaded, uploaded, saved to a file, viewed, and changed with the use of Drives Window.

Reference The reference is an operating instruction to define e. g. the rotational speed or torque at the shaft of the motor.

Symbol Table The Symbol Table is created by the AdvaBuild Function Chart Builder (FCB) program. The items (symbols) of the symbol table can be function block inputs or outputs in the drives application program.

Target Device The commands sent by Drives Window are sent to an ABB product which is called the target device. The Drives Panel and each tool have designated target devices. The target device of a tool is the default product selected when the tool is started. For example, if you open a new Signals and Parameters Tool window, it will display the signals and parameters of the current default device. The target device of the Drives Panel is always the current default.

Target Driver The target driver is a part of the Drives Window program which takes care of all the target dependent parts of Drives Window.

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Chapter 2 - Overview of Drives Window

Overview

This chapter provides a quick summary of the functions and operation of the Drives Window program.

Program Structure

Drives Window consists of several independent parts: the User Interface, the Target Drivers, and the Communication Drivers. With this component structure, enhanced flexibility is achieved to enable you to work with several different types of products through different target and communication drivers. The look and feel of the Drives Window program remains the same even when the product changes.

User Interface

The User Interface of Drives Window allows you to access the main functions of the program. The program follows the common user interface guidelines for Windows program.

Target Driver

The Target Driver includes all of the target-dependent information. The program identifies the type of the target device and starts the corresponding target driver automatically during initialization. You can even work with different types of products at the same time due to the component structure of Drives Window.

Communication Driver

Drives Window can be used with different communication links. The types of communication drivers you can use are defined by the target device. All you need is the hardware for connecting the PC to the communication link and the respective communication driver.

Drives Window Functions

Drives Window offers you several functions for commissioning and monitoring ABB products. All of the functions are available from the main Menubar or Toolbar of the program. This manual also describes other access methods for the functions (See Chapter: *User Interface*).

In Drives Window there are two special displays and six tools:

Special Displays	***Tools***
System Configuration	Signals and Parameters Tool
Drives Panel	Monitoring Tool
	Data Logger Tool
	Event Logger Tool
	Fault Logger Tool
	Application Tool

You can work with several drives using several tools at the same time. Each time a tool is started a new tool window is created.

System Configuration Display

The System Configuration display provides you with an overview of the system as well as the type and status of each product on the communication link(s). Included in the System Configuration display are also the previously saved files located on the hard disk of the computer. By double-clicking on a specific file, the corresponding Drives Window tool is started to display the contents of the file.

Drives Panel

The Drives Panel is used for controlling the operation of a selected drive within the system. You can control different drives by changing the target drive selection. Commands available with the Drives Panel depend on the currently active target. Usually there are the following commands with the Panel:

- Start and Stop
- Set the speed reference
- Change the reference direction (forward/reverse for AC-drives)
- Reset the active fault
- Change the control between Drives Window and external control location
- Step

In addition to these, there may be target dependant command buttons, for example Coast Stop (ACS 600 MultiDrive) and Homing (ACS 600 Motion Control). Different Drives Panels are described in the Appendix B.

Signals and Parameters Tool

The Signals and Parameters Tool is used for selecting signals, parameters, and application symbols used for monitoring. You can also set the parameter values in either off-line and on-line mode. Several Signal and Parameter Tool windows for one or multiple drives can be used at the same time. When started, either the whole Parameter table or only the group headings are loaded depending on the option set.

Monitoring Tool

The Monitoring Tool is used for trending the actual values of the target graphically. Also the following functions are supported:

- Zoom-In and Zoom-Out
- Scaling the graphs
- Setting the Sample Interval
- Setting the length of the visible screen
- Triggering on specific conditions
- Scrolling the Monitor History
- Adding a synchronized reference graph to the Monitor View

- Saving the Monitor View and the History as it is

Data Logger Tool

The Data Logger Tool provides facilities for viewing the contents of the data loggers in the drive. You can display the data in either graphical or numerical form. The contents of different data loggers are displayed in separate windows. Data loggers are useful for exact measurements with high frequencies.

Event Logger Tool

The contents of the event logger in the drive can be viewed and cleared by using the Event Logger Tool.

Fault Logger Tool

The contents of the fault logger in the drive can be viewed and cleared using the Fault Logger Tool.

Application Tool

Application programs are developed by using a separate programming tool. AdvaBuild Function Chart Builder is used for developing ABB drive application programs. Drives Window can be used for controlling, downloading, and debugging the application programs. Controlling application programs refers to starting and stopping the execution of the program inside the target device.

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Chapter 3 - Getting Started

Overview

This chapter provides you with the necessary information to install, connect, and start the Drives Window program. General information about using Drives Window is also provided.

System Requirements

To operate Drives Window, your computer must meet the following requirements and have the following hardware and software installed:

- Any IBM-compatible computer with an 80486 processor or higher
- 8MB of RAM memory
- 3½" floppy drive
- VGA compatible display or better
- MS Windows 3.1, 3.11 or MS Windows 95.
- DOS version 5.0 or later.
- One or more communication adapters with the respective Communication and Target drivers

Installing the Drives Window Software

The software installation copies all necessary files from the delivery diskettes to the user specified drive and directory. The set-up program prompts you to install the software to a directory called **\ABBTools\DRIWIN**, but you can change the directory to whatever you like. The set-up program also prompts for a working directory. The contents of this directory are displayed in the System Configuration Display. The installation creates an ABB Tools group in the Program Manager and the Drives Window icon can now be found in that group.

Running Set-up

To start the set-up program:

1. If Windows is not running, start it now. Make the Program Manager the active window.

2. Insert the Drives Window Disk 1 in the appropriate floppy drive.

3. To open the File Run Dialog Box, select the *Run* command from the Program Manager's **File** menu.

4. Type the drive letter of the floppy drive followed by "**:\SETUP.EXE**". For example, if the diskette is in drive A, type "**A:\SETUP.EXE**". Click on the **OK** button, or press **ENTER**.

5. Follow the instructions given by the Set-up program.

Uninstall the Drives Window Program

The uninstaller allows the application to be easily uninstalled if you no longer want to keep the application on the hard disk and want to retrieve all the used disk space. You can launch the uninstallation program by clicking the *Uninstall DRIWIN* -icon from the ABBTools group. This allows you to cleanly remove all the changes that were made during the installation and set-up process. If you have created your own Drives Window files, e. g. Monitor files, they are not removed; thus updating the program is easy.

Communication Statistic

The Drives Window offers the possibility to verify the operation of the communication link to the target. You can display a list of the available communication events and errors. This can be select by *Communication Statistics...* command from the **System** menu.

Starting the Program

The program is started by double-clicking the Drives Window icon in the Program Manager. It is also possible to start the program by selecting the *Run...* command from the **File** menu and then specifying the complete path and name of the program. At start, if there is more than one communication driver, the Drives Window asks you to select the communication protocol. You can select the protocol from the drop-down menu. Then the welcome window shown below in Figure 3-1 is displayed.

Figure 3 - 1 Welcome window.

Using On-Line Documentation

Drives Window offers you on-line documentation the Drives Window program. You can also see help information on the Statusbar (at the bottom of the Drives Window screen) while moving the mouse over the control.

Drives Window Help

Drives Window Help includes information on how to use the program. You can access the Drives Window Help through the **Help** menu. There is also context-sensitive help available in many parts of the program. Context-sensitive means that you can get specific Help on these parts without having to go through the main **Help** menu. Pressing **F1** in any part of the software displays help information about that part.

Chapter 4 - User Interface

Overview

The Drives Window user interface provides a flexible yet standard viewing area for the user. Common toolbar commands allow the user to select which tool is started or viewed. Figure 4-1 shows the User Interface and the available functions.

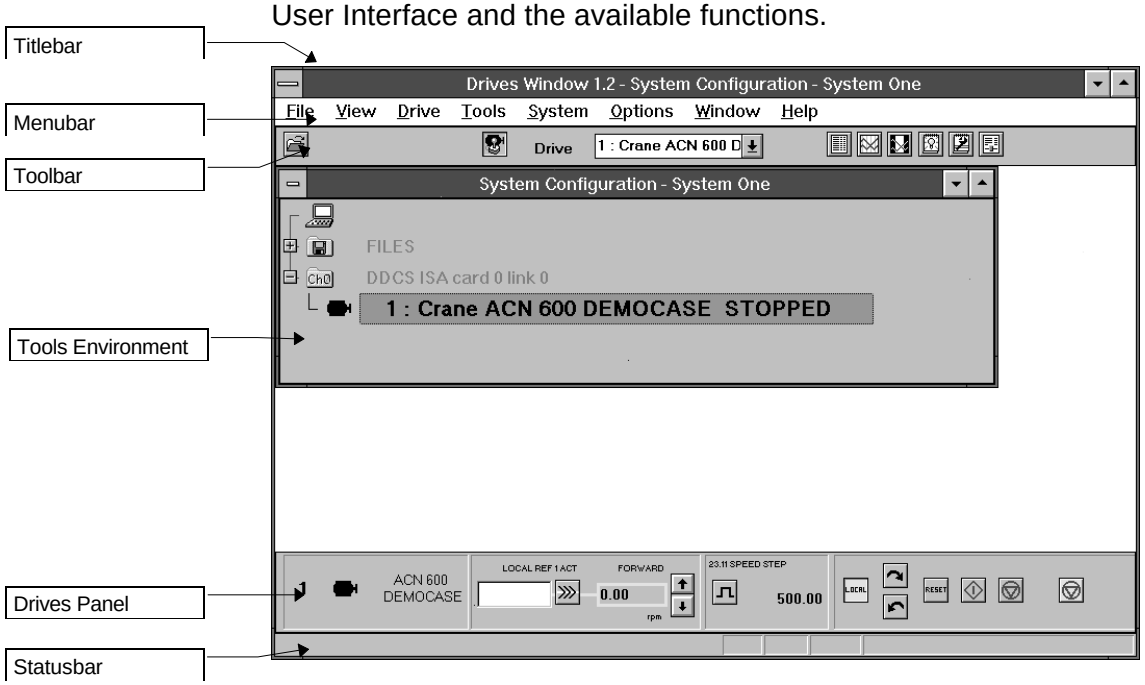


Figure 4 - 1 User Interface

Throughout the Drives Window program, there are three common methods that can be used by the user to start or select the available functions.

1. You can use menu commands. Open a menu by clicking on it, or by pressing **Alt-**key plus the letter that is underlined in the menu's title. And then you choose a menu selection by clicking on it, by pressing its underlined letter, or by using the cursor keys to highlight it and the pressing **ENTER**.

2. You can click on the button on the toolbar. Toolbar buttons perform an function, just like a menu selection. Statusbar shows the help text when you move the cursor on the button.

Select the function from the pop-up menu. Click the right mouse button and a pop-up menu with the functions related to the specific tool will be presented. The Drives Window's Main Window contains six regions: the Titlebar, the Menubar, the Toolbar, the Tools Enviroment, the Drives Panel and the Statusbar.

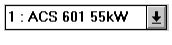
Each region has specific uses and functions, which are explained on the following pages.

Titlebar The Main Window's Titlebar displays "Drives Window v1.2 -", the name of the tool,":", the number of the target, ":" the optional name you have set to the target and the name of the target device. Titlebar contains the standard Windows titlebar controls.

Menubar The Menubar contains Drives Window's menus. Each menu lists group of selections, and each selection performs a specific function. You can select between long and short menus from the **View** menu.

Toolbar The Toolbar provides quick access to commonly used commands in the Drives Window environment. Toolbar buttons perform a function, just like a menu selection. To carry out the button's function just click on it. The Toolbar can be hidden or displayed from the **View** menu.

Table 4 - 1 Toolbar Icons

Icon	Action	Menu Equivalent
	Displays the Drive Panel Tool.	*Drives Panel* command under the **View** menu. If there is a checkmark (√) by the command, the tool is visible.
	Displays the Signals and Parameters Tool.	*Signals and Parameters* command under the **Tools** menu.
	Displays the Monitoring Tool.	*Monitor* command under the **Tools** menu.
	Displays the Data Logger Tool.	*DataLogger* command under the **Tools** menu.
	Displays the Event Logger of the Target Device.	*Event Logger* command under the **Tools** menu
	Displays the Fault Logger of the Target Device.	*Fault Logger* command under the **Tools** Menu.
	Displays the Application Tool.	*Application* command under the **Tools** menu.
	Opens a file.	*Open...* command under **File** menu.
	Saves the data from the active tool.	*Save As...* command under **File** menu.
	Prints the data from the active tool.	*Print...* command under **File** menu.
	Selects the default target.	*Select...* command under **Drive** menu

Statusbar

The Statusbar provides information about the active tool, such as status of the tool and information about the toolbar buttons. This Statusbar can be hidden or shown from the **View** Menu.

Using the Keyboard

You can use Drives Window menu commands also from the keyboard. You open a menu by pressing **ALT** -key plus the letter that is underlined in the menu's title. And then choose a menu selection by pressing its underlined letter, or by using the cursor keys to to highlight it and the pressing **ENTER**.

Also you can access the most frequently used Drives Window's functions from the keyboard by using combination of keystrokes. These combinations are called short-cut keys. The short-cut key for a command appears to the right of the command in the menus.

Working with Multiple Windows

With Drives Window, you can have more than one tool open at the same time. You can open as many tools as you want, depending on how much memory is available on your computer. Each tool that you open is displayed in a separate window, which is listed on the **Window** menu.

The window you are currently working in is called the active window and the tool you are working in is called the active tool. Most of the commands or actions you carry out affect only the active tool.

From the **Window** menu you can choose the window you want to make active. Also you can use keyboard command (**Ctrl+TAB**) to change the active window. **Window** menu also offers functions for organizing a set of open windows.

Customization

From the **Options** menu, the User Interface can be customized to the users' preference in two fashions: Confirmations and Status Messages.

Confirmations

Drives Window can be configured to confirm the users' actions for the following situations:

- Drive Start
- Drive Stop
- Drive Fault Resetting
- Drive Reference Change
- Parameter Download
- Switching to On-line Mode
- Parameter Value change in On-line Mode

When selected, Drives Window will prompt the user to confirm that the action is to be taken before issuing the command.

Device Status

Similar to the Confirmation configuration, the status of the drive can alert the user when certain conditions are detected. These conditions include:

- Faults
- Warnings

When selected, Drives Window will alert the user when a certain condition is detected. Status query can also be turned off or used only with the Drives Panel. If the communication load is very high, status is automatically queried only for the default target.

Version Checking

The Drives Window checks whether the target version corresponds with the application version in the following cases,

- download parameter values
- compare parameter values
- reload saved data logger data
- open a symbol table
- download an application

if there is differences between the versions data the Drives Window prompts a confirmation that you really want to continue.

Note: In some version conflict the Drives Window can totally prevent the action.

Workspace Saving and Loading

You can save open Tools with their settings using *Save Workspace* function in the **File** menu. A saved workspace can be read using *Load Workspace*.

Chapter 5 - System Configuration

Overview

The System Configuration Display is the main window of the Drives Window program. This display is entered automatically when you first start the program. All the drives found on the communication links are shown with their respective status information. Also, previously saved files that are located in your working directory are shown on the display under FILES directory.

This chapter describes the status information and symbols used in the System Configuration Display. The functions of the System Configuration Display are also explained.

System Configuration Display

The configuration of the drive system is displayed in the Tree List of the System Configuration Display. The available information displayed depends on the communication link(s) used.

Figure 5 - 1 shows an example of a DDCS-communication link. The target devices (drives) for each channel are displayed in hierarchical order.

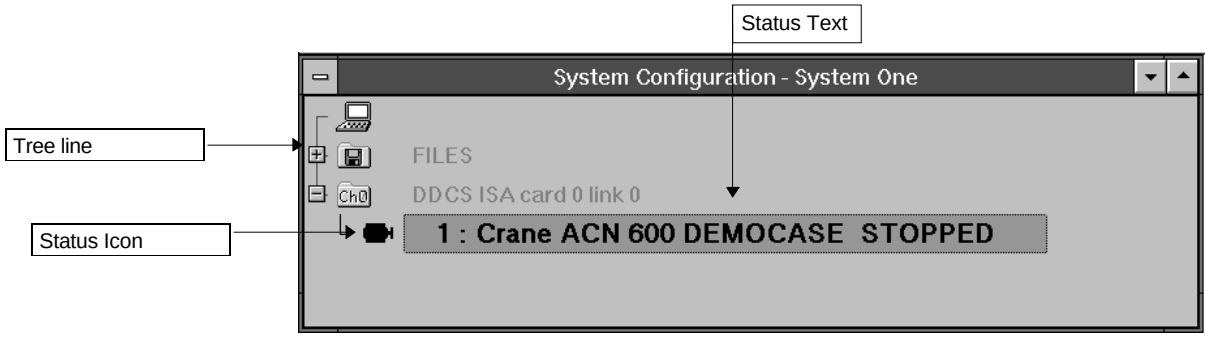


Figure 5 - 1 System Configuration Display

Tree Line

The Tree line displays the hierarchy of the system. The plus or minus symbol indicates if the tree items are expanded (shown) or collapsed (hidden).

Status Icon

Status Icon represents the status of the target device.

Table 5 - 1 Status Icon Tables

Status	Icon	Meaning
RUNNING Forward ⇒ Reverse ⇒	 	The Target Device is running.
STOPPED		The Target Device is stopped.
FAULTED		The Target Device has a fault.
WARNING: Stopped ⇒ Running ⇒	 	The Target Device has an active warning.
Unknown Status ⇒		The Status Query is not on and the Status of the Target Device is unknown.

Status Text

Status Text displays the station number, name, type, and status of the target device in text form. Colors also differ: red indicates a fault and yellow a warning.

Note: The state STOPPING uses the same icon as RUNNING and DISABLED uses the same icon as STOPPED (with the status text in red).

How To...

This section describes how to perform the functions of System Configuration display.

Expand and/or Collapse the Drive List

A plus or minus before an item indicates that the item has subordinate levels. A plus indicates that the subordinate list is collapsed whereas a minus indicates that it is expanded. The subordinate levels can thus be displayed or hidden by clicking the plus (+) or minus (-) sign on the Drive List. In order to expand or collapse the display, none of the individual items in the subordinate list can be selected.

View Status Information

The status of each drive is displayed using an icon as well as a text string. The Table 5 - 1 explains the icons and the texts used.

Update the Status Display

As the default, the Drives Window program updates the status information for all connected devices periodically, e. g. with DDCS Communication twice a second. You can, however, set only the Drives Panel status be updated or disable the status updating altogether by options on Device Status dialogue. To display the Drives Status dialogue select *Device Status* from the **Options** menu.

View Faults and Warnings Messages

If a drive in the system declares a fault or warning, the user is informed of the condition by a fault or warning message box. This message box can be disabled by deselecting the Fault/Warning messages option from the Options/Drive Status menu. From the fault/warning message box, you can reset the fault or view the fault logger.

Note: If you want only the Drives Panel be updated, then only the currently active Target's faults and warnings are notified.

Select Drives

If you want to display only the drives that you are working with, you can do that by selecting the *Select Drives...* command from the **System** menu. The following dialogue is displayed:

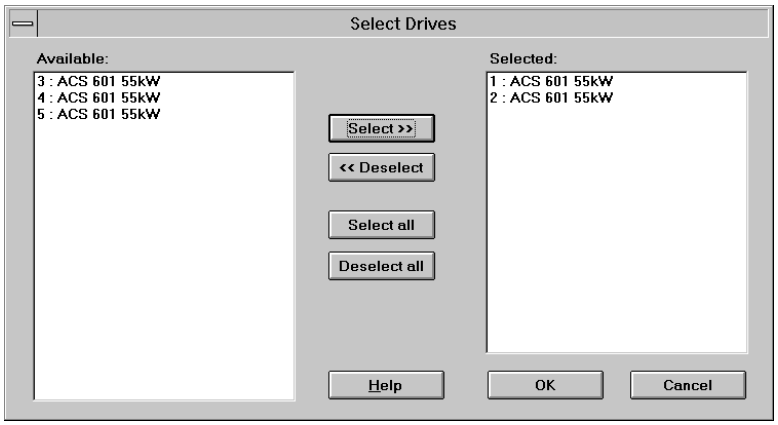


Figure 5 - 2 Select Drives dialogue.

Creating a set out of the connected Targets is useful when you have too many Targets connected to update the status of them all or you can't see the Targets you want to observe at the same time in the System Configuration Window.

Select the Default Drive

Before starting any of the tools you must first select the drive you want work with, which is called the default drive. This is done by clicking on the drive in the System Configuration Display or by using the *Select* command from the **Drive** menu. As the default, the first Target of the first communication channel is chosen.

Load a Saved File

You can view saved files from the System Configuration window by selecting the file name from the FILES directory. Drives Window will then load the contents of the file and show it in the respective tool.

Start Another Tool

Any of the Drives Window tools can be started from the System Configuration Display. A tool will be started for the default drive by using the commands available in the **Tools** menu or by clicking a tool button on the toolbar. Another way to start a tool is to click the right mouse button in the System Configuration window and then select a tool command from the pop-up menu.

Give a Name for the Drive

You can give a specific name for each drive. The name are displayed next to the drive number in the status text.

File Upload

By means of the *File Upload* command on the **Drive** menu you can upload the predefined files from the Target.

File Download

By means of the File Download command in the same menu you can download a file to a selected Target.

Note: Always use this command according to instructions given in your product ,anual.

Save System Configuration to a File

You can save the System Configuration to a file by selecting the *Save As*. . . command from **File** menu while the System Configuration window is active. If you have made changes to the configuration settings the Drives Window asks you to confirm that you want to save the changes when you quit the program. Choose the Yes button to save the settings. The System Configuration file extension is .dwc.

Reload Parameter and Signal Table

After a Target is connected, a Parameter and Signal table may be loaded for it. The loading of the table takes automatically place in the beginning of the initialization of the first tool for the target (e.g. signals and parameters tool).

You can reload the contents of the Parameter and Signal table by using *Reload Parameter and Signal Table* command from the Drive menu.Reload the contents of the Parameter and Signal table is necessary in the following cases:

- A new application is downloaded (the construction of the AMC table is changed).
- The PASS CODE is changed.
- A macro is changed.
- The display language of the table is changed.
- You have changed the option "Take the Whole Parameter Table"

Note: When you reload the contents of the table all the open Signals and Parameters tools, Monitors and Data Loggers of this Target will be closed.

Reidentify Network

If you change the PC connection or remove a drive from the PC connection, you must reidentify network. You must close all of the open Tools before issuing this command. Network reidentification also takes automatically place if you reconfigure any of the communication links.

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Chapter 6 - Drives Panel

Overview

This chapter describes how to control the ABB product from the Drives Window with the Drives Panel. The Drives Panel may be different with different Targets: refer to Appendix B to have more information about different ABB drives.

Using Drives Panel

Drives Panel button

The Drives Panel is used for controlling the operation of the drive. You can start and stop the drive, change the direction of rotation and step and adjust the reference value. In case the drive trips on a fault, you can reset the fault from the Drives Panel. It is possible to control several drives from the Drives Panel.

The Drives Window helps you in controlling the drive by giving you some warnings. For example, if you try to start a drive in fault condition, the Drives Window prompts you to first reset the fault. The warnings depend on the type of the drive you are controlling.

Here is an example of the Drives Panel for the ACS 600 MultiDrive:

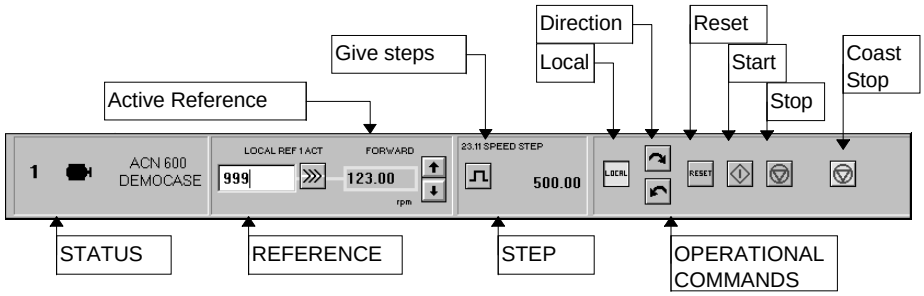

Figure 6 - 1 Drives Panel

You can display or hide the Drives Panel by selecting the *Drives Panel* command from the **View** menu, by clicking the **Drives Panel** () button on the toolbar or by first clicking the right mouse button and then selecting the *Drives Panel* command from the pop-up menu. Drives Window displays the Drives Panel of the default drive.

Features...

This section describes the features of this tool.

Drives Window Control

You can use the Drives Panel to give commands and monitor the status of the selected drive. In order to be able to give operational commands to the drive, first set the control location of the drive to the computer. Refer to the manuals of the drive on how to set the control location.

As a default when issuing a command, the Drives Window verifies that you really want to send the command to the selected drive. The following warning is displayed when the user issues a Start command:

Figure 6 - 2 Starting the drive

The verification can be removed by changing the settings in the Confirmation and Options dialogue in the **Options** menu:

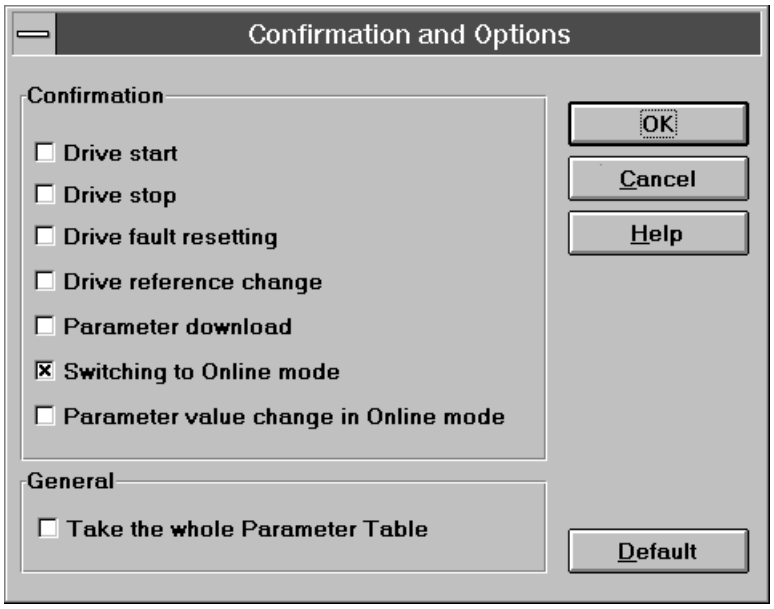

Figure 6 - 3 Confirmation and Options Dialog

Operationals Commands

The start, stop, direction, reset and local commands of the Drives Panel can be issued by clicking on the respective command buttons or by selecting a command from the **Drive** menu. The table below describes how to start and stop the drive, change the rotation direction, reset a fault and change the control location.

Table 6 - 1 Operational Commands

Button	Description	Menu Equivalent
	Stops the drive.	**Stop** command under *Drive* menu.
	Coast stops the drive.	**Not available,** specific only for certain Targets
	Starts the drive .	**Start** command under *Drive* menu.
RESET	Resets an active fault from the drive.	**Reset Fault** command under *Drive* menu.
	Changes the rotational direction of the drive to Forward.	**Forward** command under *Drive* menu.
	Changes the rotational direction of the drive to Reverse .	**Reverse** command under *Drive* menu.
LOCAL	Changes the control location between Drives Window and External control.	**Local** command under *Drive* menu.

Setting Reference

To set the reference of the drive, type the new value in the reference field on the Drives Panel and then press the return key or the **Send** (») button. Another way to set the reference is to use the *Set Reference...* command from the **Drive** menu. It displays the following dialogue:

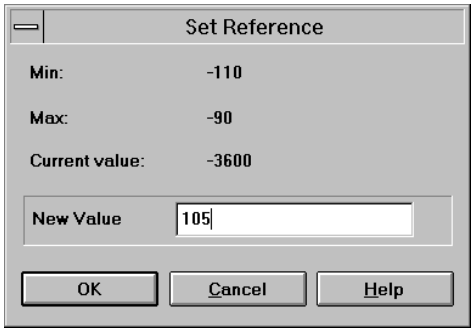

Figure 6 - 4 Reference setting dialogue

Type the new value in the New Value field.

Note: Minimum and maximum values are given with signs indicating Forward / Reverse reference limits, but most Targets do not allow user to give a signed reference and expect the direction be given with special Forward and Reverse commands after a new reference value is typed in.

Step Function

In order to study the effect of step responses, Drives Window allows you to define a step function for the reference or a parameter. Step itself is defined by selecting "Define Steps..." from the **Drive** menu. Rising and falling edges and active time are possible for the step function.
If you don't define any active time, a button with a rising edge image appears on the Drives Panel.

By selecting an active time for the step, the setting of rising and falling edges is automatic once the button with a pulse image on the Drives Panel is pressed.

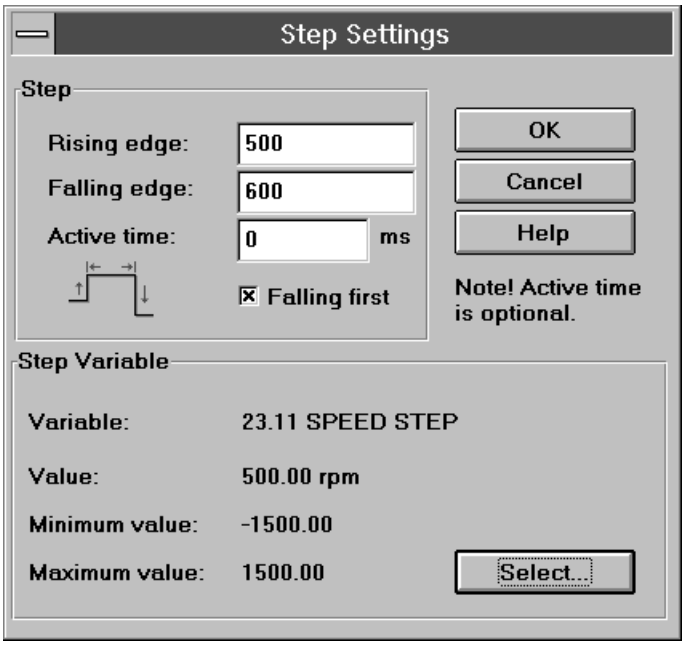

Figure 6 - 5 Viewing and Defining Steps

Chapter 7 - Monitor Tool

Overview

This chapter describes how to monitor the signal and parameter values of the ABB drive.

Starting the Monitor Tool

Monitor Tool button

The Monitor Tool is a graphical interface used to trend the actual parameters and signal values of the Target device. The Monitor Tool is started by clicking the **Monitor Tool** button on the main toolbar or by clicking the right mouse button on the System Configuration window and selecting the Monitoring command from the pop-up menu. You can also start the Monitor Tool from the **Tools** menu.

You can select up to a maximum 6 different variables from different Targets for trending. You can also open the Monitor Tool for viewing previously saved files.

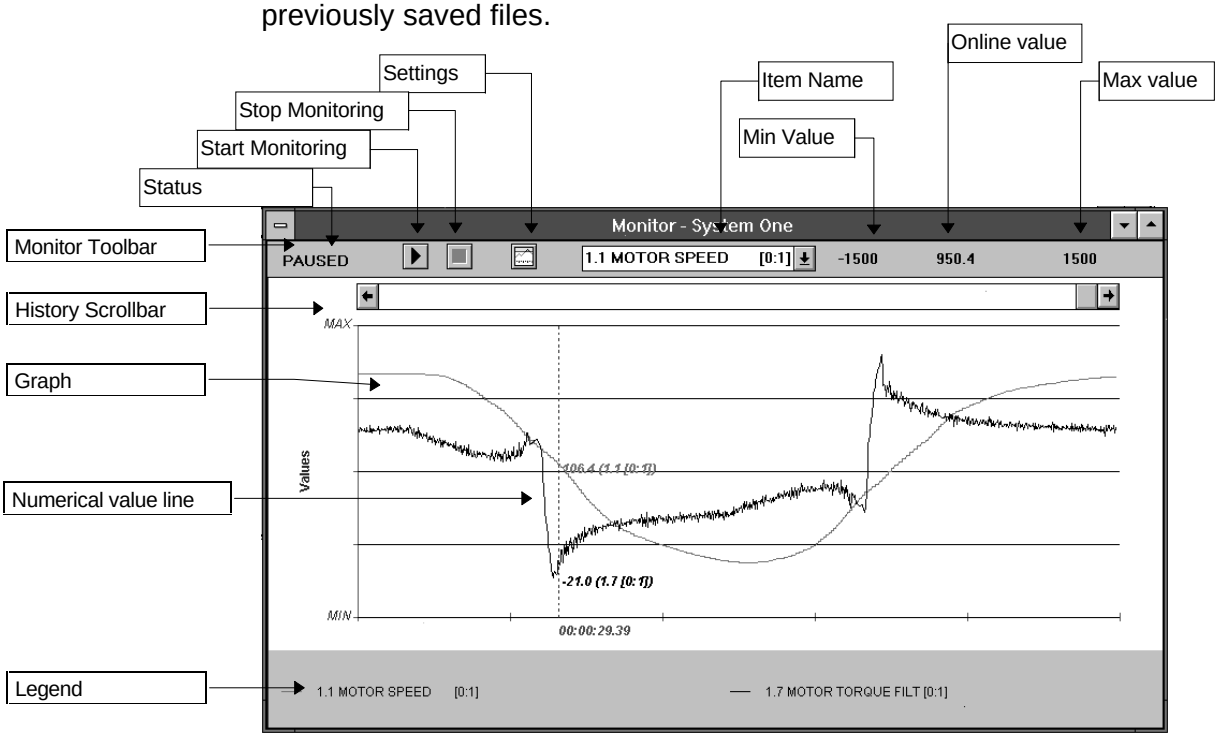

Figure 7 - 1 Monitor Tool

The Monitor Toolbar provides you with quick access to the functions of the Monitor Tool. Both the Monitor Toolbar and the Legend can be hidden from the **View** menu.

The **Monitor** menu includes the Monitor Tool specific commands. You can access the **Monitor** menu either from the main Drives Window toolbar or by clicking the right mouse button on the Monitor window.

How To...

This section describes how to perform the functions of this tool.

Select Items for Monitoring

When you start the Monitor Tool you are presented with the *Select Variables* dialogue.

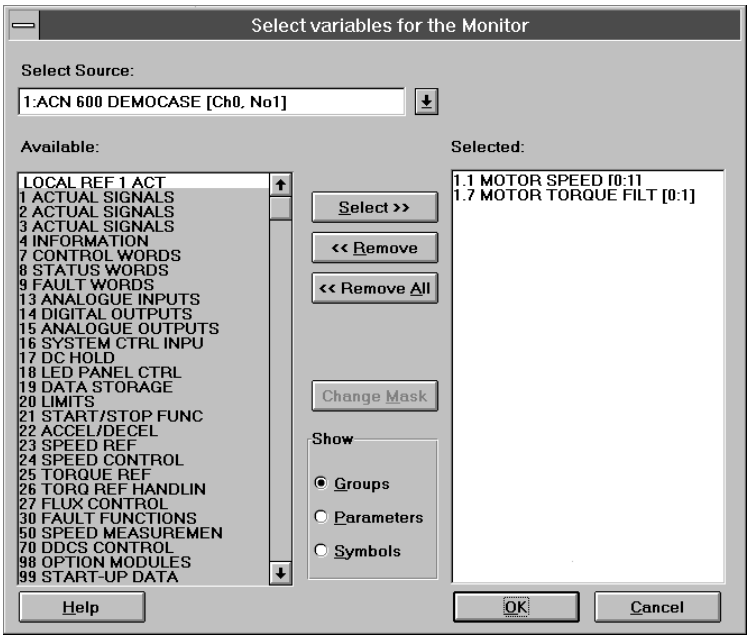

Figure 7 - 2 Select variables for the Monitor

You can select up to a maximum 6 different variables for the Monitor. You can select variables from different Targets by first selecting the Target from the *Selected Target* drop-down list box and then the variable from the *Available variables* field. Selected variables appear on the right hand side list box. Target the variable belongs to is indicated by the channel and node numbers given in brackets.

Values type of packed boolean

You can select up to a maximum 6 different variables type of packed boolean for the Monitor. When you have selected the variables the *Select Bits* -dialog is displayed. The *Select Bits* -dialog shows all the selected variables in bit form. You can select up to a maximum 16 bits from the different variables for the Monitor.

Note: If you select variables of other type with packed booleans, packed booleans are monitored as integers.

Monitor Settings

Once you have selected the variables you want to trend, press OK button in the *Select Variables* dialog and the *Monitor Settings* dialog appears instead. The dialog is as follows:

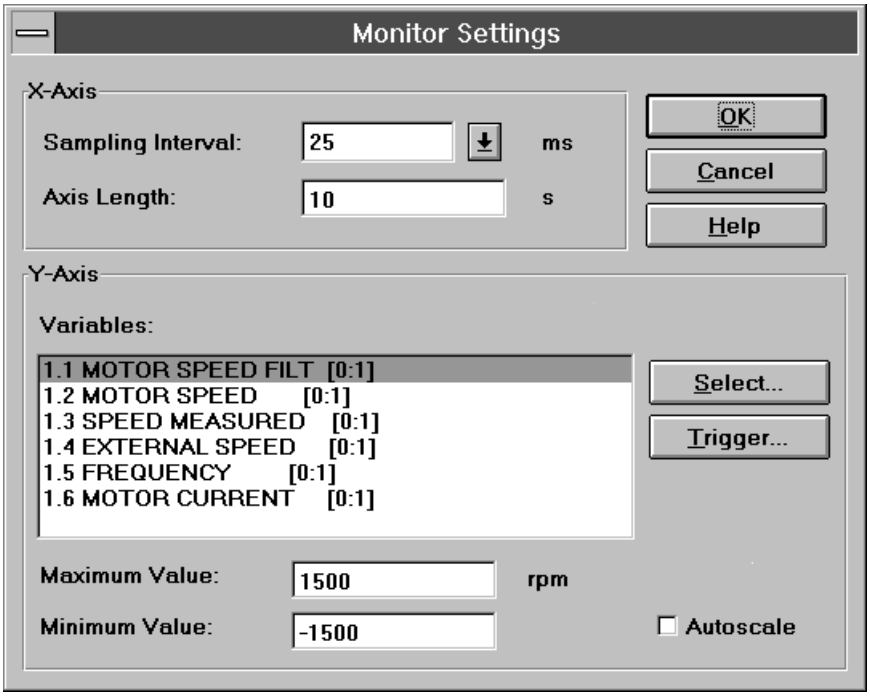

Figure 7 - 3 Monitor Settings

Each selected variable is shown in the list box with minimum and maximum values. As the default, the first variable in the list is active. By clicking items in the list box you can view scalings of the other variables. Autoscaling is variable specific: you can click it off for the variables you want to scale yourself.

In the *Monitor Settings* dialog you can also adjust the sampling interval and the length of the visible Monitor graph. In the sampling interval combo box you have all the available intervals listed. Intervals are for one variable only: if you have selected more than one variable, the smallest intervals may create too heavy a load.

The length of the X-axis sets the time you can see at one time on the Monitor screen. Remember: you can view the Monitor history, so you do not have to worry about loosing data, if you want the X-axis be short.

Pressing **Trigger...** button you can set triggering conditions. You can trigger the actual values either in continuous or single triggering mode.

In the continuous trigger mode, the actual values are measured until you stop the Monitor; while in single trigger mode, the display will be stopped once the triggering conditions for one or several signals are met. The triggering point is displayed by a vertical line on the display.

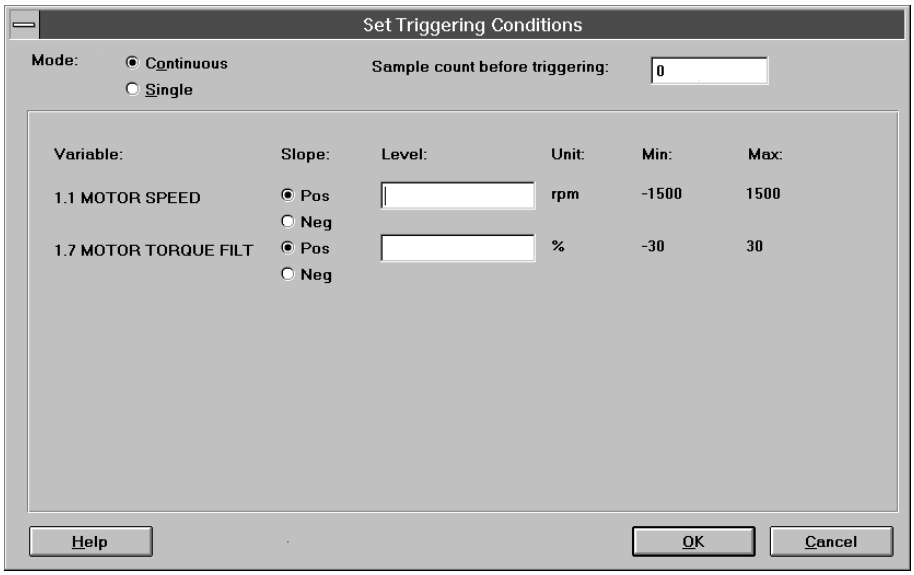

Figure 7 - 4 Setting Triggering Conditions.

You can define a triggering level and triggering condition for each item. The first triggering condition that occurs stops the Monitor. You can also define the number of samples which are displayed before the triggering point.

After the settings are done, press OK to close the *Monitor Settings* dialog. If you want to change settings, select *Settings...* from the **Monitor** menu or press **Settings**() button in the Monitor toolbar.

Start and Stop the Monitoring Display

The monitoring is started when you press the **Go** () button (short-cut key **F2**) on the Monitor toolbar or select the *Go* command from the **Monitor** menu. The **Pause**() button (short-cut key **F3**)or the *Pause* command of the **Monitor** menu stops the Monitor.

History Data

By using the history scroll bar just below the Monitor toolbar, you can view the history data back sample by sample. The scroll appears only if there is history data to be viewed and the Monitor is paused.

Item Value

The Monitor Tool displays detailed information about the items. In the runtime an online numerical value between minimum and maximum values is shown in the toolbar for the selected variable. If you have paused the Monitor, you can see accurate numerical values of variables and X-axis by clicking a point in the Monitor screen with the left mouse button.

A vertical red line appears with accurate, interpolated numerical values on its right side. You can also get the line in zoomed state (see later).

Display Modes

There are two different display modes, scroll and sweep, which can be selected by the *Graph Type* command from the **View** menu. Sweep mode is recommended if fast monitoring is required.

Note: If you are using the sweep mode, history data is saved but available only from the file.

Zoom on a Specific Viewing Area

The *Zoom In* command lets you see the graph signals in greater detail. To zoom-in on a specific area of the graph, use the following procedure:

1. If the monitor is running, stop the monitor by clicking the **Pause**(■) button or by pressing the short-cut key **F3**.

2. There are two Zoom selections on the **View** menu: *Zoom In* and *Zoom Out* (also on the pop-up menu). Select *Zoom In* or press short-cut key **F4**. Point the cursor's crosshairs at any corner of the retangular area that you want to enlarge.

3. To select a square, press and hold the left mouse button. Drag the cursor to the opposite corner of the rectange.

Release the mouse button.

If you are using the keyboard:

1. If the monitor is running, stop the monitor by pressing the short-cut key **F3**.

2. There are two Zoom selections on the **View** menu: *Zoom In* and *Zoom Out.* Select *Zoom In* or press short-cut key **F4**. Point the cursor's crosshairs at any corner of the retangular area that you want to enlarge. You can do that by the keyboard cursor keys.

3. To select a square, press and hold the **Shift**-key and drag the cursor to the opposite corner of the rectange by the cursor keys.

4. Release the **Shift**-key and press **ENTER.**

To continue monitoring, you have to first select *Zoom Out* command from the **View** menu.

Save Data to a File

The actual values of the monitored signals or parameters along with their history data can be saved to a file for later use. Saving is possible only when the monitor is stopped. The values are saved in text format so it is possible to import the data into any program which supports text format. To save the values use the *Save As* command from **File** menu or click the **Save**() button on the toolbar. The Monitor Tool file extension is *.dwm*.

Read Data from a File

Graphs which are saved to a file using the Drives Window format (.dwm) can be retrieved by using the Open command from the **File** menu or clicking the **Open**() button on the Monitor toolbar. Select the file you want to retrieve, and a new monitor window is opened with the contents of the file.

Using a File as a Reference Graph

If you want to compare differencies between two events you have in the Monitor screen, it is possible by displaying a file on the actual Monitor Tool. This is achieved as follows:

Create a file and save it.

1. Continue monitoring signals.

2. Pause the monitor to a position you find interesting.

3. Select a synchronizing point by clicking it with the left mouse button. A red line appears. You can also zoom in the Monitor before settings the line.

4. Open the file and repeat step 3 for it.

5. Select *Merge* from the file's **Monitor** menu. Then click the file window with the left mouse button. Keep the button pressed down and move the file window onto the Monitor window. Release the mouse button.

6. File variable graphs are now displayed on the Monitor graphs so that the red lines were synchronized. The file's X-axis is automatically scaled to be the same as that of the Monitor Tool.

When there are reference variables in the Monitor, you can save the graph, zoom in and see numerical values. Before other actions are available, you have to select *Remove Reference Graph* from the **Monitor** menu of the Tool.

Print a Graph

The monitor display can be printed to the default printer using the Print command from the **File** menu or by selecting the **Print**( ) button on the Monitor toolbar. The printer settings can be changed using the *File/Print Setup* command.

Copy to the Clipboard

The graphs on an active monitor window can be copied to the clipboard using the *Edit/Copy* command from the Menubar.

Clear the Graph Display

You can clear the graph of the Monitor Tool by using the *Clear Graph* command from the **Monitor** menu.

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Chapter 8 - Signals and Parameters Tool

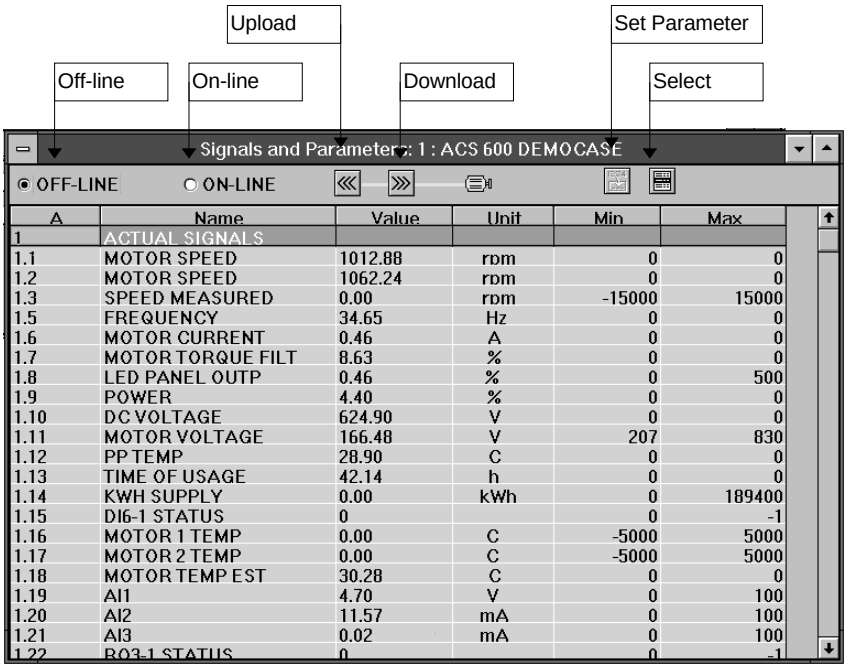
Overview

This chapter describes the available Signal and Parameter handling functions of Drives Window.

Starting Signals and Parameters Tool

Signals and Parameters button

The Signals and Parameters Tool is started by selecting the **Signals and Parameters** button on the toolbar or by clicking the right mouse button on the System Configuration window and selecting the *Signals and Parameters* command from the pop-up menu. You can open individual Signal and Parameter Tools for each drive in the system at the same time.



A	Name	Value	Unit	Min	Max
1	ACTUAL SIGNALS				
1.1	MOTOR SPEED	1012.88	rpm	0	0
1.2	MOTOR SPEED	1062.24	rpm	0	0
1.3	SPEED MEASURED	0.00	rpm	-15000	15000
1.5	FREQUENCY	34.65	Hz	0	0
1.6	MOTOR CURRENT	0.46	A	0	0
1.7	MOTOR TORQUE FILT	8.63	%	0	0
1.8	LED PANEL OUTP	0.46	%	0	500
1.9	POWER	4.40	%	0	0
1.10	DC VOLTAGE	624.90	V	0	0
1.11	MOTOR VOLTAGE	166.48	V	207	830
1.12	PP TEMP	28.90	C	0	0
1.13	TIME OF USAGE	42.14	h	0	0
1.14	KWH SUPPLY	0.00	kWh	0	189400
1.15	DI6-1 STATUS	0		0	-1
1.16	MOTOR 1 TEMP	0.00	C	-5000	5000
1.17	MOTOR 2 TEMP	0.00	C	-5000	5000
1.18	MOTOR TEMP EST	30.28	C	0	0
1.19	AI1	4.70	V	0	100
1.20	AI2	11.57	mA	0	100
1.21	AI3	0.02	mA	0	100
1.22	RO3-1 STATUS	0		0	-1

Figure 8 - 1 Signals and Parameters Tool

The Signal and Parameter information is displayed in a list as shown in Figure 8 - 1. As the default, only the group headings are loaded. By double-clicking a heading, the parameters or signals of the group are loaded and displayed. By double-clicking the heading again, the group is closed, but not unloaded. If you open a closed group that is already loaded, the contents are not reloaded, but displayed as they were when last loaded.

If you want to read the whole table at once, select *Options and Confirmation* from the **Options** menu and set option "Take the whole parameter table" active. The following information is available for each signal and parameter:

- The identification number of the group or the parameter
- Name
- Actual Value
- Unit
- Minimum value
- Maximum value

How To...

This section describes how to perform the functions of this tool.

Switch to the On/Off-Line Mode

You can use the Signals and Parameters Tool either in on-line or off-line mode. The Signals and Parameters Tool is always started in off-line mode.

The selection between on-line and off-line modes is done by selecting the **ON-LINE** or **OFF-LINE** option button from the Signals and Parameters toolbar or by selecting the command from the **Signals and Parameters** menu.

Off-line Mode

When Drives Window is in the off-line mode, the user can change values without having these changes effect the drive until the user performs the *download* command or goes to the on-line mode.

On-line Mode

When Drives Window is in the on-line mode, the signal and parameter values are continuously updated from the drive. If a parameter value is changed while in the on-line mode, the new value is sent to the drive automatically.

When you select the on-line mode, Drives Windows will verify that you really want to proceed and shows the following message box:

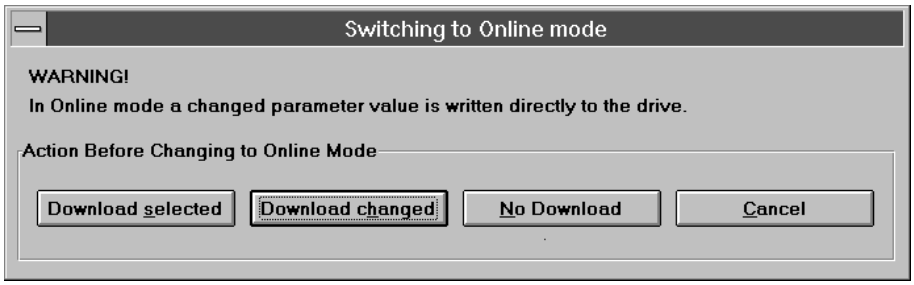


Figure 8 - 2 Switching to ON-LINE

You can now download selected parameters to drive, download only the changed parameters, download none of the parameters, or cancel the action.

Select a Parameter

A parameter can be selected from the signal and parameter list by clicking with the left mouse button on the parameter or by scrolling through the list using the up and down arrow keys. The selected signal or parameter is then highlighted for the user.

Selecting a Signal or a Parameter Subset

You can select a subset of the signals and parameters by clicking on the *Select* command from the **Signals and Parameters** menu or by clicking the **Select Subset** ( ) button on the Signals and Parameters toolbar. The following dialogue is displayed:

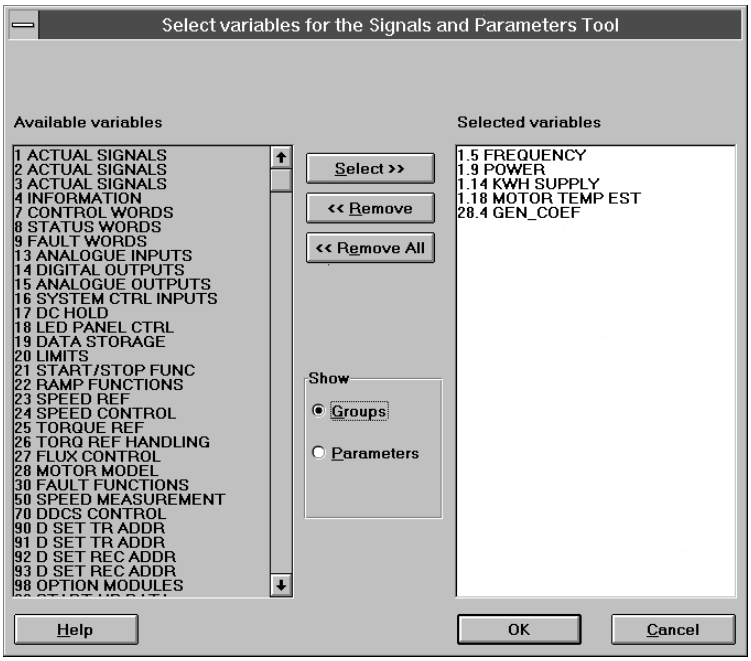


Figure 8 - 3 Signal and Parameter Selection dialogue.

At first, the left column shows all of the groups that are available. By douple-clicking a group or by selecting a group and choosing “Parameters” you can see the signals or parameters of the selected group.

The **Select** button is used to move the signals and parameters from the “Available Variables’ list to the” Selected Variables’ list. The **Remove** button removes a signal or parameter from the ‘Selected Variables’ list. If you want to remove all of the signals and parameters use the **Remove All** command.

Change the Parameter Values

The parameter values can be changed in the *Change Value* -dialogue. You can display the *Change Value* -dialogue by:

- clicking the Set Value button
- double-clicking the left mouse button on the item
- selecting the *Set Value*... command from the **Signals and Parameters** menu or from the pop-up menu (the pop-up menu is displayed by clicking the right mouse button on the screen);
- selecting the item and pressing the **ENTER**-key.

The following information is available for numerical parameters:

- Group and Parameter ID Number
- Parameter Name
- Minimum and Maximum values
- Type
- Current value
- Unit

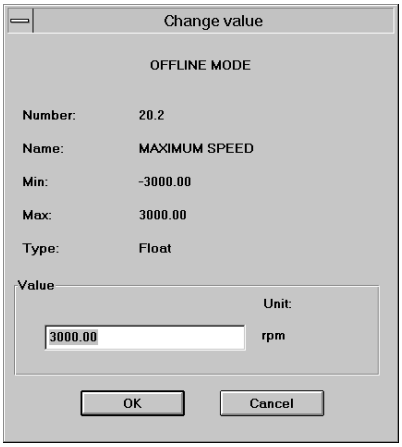


Figure 8 - 4 Change Value dialogue for Numerical Parameter

All numerical values can be changed by typing the new value in the Value field. With values of type real or integer it is also possible to use scrollbar below the value field to set the new value.

The following information is available for parameters type of boolean:

- Group and Parameter ID Number
- Parameter Name
- Type
- Current value
- Option buttons

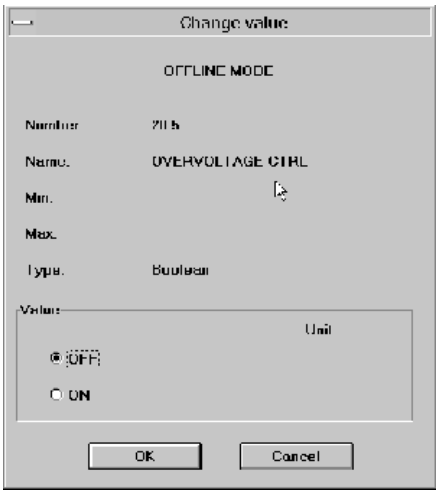


Figure 8 - 5 Change Value dialogue for Parameter type of Boolean

The following information is available for parameters type of text:

- Group and Parameter ID Number
- Parameter Name
- Minimum and Maximum values
- Type
- Current value and list of possible selections

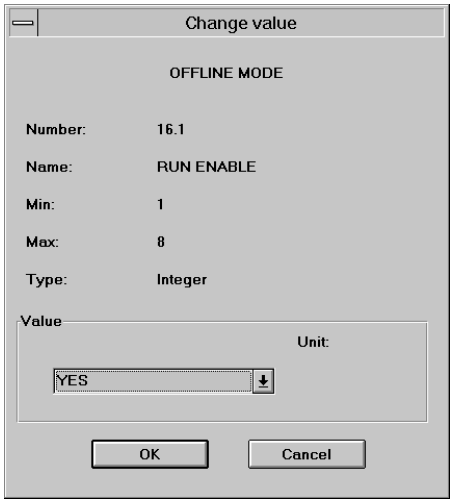


Figure 8 - 6 Change Value dialogue for Text Parameter

The text ON-LINE or OFF-LINE in the center of the dialogue indicates which mode you are working in. Pressing the **Cancel** button, cancels the parameter setting and closes the dialogue. A new parameter value is accepted when the **OK** button is selected. If the parameter value is changed in the on-line mode, Drives Window prompts the user for confirmation before sending the new parameter value to the drive. This confirmation can be removed by deselecting the *Parameter Change On-line* option from the **Options** menu.

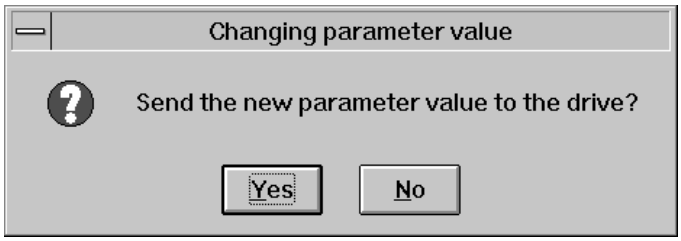


Figure 8 - 7 Parameter change verification in on-line mode.

If you select **YES**, the new setting is sent to the drive; otherwise the change is cancelled.

In off-line mode, the value is changed in the parameter list but it is not sent to the drive. All of the changed values are marked with two asterisks (**). When you try to close the Signals and Parameters Tool without saving the changes to a file or downloading them to the drive, the program confirms which action to perform:

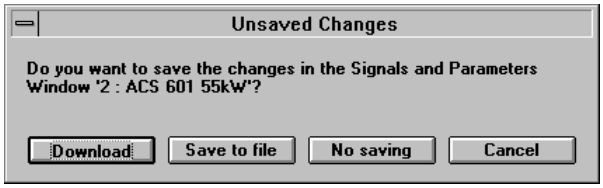


Figure 8 - 8 Unsaved Parameter Handling

Upload and Download Parameter Values

Upload and download commands are used for transferring parameter values between the Drives Window program and the drive. You can begin the upload or download functions by selecting the corresponding command from the **Signals and Parameters** menu or by clicking the **Upload Values** (⏪) or the **Download Values** (⏩) buttons on the toolbar.

Upload Values

The upload function is used to read all of the signal and parameter values from the selected drive into the Drives Window program. If you have selected a subset of signals and parameters, only the selected items are updated.

Download Values

The download function is used to write the parameter values on the active Signals and Parameters Tool of the Drives Window down to the drive. After giving the download command the Drives Window will prompt the user to confirm which of the parameters will be downloaded.

WARNING! The parameters can only be uploaded and downloaded between drives of the same type and with compatible software versions.

Save a Signal and Parameter List to a File

The displayed signal and parameter list can be saved to a file using the *Save* and *Save As* commands from the **File** menu. The type and version of the drive are also saved to the file in order to maintain compatibility in cases where the saved parameter set is downloaded to another drive. A header for the parameter file can be added before saving. The Signals and Parameters Tool file extension is *.dwp*.

Read Signals and Parameters from a File

Previously saved parameter files can be opened by selecting the **Open**(📂) button on the toolbar or by using the *Open* command from the **File** menu. The Signals and Parameters Tool file extension is *.dwp*.

Download Values After Opening a File

After selecting a file, a new Signals and Parameters Tool window is opened and the contents of the selected file are displayed in this window. If you want to download the parameter values of the file to a drive, select the **Download Values** (») button or the command from the **Signals and Parameters** menu. In the Download dialog box, select the target which is to receive the new parameter list. If the download function is selected, Drives Window first checks the compatibility between the parameter set in the active window and the selected drive before starting the download function.

Print a Signal and Parameter List

The displayed signal and parameter list can be printed to the default Windows printer by using the *Print* command [Ctrl+P] from the **File** menu or clicking the **Print**() button on the toolbar. Printer settings can be changed using the *Print Setup* command from the **File** menu.

Compare the Parameters

The parameter set in the active signals and parameter tool can be compared to a parameter set in a saved file. First select the **Compare** command from the **File** menu. Drives Window then prompts the user to choose the file which the signals and parameters are to be compared against. The results of the comparison are then displayed in a separate result window. You can print the results by selecting the *Print* command from the **File** menu or by selecting the **Print**() button on the toolbar. The result is always saved to a file **dwpsdiff.log.**

Copy to the Clipboard

The signal and parameter list of the active window can be copied in text format to the Windows clipboard by using the **Copy** command from the **Edit** menu.

Find a Parameter

When viewing the signal and parameter list, the user can search for a specific parameter by using the **Find** command from the **Edit** menu. The following dialogue is then displayed:

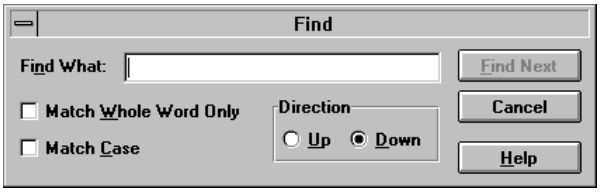


Figure 8 - 9 Find Dialog

The user can then type in a text string to be found. After entering the text string, the **Find Next** function searches for the next matching text from all of the cells in the active window.

Copy a Parameter Set from a Drive to Another

To copy a complete set or a subset of parameters from one drive (source) to another (destination), perform the following steps:

1. Select the source drive as the default drive.
2. Open the Signals and Parameters Tool. The complete signal and parameter list is uploaded automatically from the source drive.
3. Select all or a subset of the signals and parameters.
4. Modify the parameter values if necessary.
5. Select the Download command from the **Signals and Parameters** menu.
6. Chose the new target for downloading the parameter set.

Customize the Display

You can select which columns you want to display from the View/Columns menu. If you don't need all of the information available, you can hide the unnecessary columns. The width of the column can also be changed by first moving the mouse over the column separator until the mouse icon changes. By holding down the left mouse button, the user can drag the separator line to the right or left until the column is the desired width.

You can also customize the value viewing forms for integers and packed booleans. First select a parameter from the list. Then by pressing keys 'h', 'd' and 'b' you can switch between hexadecimal, decimal and boolean forms.

Open Uploaded Groups

All of the groups with uploaded parameters can be opened.
Note: group parameters are not uploaded with this command!

Close All Groups

A good way of having an overview of the AMC table is to close all groups. Thus only group headings remain visible. Groups are not unloaded.

Update Group

By updating a group you can have up-to-date information of the group: the group contents are reloaded.

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Chapter 9 - Data Logger Tool

Overview

This chapter describes how to set up the Data Loggers located in the ABB product. This chapter also details how to display the contents of the Data Loggers by using Drives Window.

Starting the Data Logger Tool

Data Logger Tool button

The Data Logger Tool is used for controlling the data loggers of the drive and for displaying their contents. The Data Logger Tool is started by clicking the **Data Logger Tool** button on the toolbar or using the *Data Logger* command from the **Tools** menu.

You can open as many Data Logger Tools as there are Data Loggers in the applicable drive. Previously saved files can also be viewed with the Data Logger Tool.

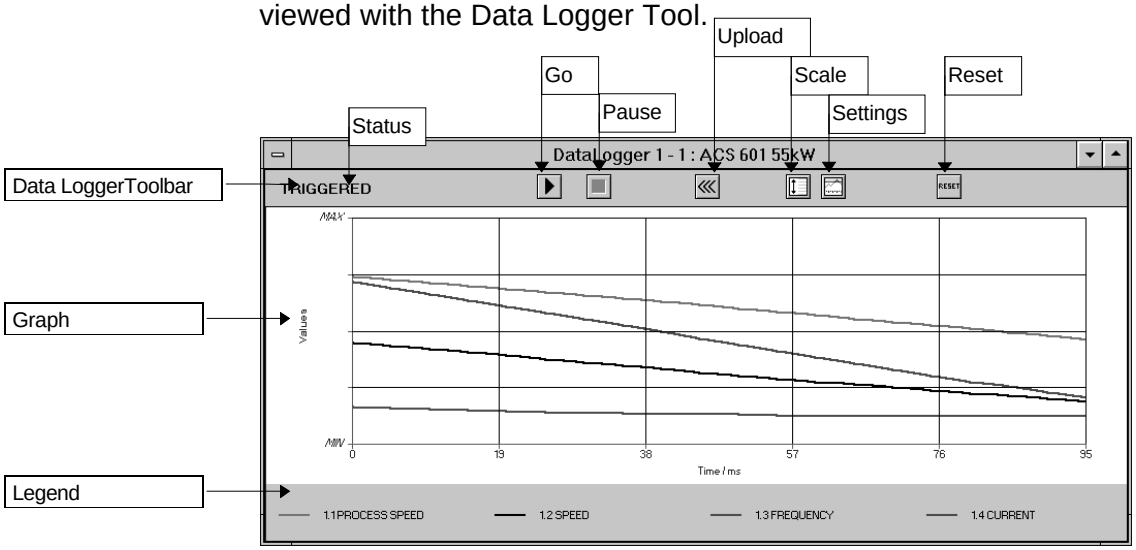

Figure 9 - 1 Data Logger Tool

The Data Logger bar provides you with quick access to the functions of the Data Logger Tool. Both the Data Logger bar and the Legend can be hidden from the **View** menu. The **Data Logger** menu includes the Data Logger Tool specific commands. If the Data Logger is initialized, the settings has been read from the drive.

Status of the Data Logger

Data Logger status string is present at the top-left corner of the Data Logger Tool window at all times.

UNINITIALIZED	Data Logger has not been initialized. Select the variables and set the triggering conditions.
READY	Data Logger has been initialized and is ready for start command.
COLLECTING	Data Logger is collecting samples.
TRIGGERED	The triggering conditions have been fulfilled and the samples are ready for upload. This is done automatically by the Drives Window software.
FILLED	The reading buffer of the data logger has been filled after the triggering.

How To...

This section describes how to perform the functions of this tool.

Select Variables for the Data Logger

When you start the Data Logger Tool and the data logger is uninitialized, you are presented with the variable selection dialogue. See paragraph Selecting a Signal or a Parameter Subset in Chapter 6 for more information. You can select up to a maximum of 4 different variables for each Data Logger. After you have selected the variables you must adjust the settings of the Data Logger.

Adjust the Settings of the Data Logger

The Data Logger settings dialogue is displayed by clicking the **Settings**() button on the Data Logger bar or by using the *Settings* command from the **Data Logger** menu. How to set the settings for the specific drive is described later in this chapter.

Set the Data Logger Window Scaling

You can scale the y-axis for each data logger window and also for each variable separately. The scaling is done by setting the minimum and maximum values displayed at the top and the bottom of the graph, respectively. As a default, the monitor scaling is set to auto scale. The *Auto scale* command automatically determines the minimum and maximum value for each item, and sets the scale limits to these values. To manually scale the data logger variables, click the **Scale**() button on the Data Logger bar or use the *Scaling* command from the **Data Logger** menu.

Change the Display Mode

The contents of the Data Logger can be presented in numerical form as well as the default graphical display. The actual sampled values of logged variables can be viewed by selecting the *Numerical Display* command from the **Data Logger** menu.

Start and Stop the Data Logger

The Data Logger is started by clicking the **Start**( ) button and stopped by clicking the **Stop**( ) button on the Data Logger bar. You can also use the respective *Start* and *Stop* commands from the Data Logger pop-up menu.

Upload the Values in the Data Logger

The current values in the Data Logger can be uploaded by clicking the **Upload**( ) button on the Data Logger bar or using the *Read From Drive* command from the **Data Logger** menu.

Reset the Pointers of the Data Logger

The read and write pointers of the data logger can be reset by clicking the **Reset**( ) button on the Data Logger bar or by using the *Reset* command from the **Data Logger** menu.

Zoom on a Specific Viewing Area

The *Zoom In* command lets you see the graph signals in greater detail. To zoom-in on a specific area of the graph, use the following procedure:

1. If the monitor is running, stop the monitor by clicking the **Pause**( ) button or by pressing the short-cut key **F3**.

2. There are two Zoom selections on the **View** menu: *Zoom In* and *Zoom Out* (also on the pop-up menu). Select *Zoom In* or press short-cut key **F4**. Point the cursor's crosshairs at any corner of the retangular area that you want to enlarge.

3. To select a square, press and hold the left mouse button. Drag the cursor to the opposite corner of the rectange.

4. Release the mouse button.

If you are using the keyboard:

1. If the monitor is running, stop the monitor by pressing the short-cut key **F3**.

2. There are two Zoom selections on the **View** menu: *Zoom In* and *Zoom Out.* Select *Zoom In* or press short-cut key **F4**. Point the cursor's crosshairs at any corner of the retangular area that you want to enlarge. You can do that by the keyboard cursor keys.

3. To select a square, press and hold the **Shift**-key and drag the cursor to the opposite corner of the rectange by the cursor keys.

4. Release the **Shift**-key.

To continue monitoring, you have to first select *Zoom Out* command from the **View** menu.

Numerical Values

Numerical temporary values can be seen by clicking the Data Logger Tool window with the left mouse button.

Save Data to a File

The contents of the data logger can be saved to a file. To save the contents, use the *Save As...* command from **File** menu or click the **Save**() button on the toolbar. You can also write a header line for the data file before saving. The extension of the Data Logger Tool file is *.dwd.*

Data logger files contain data in a scaled form. If you want to save the data unscaled, you should copy the temporary DWDATLOG.TMP file to your own directory after each data logger upload. You can also view this file by selecting *Numerical Display...* from the **Data Logger** menu.

Note: The DWDATLOG.TMP file is rewritten after every upload.

Read Data from a File

You can restore saved data from a file by clicking the **Open**() button on the toolbar or by using the *Open* command from the **File** menu. The extension of the Data Logger Tool file is *.dwd.*

Using a File as a Reference Graph

You can use saved Data Logger files as reference graphs with the actual Data Logger Tool in the same way as in the Monitor Tool (see Monitor).

Note: You can not mix Monitor and Data Logger files.

Print the Display

To print the display of the Data Logger Tool click the **Print**() button on the toolbar or select the *Print* command from the **File** menu.

Copy the Display to the Clipboard

The display on an active window can be copied to the clipboard using the *Edit/Copy* command from the menu.

Data Logger Settings

Data Logger Settings are Target specific. In this chapter the settings for the ACS 600 family are described.

When you want to view an initialized data logger, the current settings are uploaded and a filled Data Logger Settings dialog is shown. Now you can change the settings yourself.

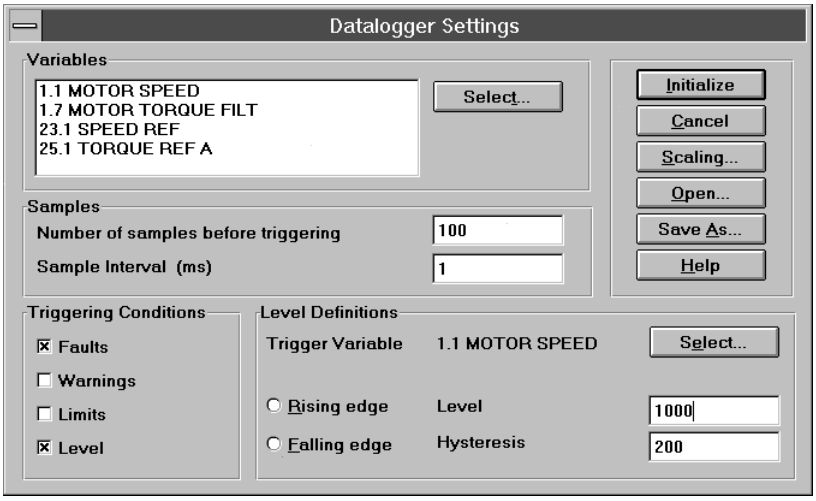

Figure 9 - 2 Data Logger Settings dialogue

Variables

To change the variables which are logged, click the **Select** button on the Data Logger Settings dialogue. In ACS 600, there can be up to four different variables in the data logger. You can also view packed boolean bits.

Triggering conditions

The Data Loggers of ACS 600 can be set to trigger on faults, warnings, limits, or defined levels of the selected variable. The default triggering is manual.

Table 9 - 1

Faults	The Data Logger stops collecting samples when a fault occurs in the drive. For more information on the faults refer to the ACS 600 Programming Manual
Warnings	The Data Logger stops collecting samples when a warning occurs in the drive. For more information on the warnings refer to the ACS 600 Programming Manual.
Limits	The Data Logger stops collecting samples when the any of the set limits is reached in the drive. For more information on the limits refer to the ACS 600 Programming Manual.
Level	If you select level triggering you must select a triggering variable. You also set level, hysteresis and select falling or rising edge of the variable to trigger the Data Logger.

Setting the Samples Before Triggering

The number of samples collected before triggering can be set by entering the value into the respective field in the Data Logger Settings dialogue. The value entered signifies when the logging has stopped (due to a triggered event), the logger will contain the specified number of samples before the triggering moment and the rest of the samples are after the triggering moment.

Setting Sample Interval

The sample interval can be set by entering the value in the respective field in the Data Logger Settings dialogue. The sample interval is set in multiples of 1 ms.

Scaling...

To scale the y-axis of the data logger window, click the **Scaling...** button.

Open...

The saved settings can be restored by clicking the **Open** button on the Datalogger Settings dialogue.

Save As...

To save the Datalogger settings to a file, click the **Save As** button on the Datalogger Settings dialogue. The extension of the Data Logger settings file is *.dls.*

Help

The **Help** button opens the context-sensitive help file.

Cancel

The **Cancel** button restores the situation as it was when the Settings dialog was shown.

Note: If you have changed the variable set, it is not possible to cancel the Settings any more.

Initialize

The Initialize button initializes the data logger with new settings.

Chapter 10 - Event Logger Tool

Overview

This chapter describes how to upload the contents of the event logger from the ABB product and display the contents with Drives Window.

Starting the Event Logger Tool

Event Logger Tool button

The Event Logger Tool is used for displaying the contents of the Event Logger of the selected drive. The information contained in the Event Logger depends on the target drive. A description of the event and the total power-on time before the event is available.

The Event Logger Tool is started by clicking the **Event Logger Tool** button on the toolbar or by selecting the *Event Logger* command from the **Tools** menu. Drives Window displays the contents of the Event Logger of the default drive.

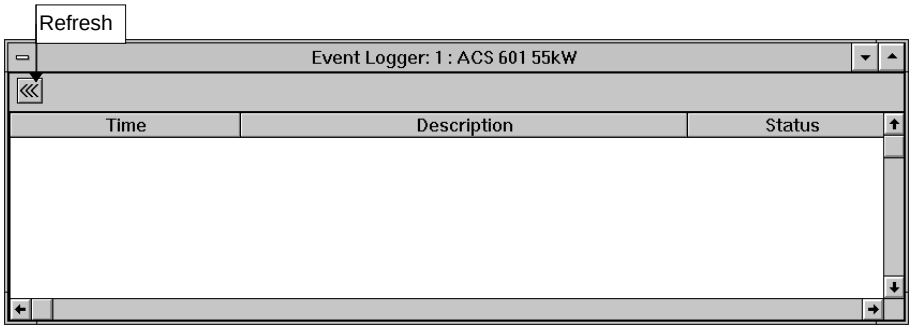

Figure 10 - 1 Event Logger Tool

The Event Logger of the ACS 600

It depents on your application which events are written to the Event Logger. Faults and warnings are written to a separate fault logger. Refer to *Chapter 11 - Fault Logger Tool* in this manual. The standard application of ACS600 doesen't write any events.

How To...

This section describes how to perform the functions of this tool.

Refresh the Display

The contents of the Event Logger Tool display can be refreshed by clicking the **Refresh**() button on the Event Logger bar or by using the *Refresh* command from the **Event Logger** menu. Drives Window then reads the current contents of the Event Logger from the drive to the event list on the display.

Save the Event List to a File

To save the displayed event list, click the **Save**() button on the toolbar or use the *Save As*.. command from **File** menu. A header line can be added to this event file before saving. The Event Logger Tool file extension is .*dwe*.

Read Events from a File

You can reload an event list from a file by clicking the **Open**() button on the toolbar or by using the *Open* command from the **File** menu. The Event Logger Tool file extension is .*dwe*.

Copy the Event List to the Clipboard

The event list of the active window can be copied to the clipboard using the *Copy* command from the **Edit** menu.

Chapter 11 - Fault Logger Tool

Overview

This chapter describes how to upload the contents of the fault logger of the ABB product and display the contents with Drives Window.

Starting the Fault Logger Tool

Fault Logger Tool button

The Fault Logger Tool is used for displaying the contents of the fault logger of the selected drive. The fault logger of the ACS 600 includes information of the fifteen most recent faults and warnings in the drive. The name of the fault or warning and the total power-on time before the fault or warning occurred is available. The type column indicates whether the event described is a fault or a warning.

The Fault Logger Tool can be started by clicking the **Fault Logger Tool** button on the toolbar or using the *Fault Logger* command from the **Tools** menu. Drives Window displays the Fault Logger of the default drive.

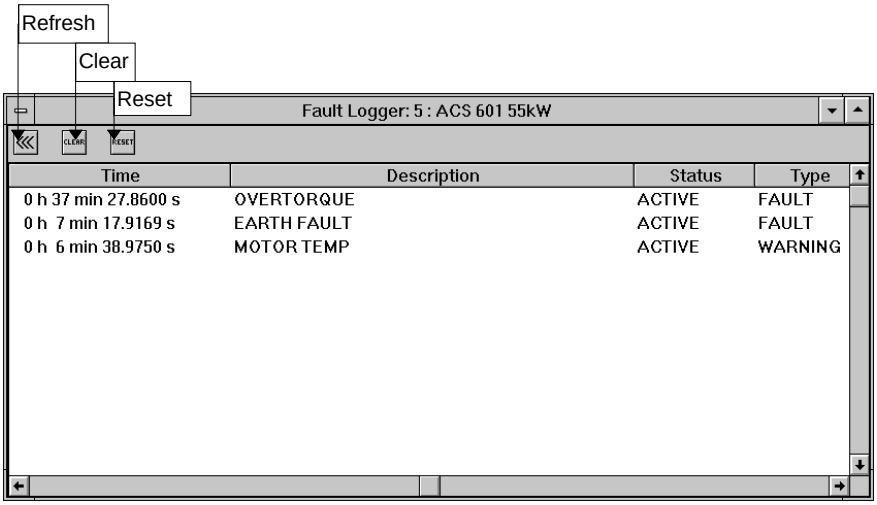

Figure 11 - 1 Fault Logger Tool

How To...

This section describes how to perform the functions of this tool.

Reset an Active Fault

An active fault can be reset by pressing the **Reset**( ) button either on the Drives Panel or on the Fault Logger toolbar. The *Reset* command can also be found from the **Fault Logger** menu.

Clear the Fault Logger

The contents of the Fault Logger can be cleared by pressing the **Clear**( ) button on the Fault Logger toolbar or by selecting the *Clear All* command from the **Fault Logger** menu.

Refresh the Display

The contents of the Fault Logger Tool display can be refreshed by clicking the **Refresh**() button on the Fault Logger bar or by using the *Refresh* command from the Fault Logger or pop-up menu. Drives Window then reads the latest content of the Fault Logger from the drive to the fault list on the display.

View Faults and Warnings

You can select whether to display faults, warnings, or both on the fault list. This can be done from the **View** menu with the commands Faults and Warnings. A check mark next to the respective menu command indicates whether the item is shown or not.

Save the Fault List to a File

To save the fault list to a file, click the **Save**() button on the toolbar or use the *Save As* command from **File** menu. A header line can also be included for the fault list file before saving.

Read Faults from a File

You can reload a fault list from a file by clicking the **Open**() button on the toolbar or by using the *Open* command from the **File** menu. The Fault Logger Tool file extension is .dwf.

Copy the Event List to the Clipboard

The fault list of the active window can be copied to the clipboard using the *Copy* command from the **Edit** menu.

Chapter 12 - Application Tool

Overview

This chapter describes how to display the symbols of an application and how to control the application programs located inside the ABB product.

Starting the Application Tool

Application Tool button

The Application Tool is used for downloading and debugging applications created using AdvaBuild Function Chart Builder (FCB). You can view the application symbols (i.e. inputs and outputs of function blocks) on-line and download new applications.

The Application Tool can be started for the selected target device by clicking the **Application Tool** () button on the toolbar or by using the *Application Tool* command from the **Tools** menu.

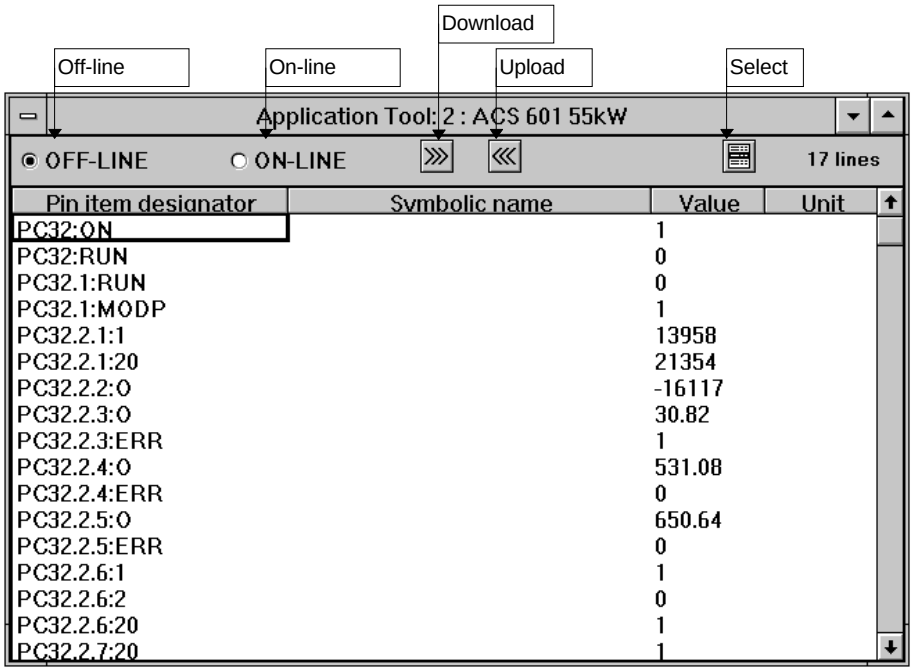

Figure 12 - 1 Application Tool

Figure 12 -1 displays the Application Tool. The menu **Application** includes commands used in handling applications.

After starting the Application Tool, Drives Window prompts you to select the symbol file to be opened. This symbol file is a file (*.x01) which was created by the AdvaBuild Function Chart Builder while generating target code for ACS600. For more information refer to *AdvaBuild Function Chart Builder User's Manual*.

How To...

This section describes how to perform the functions of this tool.

Select Subset of Symbols

You can select a subset of symbols to the display by clicking the **Symbols**(▦) button on the Application Bar or using the *Select Symbols...* command from the **Application** menu. The selection dialogue is displayed. You can select the subset as described in Chapter 8 (selecting a signal or a Parameter Subset) of this manual.

Define the Mask

The Drives Window prompts you to select a mask after you have selected the symbol table file. The mask is used for selecting which symbols of your application to display. It depends on your application which kind of masks to set. Figure 12-2 displays an example of mask selection. Mask may be changed using the *Define Mask* command from the **View** menu.

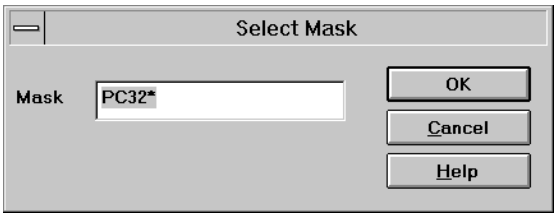

Figure 12 - 2 Selecting the Mask

Set Force Value

The symbol values can be changed in the *Change Value* -dialogue. You can display the *Change Value* -dialogue by:

- double-clicking the left mouse button on the item
- selecting the *Set Force Value*... command from the **Application** menu or from the pop-up menu (the pop-up menu is displayed by clicking the right mouse button on the screen);
- selecting the item and pressing the **ENTER**-key.

The following information is available for numerical symbols:

- Task Name
- Symbol Name
- Current value
- Minimum and Maximum values
- Type and Unit

All numerical values can be changed by typing the new value in the Value field. With values of type real it is also possible to use scrollbar below the value field to set the new value.

The following information is available for symbols type of boolean:

- Task Name
- Symbol Name
- Current value
- Type
- Option buttons

The following information is available for symbols type of text:

- Task Name
- Symbol Name
- Minimum and Maximum values
- Current value
- Type and Unit
- List of possible selections.

The text ON-LINE or OFF-LINE in the center of the dialogue indicates which mode you are working in. Pressing the **Cancel** button, cancels the item setting and closes the dialogue. A new value is accepted when the **OK** button is selected. If the value is changed in the on-line mode, Drives Window prompts the user for confirmation before sending the new value to the target device. This confirmation can be removed by deselecting the *Parameter value change in online mode* -option from the *Confirmation* dialog.

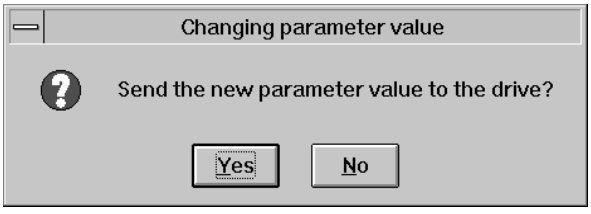

Figure 12 - 3 Parameter change verification in on-line mode.

If you select **YES**, the new value is sent down to the target device, otherwise the change is cancelled.

In off-line mode, the value is changed in the list but it is not sent to the target device. All of the changed values are marked with two asterisk (**). When you try to close the tool without saving the changes to a file or downloading them to the target device, the program confirms which action to perform:

Figure 12 - 3 Unsaved Changes

Upload and Download Symbol Table.

Upload and download commands are used for transferring symbol values between the Drives Window program and the target device.

Upload Values

The **Upload Values** command is used for updating the values of symbols from the selected target device. For updating the values click the **Upload button** on the Application Toolbar or choose the *Upload Values* command from the **Application** menu.

Download Force Value(s)...

The download function is used to write all of the symbol values on the active symbol table down to the target device. After giving the download command the following dialogue is displayed:

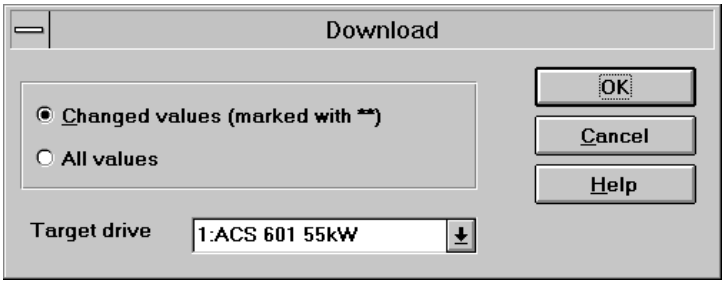

Figure 12 - 4 Verify Download

WARNING! The symbols can only be uploaded and downloaded between target devices of the same type and with compatible software versions. Otherwise Drives Window will display a warning (See: Chapter 4 - User Interface: Version Checking)

Delete Force Values

Use the *Delete Force Values* command to replace changed symbol values with their initial values.

Download an Application

The Application download function is used for downloading an application program to a target device. You can start *Application Download* by selecting *Application Download* command from the **Application** menu.

If you select the *Application Download* command, a dialogue will be displayed for selecting the application file (*.xxx) to be downloaded. The selected files will be downloaded to the permanent memory of the selected target device. Before downloading, the Drives Window will close all of the open tools for the selected target device. This is necessary because downloading a new application may change the configuration of the signal and parameter set and the information in open tools may not be valid for the new application. After the download has been completed, a *Reboot* command will be sent to the target device in order to start the application.

Note: The function block library version used for creating the application must match with the version on the target device.

On/Off-line Mode - Application Tool

While using the Application Tool you can work in either on-line or off-line Mode. The difference between these two modes and how to select the mode is described below. When you start the Application Tool it is in off-line Mode.

On-line Mode

When Drives Window is in the on-line mode, the symbol values are continuously updated from the target device. If a symbol value is changed while in the on-line mode, the new value is sent to the target device automatically. On-line mode can be selected by pressing the **ON-LINE** option button or by selecting the '*Change to On-line*' -command from the **Application** menu. '*Change to On-line*' -command is visible only when you are in off-line Mode.

When you select the on-line mode, Drives Windows will verify that you really want to proceed and shows the dialog box:

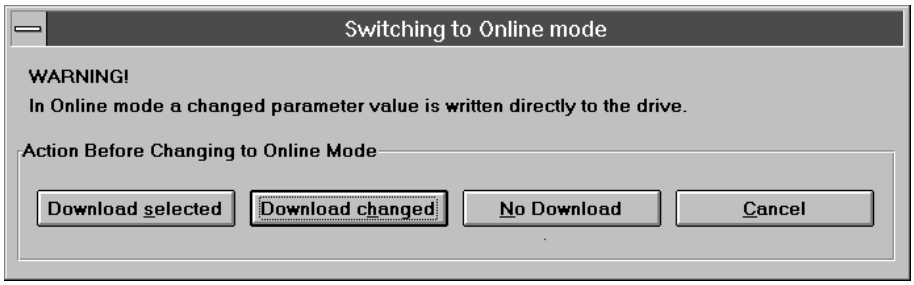

Figure 12 - 5 Switching to On-line

The confirmation can be removed by deselecting the *Switching to Online mode* -option from the Confirmation dialog.

You can download all of the symbol values to target device, download only the changed values, download none of the values, or cancel the action.

Off-line Mode

In off-line mode the symbol values are not updated to the Drives Window display constantly. To update the values you have to use separate *Download Force Value(s)...* command from the **Application** menu.

Off-line mode can be selected by pressing the **OFF-LINE** option button or by clicking the '*Change to Off-line*' -command from the **Application** menu. The '*Change to Off-line*' -command is visible only when you are in on-line Mode.

Selecting Data/Columns to be Viewed

The data of each symbol can be displayed in separate columns. To hide/display data select or unselect items from the *View/Columns* menu.

Save a Symbol Table to a File

To save the displayed symbol table and the symbol values click the **Save button** on the Toolbar or use the *Save As*... command from **File** menu. The Application Tool file extension is .dwa.

Read Symbols from a File

Symbol tables which are saved to a file using the Drives Window format (**.dwa**) can be retrieved by using the Open command from the **File** menu or clicking the **Open button** on the Application Toolbar. Select the file you want to retrieve, and a new application window is opened with the contents of the file displayed.

Compare the Symbol Tables

The symbol table in an active Application tool window can be compared to a symbol table in a saved file. First select the *Compare* command from the **File** menu. Drives Window then prompts the user to choose the file which the parameters are to be compared against. The results of the comparison are then displayed in a separate result window. You can print the results by selecting the *Print...* command from the **File** menu or clicking the **Print button** on the Toolbar. The result is always saved to a file **dwatdiff.log**.

Copy the Symbol Subset to the Clipboard

The display on an active window can be copied in text format to the clipboard by using the *Copy* command from the **Edit** menu.

Print the Symbol Subset

The displayed symbol subset can be printed to the default printer by clicking the **Print**() button or by using the *Print...* command from the **File** menu.

Get Information About the Target Device

The *About Target Device* command gives you information on the selected target device. It lists:

- Version information of the application saved to the selected file.
- Version information of the current application of the selected target device
- System software version
- Function block library version information

You find the *About Target Device* command from the **Application** menu or from the pop-up menu displayed while clicking the right mouse button.

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APPENDIX A- Version Control

System Software v2.8

Drives Window v1.2 does not support ACS600 with System Software v2.8 or earlier.

System Software v3.0

If you are using Drives Window v1.2 for ACS600 with System Software v3.0, you must note the following:

1. Local control from Drives Window is possible only if the Control Panel is in Remote mode. Panel can still always get the control of the drive. The inactive local button of previous Drives Window versions is removed.
2. Coast Stop is not available.
3. Application Tool is not available.
4. File Upload/Download is not available.
5. Actual direction is not shown.
6. Panel reference is not shown in the Drives Panel. Always stop the drive before turning panel to Remote mode.

System Software v4.2

All features mentioned in this manual, if not otherwised stated, are available for ACC600, ACS600, ACF600, ACN600 and ACP600 with System Software v4.2 or corresponding version.

Previous Drives Window Files

Previous Drives Window files are compatible with Drives Window v1.2.

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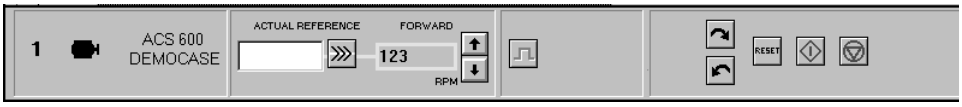
APPENDIX B- Drives Panels

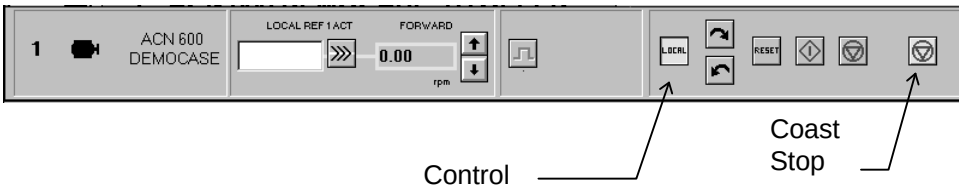
System Software v3.0

Drives Panel for ACS600 Standard with System Software v3.0:



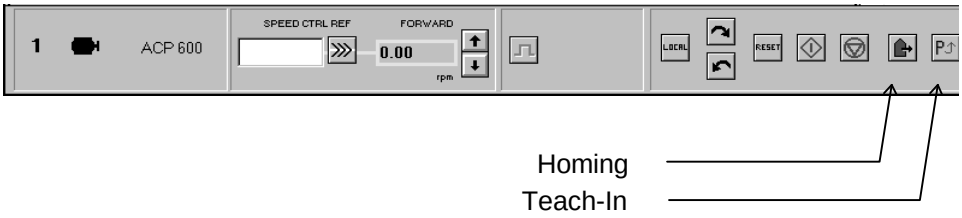
System Software v4.x

Drives Panel for ACS600 Freely Programmable with System Software v4.2, ACF600 Pump and Fan Drive with System Software v4.02 and ACS600 MultiDrive (ACN600) with System Software v4.2:



System Software v1.0 (ACP600)

Drives Panel for ACP600 Motion Drive with System Software v1.0:



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APPENDIX C - CDW.INI file

General

Drives Window v1.2 reads through, when started, the CDW.INI file which is during the Drives Window installation created in the WINDOWS directory. In the CDW.INI file there are two sections handling the Target identification

Target Identification

First, there is a section called [TargetDrivers] in which a Target Driver DLL for each Target type is set. Names used must match the real *product names*, i.e. if an ACS600 is renamed to be something like GCC600 it must appear as an ACS600 in the [TargetDrivers] section. Each Target type must have its own line, like

ACS600=C:\ABBTOOLS\DRIWIN\DWACS600.DLL

Special Target Names

In case a product is sold with a special name Drives Window must be made aware of the change before the Target can be identified. For this purpose there is a [TargetEquals] section in the CDW.INI file. In this section specific names are identified with actual product names. For example, previously mentioned GCC600 requires line

GCC600=ACS600

just under the [TargetEquals] heading.

Product Names

As products following names are defined:

- *ACS600* Standard or Freely Programmable
- *ACN600* ACS600 MultiDrive Inverter
- *ACF600* ACS600 Pump and Fan Drive
- *ACP600* ACS600 Motion Drive

Of these names Drives Window uses only the first four (4) letters. Thus ACS601 and ACS602 would get the similar handling.

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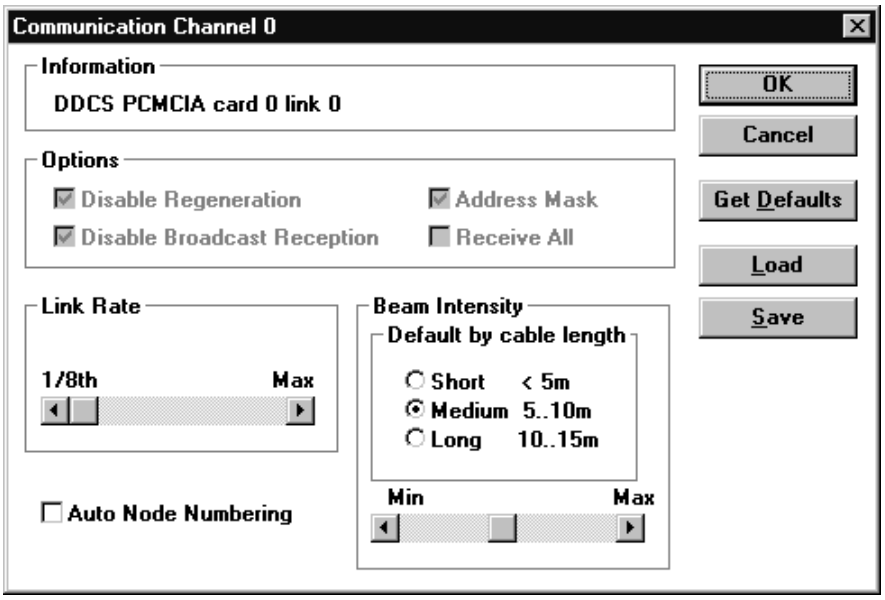
APPENDIX D - DDCS Communication

DDCS Communication Channel Dialog



Use the Communication Channel Dialog ...

to see and change the communication channel settings

for automatic node numbering of the target devices on the channel

Communication Channel Dialog Caption

Logical channel number of the Communication Channel is shown on the caption. Channels are numbered during initialization, starting from 0.

Information Group

In the information group you can see the text which identifies the channel hardware.

Options Group

In the Options group you can see the DDCC chip settings; these are not changeable.

Link Rate Group

In the Rate group you can see the baud rate used on the channel.

The speed may be set in steps 1/8, 1/4, 1/2, of the max speed, or the max speed.

Currently the max speed is 8 MBPS, i.e. steps are 1, 2, 4, 8 MBPS respectively. The default 1 MBPS is used.

***Note**: To change the actual communication speed, you have to change the speed on each of the devices connected to the channel. Changing the Link Rate only from this dialog stops channel operation.*

Beam Intensity Group

In the Beam Intensity group you can see and change the optical transmitter beam intensity in 15 steps.

You may use the radiobuttons in the group “Default by cable length” to select intensity according to the length of the optical cable connected to channel in PC.

Cable lengths on the dialog match lengths with plastic fibre:

- Short: length < 5m
- Medium: length 5 ... 10m
- Long: length 10 ... 15m

Note: Setting a too small Beam Intensity stops channel operation.

Auto Node Numbering Checkbox

Two kinds of channel node configurations are supported:

1. All nodes in one Loop
2. A star built with NDBU-91 Branching Units on top of each other channels.

These two configurations cannot be mixed.

Check this box to perform an automatic node numbering for the channel. Channel type will be searched, and numbering will proceed according to the detected hardware.

Auto Node Numbering with NDBU-91 Branching Units

Background and Preparations:

Node numbers of NDBU-91 Branching Units are set by DIP switches on the boards. Numbers must be in descending order starting from closest one to PC. E.g. each NDBU-91 must have a number which is smaller than any other NDBU-91 higher in the hierarcy.

Max NDBU-91 node number set is 124, min 76. Each NDBU-91 reserves two node numbers.

Node number in the area 76-127 is not allowed to be used for target nodes. Auto Node Numbering will renumber target nodes to 2 ... 75, 128 ... 254

The maximum count 25 of NDBU-91 units allow 24*8 + 9 = 201 target nodes.

DDCS Communication will prompt you for confirmation to proceed and notify when done.

Auto Node Numbering on DDCS loop

Nodes are renumbered to 2 ... 254

DDCS Communication will prompt you for confirmation to proceed and notify when done.

***Note**:* After Auto Node Numbering, the count should always be compared to existing node count.

Note: Auto Node Numbering will take some time, depending on the configuration.

Note: Automatic node numbers are not permanent: number does not remain after power-down of the node.

Buttons

OK	Use currently shown settings to configure channel.
Cancel	Configuring channel not performed, all changes done on the dialog are cancelled.
Get Defaults	Get default settings.
Load	Load settings which were last stored by Save button.
Save	Save currently shown settings into initialization file.

INDEX I