



USER'S MANUAL

InverterWin™ REV 3.0

AC Inverter Support Software
For GPD505/P5 and GPD506/P5

Thank you for choosing this YASKAWA ELECTRIC AMERICA software product. Proper installation and use of this software will ensure proper product performance, and will prevent damage to connected inverter products.

Please read this manual thoroughly before using this software product and operate the software and any connected inverter products with care.

Please refer to the inverter product operation manual for proper handling and care of any connected inverter.

NOTICE

1. This manual describes the functions of the product and relations with other products. You should assume that anything not described in this manual is not possible.
2. Although care has been given in documenting the product, please contact your YASKAWA ELECTRIC AMERICA representative if you have any suggestions on improving this manual.
3. The inverter product contains potentially dangerous parts under the cover. Do not attempt to open the cover under any circumstances. Doing so may result in injury or death and may damage the product. Never attempt to repair or disassemble the product.
4. We recommend that you add the following precautions to any instruction manuals you prepare for the system into which the product is being installed or incorporated.
 - Precautions on the dangers of high-voltage equipment.
 - Precautions on touching the terminals of the inverter product even after power has been turned OFF. (These terminals are live even with the power turned OFF.)
5. Specifications and functions may be changed without notice in order to improve product performance.

Items to Check Before Unpacking


Check the following items before removing the product from the package:


- Has the correct product been delivered (i.e., the correct model number and specifications)?
- Has the product been damaged in shipping?


Notice:

YASKAWA ELECTRIC AMERICA products are created and manufactured for use according to proper procedures by a qualified operator and only for the purposes described in this manual.

The following conventions are used to indicate and classify precautions in this manual. Always heed the information provided with them. Failure to heed precautions can result in injury to people or damage to property.

 **DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

 **WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

 **Caution** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury, or property damage.

YASKAWA Product References:

All YASKAWA and YASKAWA ELECTRIC AMERICA products are capitalized in this manual.

The abbreviation “PC” means Personal Computer, and is not used as an abbreviation for anything else.

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No patent liability is assumed with respect to the use of the information contained herein. Moreover, because YASKAWA ELECTRIC AMERICA is constantly striving to improve its high-quality products, the information contained in this manual is subject to change without notice. Every precaution has been taken in the preparation of this manual. Nevertheless, YASKAWA ELECTRIC AMERICA assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained in this publication.

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Chapter 1

• Overview •

- 1-1 Introduction
- 1-2 Nomenclature
- 1-3 New Features for 3.00

1-1 Introduction

■ InverterWin™ AC Inverter Support Software

The YASKAWA ELECTRIC AMERICA InverterWin™ support tool is a Windows based software package designed to provide a user-friendly interface with the GPD505/P5 and GPD506/P5 inverters. It provides flexible features not found in the standard digital keypad.

InverterWin™ AC inverter support software is designed to connect to YASKAWA ELECTRIC AMERICA products. This support software allows the following:

- Uploading and downloading of inverter parameters
- Saving parameters to a file
- Printing of inverter parameters
- Ability to save/recall application specific parameters
- Viewing of parameters available in each control mode and access level
- Viewing of parameter value ranges and default settings
- Viewing of user adjusted parameter values



Note!

Parameters stored in older drive specific support tools are not compatible with InverterWin™ series support tools. Parameters downloaded using InverterWin™ series support tools are not compatible other series support tools.

1-2 Nomenclature

The screenshot shows the InverterWin™ software interface. The components are labeled as follows:

- Menu Bar:** Located at the top, containing 'File', 'View', 'Operators', 'Parameters', and 'Help'.
- Toolbar:** Located below the menu bar, containing various icons for file operations and system functions.
- Selection Tabs:** Located on the left side, containing 'Use Parameters', 'Graph', and 'Fault History'.
- Monitor Panel:** Located on the left side, containing various input fields and buttons for monitoring and control, such as 'Freq Ref (Hz)', 'Output Freq', 'DC Bus Volts (200Vdc)', 'DI Input 1', and 'RV Input Value (Hz)'. The 'RV Input Value (Hz)' field is currently set to 7.4.
- Main Window:** The central area containing a table of parameters.
- Status Bar:** Located at the bottom, displaying 'Ready', 'Model = CPH-PSU05PS / SW = 5132', and 'APP ONLINE'.

No.	Menu Text	Value	Unit	Minimum	Maximum	Default
e001	Parameter Selection/Initialization	3	r001 - r116 read and set	--	--	7
e002	Operation mode selector [Seq Ref]	3	Terminal / Terminal	--	--	3
e003	Input voltage	575.0	V	150.0	730.1	575.0
e004	Stopping method	0	Flamp to stop	--	--	0
e005	Motor rotation	0	CCW/shaft rotation	--	--	0
e006	Prohibit reverse operation	0	Reverse Operation Enabled	--	--	0
e007	Local/remote key function	1	Enabled	--	--	1
e008	Stop key function	1	Stop key is always effective	--	--	1
e009	Frequency reference setting method from operator	1	Enter key local	--	--	1
e010	V/F pattern selection	1	80 Hz Preset (Constant torque)	--	--	1
e011	Maximum frequency	60.0	Hz	--	--	--
e012	Maximum voltage	575.0	V	--	--	--
e013	Base frequency	60.0	Hz	--	--	--
e014	Mid. output frequency	3.0	Hz	--	--	--
e015	Mid. frequency voltage	431	V	--	--	--
e016	Minimum output frequency	1.0	Hz	--	--	--
e017	Minimum output voltage	25.0	V	--	--	--
e018	Acceleration time 1	10.0	sec	0.0	3600	10.0
e019	Deceleration time 1	10.0	sec	0.0	3600	10.0
e020	Acceleration time 2	10	sec	0	255	10
e021	Deceleration time 2	10	sec	0	255	10
e022	S curve selection	1	0.25sec	--	--	1
e023	Display mode	0	-	0	3999	0
e024	Frequency reference 1	0.0	Hz	0.0	60.0	0.0
e025	Frequency reference 2	0.0	Hz	0.0	60.0	0.0
e026	Frequency reference 3	0.0	Hz	0.0	60.0	0.0
e027	Frequency reference 4	0.0	Hz	0.0	60.0	0.0
e028	Frequency reference 5	0.0	Hz	0.0	60.0	0.0
e029	Frequency reference 6	0.0	Hz	0.0	60.0	0.0
e030	Jog frequency	6.0	Hz	0.0	60.0	6.0
e031	Frequency upper limit	100	%	0	255	100
e032	Frequency lower limit	0	%	0	255	0
e033	Motor rated current	9.0	A	1.1	22	9.0
e034	Motor thermal protection (DLS)	1	General purpose motor (0 min)	--	--	1
e035	Stop method selection for DHI	3	Continue operation at 0.0% of setting here	--	--	3
e036	Multi-function input selection 1 [Terminal 12]	0	Reverse run [2-volt sequence]	--	--	0
e037	Multi-function input selection 2 [Terminal 53]	2	External fault (normally open)	--	--	2

Figure 1.1: InverterWin™ Screen Nomenclature

1-3 New Features for InverterWin™ 3.00

The following are new features and changes from InverterWin™ 2.12 to InverterWin™ 3.00

1. The number of function selection tabs has been reduced from 4 to 3
2. The Graphing, Monitoring, and Fault History function development has been completed.
3. The inverter status function has been eliminated. The inverter status bits have been added to the monitoring function.
4. The inverter alarm demo function has been changed to a Fault History function and has been simplified.
5. The inverter monitor function selections have been expanded for P5 and selections not available for P5 have been eliminated.
6. The P5 575V product line support has been added
7. The inverter parameter file extensions have been changed as follows:

Inverter Type	InverterWin 2.12	InverterWin 3.00	Comment
GPD505/P5	*.P5	*.P5	No Change
GPD506/P5	*.P5	*.P5P	File Contents are identical
GPD506/P5 600V	N/A	*.P5H	New for 575V

The .P5 for GPD506/P5 was changed to .P5P so that the user could tell the files apart. The GPD506/P5 600V was done in the same manner.

Chapter 2

• Installation •

- 2-1 PC Requirements
- 2-2 Installation
- 2-3 Connecting the PC
- 2-4 Getting Started
- 2-5 Going Online
- 2-6 Going Offline

2-1 PC Requirements

■ InverterWin™ AC Inverter Support Software requirements for proper installation and operation

The following are the minimum PC requirements for InverterWin™

- Pentium 200MHZ Processor
- 64Mb RAM
- 10 Mb Free disk space
- RS 232 serial port
- CD ROM drive
- 800 x 600 pixel / 256 color display
- Mouse
- Microsoft Windows 2000 , Windows 98, Windows 95, Windows NT SP4 operating systems. (Windows XP Pending)

2-2 Installation

■ InverterWin™ Software Installation from CD-ROM CD4005

To install InverterWin™ , please follow these steps below:

1. Close all open programs currently running on the PC to prevent interference with the installation process.
2. Insert the CD 4005 CD-ROM into the CD-ROM drive (the D: drive for example).
3. If "Autoplay" is enabled, the CD-ROM will automatically start when the CD-ROM is inserted. The CD ROM navigation menu will appear in a new window on the PC display. Double click on the large InverterWin™ Installation button to start the installation process.
4. If "Autoplay" is not enabled, either of the following methods may be used to start installation once the CD-ROM is inserted in the PC CD-ROM drive:
 - On the Start menu, select *Run*. Type "D:\InvWin\INSTALL", and then click *OK*. (If the CD-ROM drive is not D, replace D with the appropriate CD-ROM drive letter)
 - Open the Windows Explorer. Click on drive D. and double click on file fold DW. Double click on the install icon (If the CD-ROM drive is not D: , replace D: with the appropriate CD-ROM drive letter).

The installation program will start and a welcoming screen will appear.

■ **InverterWin™ Software Installation from ZIP File**

1. Prior to installation, unzip the file InvWin_v3.00.Zip into an empty directory. Download unzipping software from www.pkzip.com or www.winzip.com if necessary. You should find 18 files unzipped. Those files are as follows:

FILE NAME	FILE Name
inst32i.ex	Setup.exe
_ISDel.exe	Setup.ini
_Setup.dll	setup.ins
_sys1.cab	setup.lid
_sys1.hdr	lang.dat
_user1.cab	layout.bin
_user1.hdr	os.dat
Data.tag	setup.BMP
data1.cab	data1.hdr

If any additional files are found, or if the file sizes are incorrect, please run virus scanning software on the unzipped files, or contact your local YASKAWA ELECTRIC AMERICA representative.

2. Run *SETUP.EXE* from the directory that you unzipped the files in #1 above and follow the installation instructions. When instructed choose a directory to install the InverterWin™ software into.



Note!

It is recommended to install the InverterWin™ software in the default directory chosen during installation. This will prevent problems that may occur during un-installation.

- 3.. Choose a program group for the program icon. While it is not necessary to choose the default location, it is a good idea to do so. This icon may be copied or moved at any time, following the installation.
4. After the InverterWin™ software is installed, you will be prompted to add an icon on the desktop. Choose yes or no, as preferred. After answering, you may begin using the software.

2-3 Connecting the PC to the Inverter

■ InverterWin™ Connection to Inverter Products

InverterWin™ may be used with the following YASKAWA ELECTRIC AMERICA inverter products.

- GPD505/P5
- GPD506/P5
- GPD506/P5 600V
- PC5

This software will not work with inverters provided by other manufacturers. It may not work with YASKAWA ELECTRIC AMERICA inverters manufactured prior to 1998.

■ Connecting InverterWin™ Software on PC to Inverter

The following paragraph describes how to connect your Yaskawa drive to your PC

1. Remove the operator keypad on the front cover of the drive.
2. Connect cable P/N UWR00103-1 (see Fig 2.1) to the connector for the drive keypad (1CN). Be careful of the small 12 pin connect as it is keyed (2 ridges on 1 side match the two slots on the right hand side of the connector).
3. Connect the 9 pin D-sub-miniature to the PC serial port.

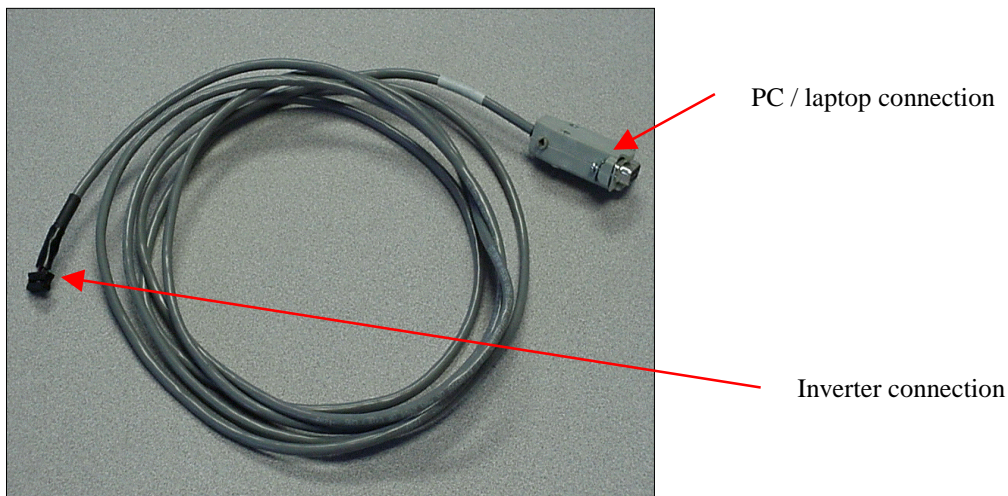


Figure 2.1: Inverter Cable P/N UWR00103-1

2-4 Getting Started

■ Starting InverterWin™

The following section describes how to start InverterWin™ .

1. Check to ensure the inverter is on and the communication cable connected

2. Click on the InverterWin™ icon 

The initial main screen will appear after the program finishes loading (Figure 2.2).

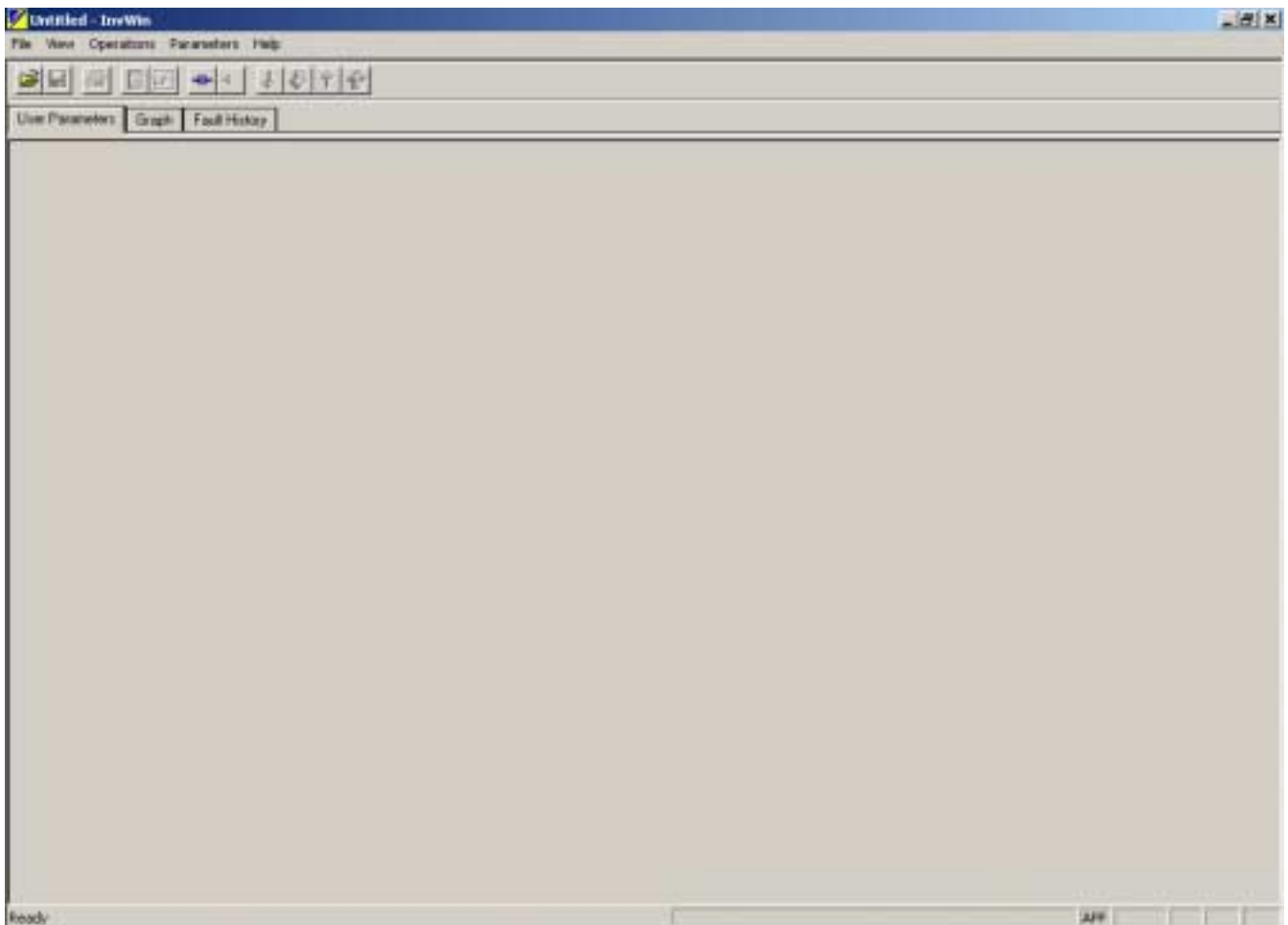


Figure 2.2: Opening Screen

2-5 Going Online with the Inverter

- To start the online process, you must first set the communications parameters of InverterWin™ correctly so that the PC can communicate with the inverter.
 - Go to the Main Menu and click on **View > Communications Settings**. The window in Figure 2.3 will appear.

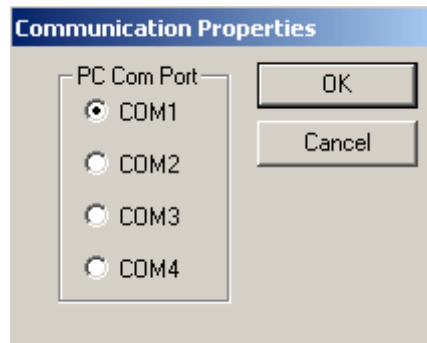



Figure 2.3: Communication Settings

- Unless you have modified the settings in the drive you must use the following default Device Address = 1

Select the serial port on the PC you have connected the Inverter to PC cable. Most common is to select COM1 and use COM1 or serial port 1 on the PC.
 - Close the Communications setting window
- Now we are ready to go online with the inverter. You can go online by performing any one of the following operations
 - Go to the main menu, click on **Operations > Go Online**
 - Push the  button on the toolbar.

A Device Selection window with a list of all of the inverter types that InverterWin™ can communicate with will pop up (Figure 2.4) .



Note!

P5 Spec F = GPD506
P5 = GPD505
P5 600V =
GPD506 (600V)

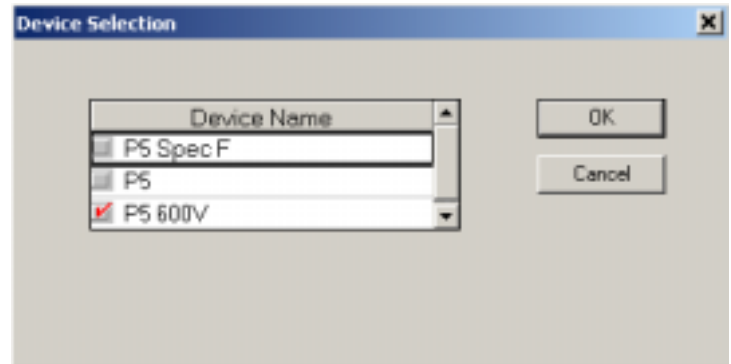


Figure 2.4: Device Selection Menu

Select which inverter you are connected to. The Spec type can be found on the inverter nameplate located on the side of the inverter. P5 and PC5 that are be A, B, or C Spec the P5 setting. P5 and PC5 that are F spec use the P5 Spec F setting. Any P5 that has a model number beginning in a 5 for 575V (example: CIMR-P5U5011 use the P5 600V selection.

Click on **OK** and InverterWin™ will connect with the inverter and upload the current drive parameters. During the upload a window in will be displayed indicating the progress of the parameter upload. When finished the screen in Figure 2.6 will be displayed.



Note!

If the communication error window appears after the Device Selection window: check the communication cable between the drive and the PC is the correct type and is installed correctly, drive is powered up, and the communication parameters in InverterWin™ are set correctly.

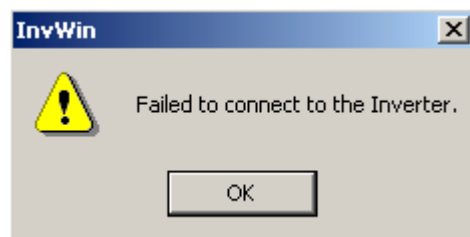


Figure 2.5: Communication Error Window

No.	Name Test	Value	Unit	Minmax	Maxmin	Default
n001	Parameter Selection/Initialization	3: n001 - n116 read and set	--	--	--	/
n002	Operation mode selection (Seq/Ref)	3: Terminal / Terminal	--	--	--	3
n003	Input voltage	575.0 V	--	150.0	733.3	575.0
n004	Stopping method	0: Ramp to stop	--	--	--	0
n005	Motor rotation	0: CCW / shaft rotation	--	--	--	0
n006	Prohibit reverse operation	0: Reverse Operation Enabled	--	--	--	0
n007	Local/remote key function	1: Enabled	--	--	--	1
n008	Stop key function	1: Stop key is always effective	--	--	--	1
n009	Frequency reference setting method from operator	1: Enter key used	--	--	--	1
n010	V/f pattern selection	1: 60 Hz Preset (Constant torque)	--	--	--	1
n011	Maximum frequency	60.0 Hz	--	--	--	--
n012	Maximum voltage	575.0 V	--	--	--	--
n013	Base frequency	60.0 Hz	--	--	--	--
n014	Mid output frequency	30.0 Hz	--	--	--	--
n015	Mid frequency voltage	143.7 V	--	--	--	--
n016	Minimum output frequency	1.5 Hz	--	--	--	--
n017	Minimum output voltage	20.1 V	--	--	--	--
n018	Acceleration time 1	10.0 sec	--	0.0	3600	10.0
n019	Deceleration time 1	10.0 sec	--	0.0	3600	10.0
n020	Acceleration time 2	10 sec	--	0	255	10
n021	Deceleration time 2	10 sec	--	0	255	10
n022	S-curve selection	1: 0.25sec	--	--	--	1
n023	Display mode	0	--	0	3999	0
n024	Frequency reference 1	0.0 Hz	--	0.0	60.0	0.0
n025	Frequency reference 2	0.0 Hz	--	0.0	60.0	0.0
n026	Frequency reference 3	0.0 Hz	--	0.0	60.0	0.0
n027	Frequency reference 4	0.0 Hz	--	0.0	60.0	0.0
n028	Frequency reference 5	0.0 Hz	--	0.0	60.0	0.0
n029	Frequency reference 6	0.0 Hz	--	0.0	60.0	0.0
n030	Jog frequency	6.0 Hz	--	0.0	60.0	6.0
n031	Frequency upper limit	100 %	--	0	255	100
n032	Frequency lower limit	0 %	--	0	255	0
n033	Motor rated current	9.0 A	--	1.1	22	9.0
n034	Motor thermal protection (OL1)	1: Generalpurpose motor(0 min)	--	--	--	1
n035	Stop method selection for OHI	3: Continue operation at 80% of setting freq.	--	--	--	3
n036	Multi-function input selection 1 (Terminal S2)	0: Reverse run (2-wire sequence)	--	--	--	0
n037	Multi-function input selection 2 (Terminal S3)	2: External fault (normally open)	--	--	--	2

Figure 2.6: Main Online Screen




Note!

If the inverter loses power while online, connection is resumed once power is reapplied. It is not necessary to toggle the online status of the InverterWin™ software.

2-6 Going Offline with the Inverter

Once connected or online with the inverter, you can go offline or disconnect with the inverter in one of 3 ways:

1. Click on the  icon on the toolbar
2. Go to the main menu, click on **Operations > Go Offline**
3. Exit InverterWin™.

Chapter 3

• Operation •



- 3-1 Uploading and Downloading Parameters
- 3-2 Opening an Existing Parameter File
- 3-3 Saving a Parameter File
- 3-4 Printing a Parameter File
- 3-5 Parameter File Information
- 3-6 Graphing Inverter Operation
- 3-7 Monitoring Inverter Alarm Status
- 3-8 Monitoring Inverter Operation
- 3-9 Other Menu Options
- 3-10 Status Bar

3-1 Uploading and Downloading Parameters

Before inverter parameters can be uploaded or downloaded, the inverter product type must be selected, and the inverter must be connected, or brought online, with the InverterWin™ software. See Chapter 2 for more information on Operation Online.

Inverter parameters may be uploaded from the inverter or downloaded to the inverter. Once parameters are uploaded to the PC, they may be saved, printed, or downloaded at any time.

■ Uploading Parameters to the PC

When the inverter is brought online, the initial parameter values will be uploaded to the PC. To upload new parameters to the PC, first determine if only a single parameter should be read or if all parameters are needed. Click on  or **Parameters > Read All** for all parameters. Click on  or **Parameters > Read** for individual parameters,


If single read is or individual parameter is selected, only the highlighted parameter will be read. Otherwise, all parameters will be read and updated. If all parameters are read, then the progress screen will be displayed. If single read is selected, the progress screen will not appear.

■ Downloading Parameters to the Inverter

To download parameters to the Inverter, first determine if only a single parameter should be sent or if all parameters are needed. Click on  or **Parameters > Send** for individual parameters, or click on  **Parameters > Send All** for all parameters.

If single send is selected, only the highlighted parameter will be sent to the inverter and updated in that inverter. Otherwise, all parameters will be sent to the inverter and updated.

3-2 Opening an Existing Parameter File

To open an existing file for the current inverter product click on the file open icon  or select **File >Open File** from the menu. The window in Figure. 3.1 will appear.

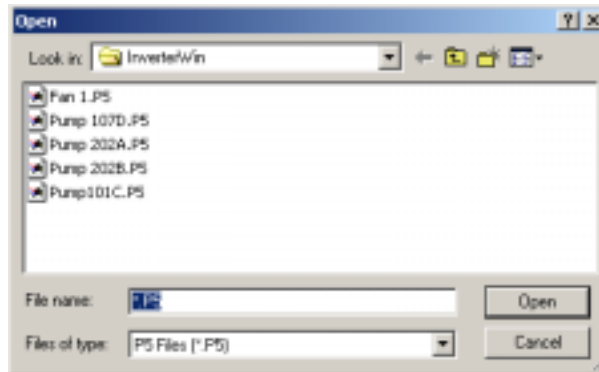


Figure 3.1: File Open Window

Click on the file to be opened, and click on **Open**, or double-click on the file to be opened. To change the inverter product file to be selected, click on the down arrow in the **Files of type** window. A drop-down selection menu will appear. Click on the appropriate inverter product to continue.


To find a parameter data file that is not in the current directory, click on the down arrow in the **Look in** window. Choose the proper directory, using the mouse. Double-click on the desired directory to continue.



Note!

InverterWin™ 3.00 uses .P5P file extension instead of .P5 that was used in InverterWin™2.12. The file contents are identical. To open an older .P5 GPD506 file in InverterWin™ 3.00 use the “all files” file type selection to open the file and then save it as a .P5P file if you wish to use the file in InverterWin™ 3.00

3-3 Saving a Parameter File

To save the current parameter file to floppy or hard drive, click on the file save icon  or select **File > Save** or **File > Save As...** from the menu. The following window will appear.

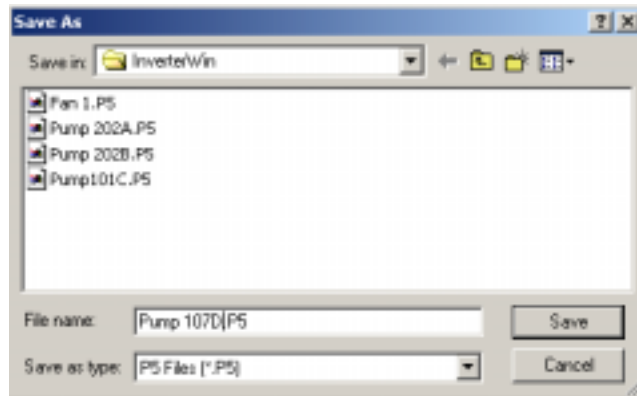



Figure 3.2: File Save As Window

Enter a file name in the **File name** window. Click on **Save** or hit <ENTER> to save the file with the new name. To save the file in a directory other than the current directory, click on the down arrow in the **Save in** window. Double-click on the desired directory to continue.

This saved file can be used to download data to the current inverter or a new inverter. The data can also be edited and printed at any time, even if the inverter is not connected or online.

3-4 Printing a Parameter File

To print an existing file for the current inverter product click on the file print icon  or select **File > Print** from the menu. The current parameter window information will appear.

Selecting **File > Print Setup** from the menu will allow changes to the printer selection, paper selection, and other printer properties.

3-5 Parameter File Information

When viewing a parameter file, a window similar to the one below (Figure. 3.3) will be displayed.

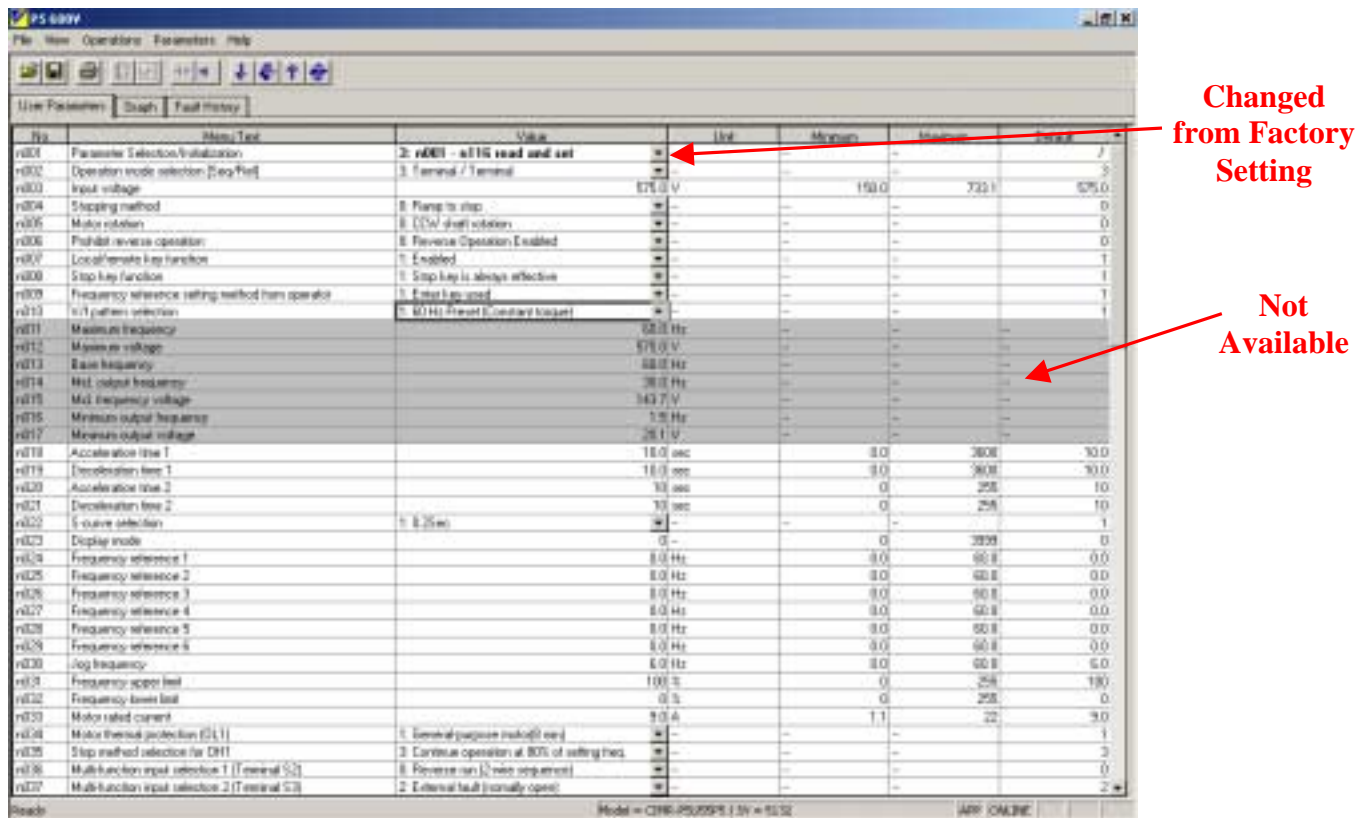


Figure 3.3: Parameter File Information

InverterWin™ software will identify parameters that are not available in the current control mode or access level via gray shading. It will identify parameter default and setting ranges. All parameters adjusted from default settings will be identified in bold font.

■ Description of Function Tabs

Function Tab	Description	Available
User Parameters	Parameter file data	Anytime
Graph	Real-time graph of inverter outputs, or functions	Monitor Mode
Fault History	Real-time fault information	When Online

Table 3.4: Function Tabs

3-6 Graphing Inverter Operation


The **Graph** function tab is used to graphically plot drive monitor constants during drive operation. Several functions may be graphed, including:

Parameter	Monitored Value Scale	Graphing Scale factor	Graphing display	Comment
Frequency Reference *	0 – Max Freq	100	100% = Max Freq	Always frequency regardless of N23 setting
Output Frequency	0 – Max Freq	100	100% = Max Freq	Always frequency regardless of N23 setting
Output Current	0 – Inv rated 100% = Inv rated	100	100% = 100% Inverter rated amps	
Output Voltage *	0 – Max Volts 200V scale	100	100% = 300V	400V: Monitor 240 = 480V output 600V: Monitor 200 = 575V output
DC Bus Voltage	0 – 400VDC 400V DC scale	100	100% = 400VDC	400V: Monitor 300 = 600 VDC 600V: Monitor 300 = 850 VDC
Elapsed Time	Actual Minutes	100		
FV Input Value	0 – Max Freq	100	100% input = 100%	Always frequency
FI Input Value	0 – Max Freq	100	100% input = 100%	Always frequency

* = Not available when connected to GPD505/P5

Table 3.5: Possible Monitors to Graph

Multiple functions can be traced at any point. Up to eight monitors may be used. Different line colors would be used to track different monitors. See Figure 3.6 for a sample setup window.

Click on the Graph Setup button  or **View > Graph Setup** on the toolbar to alter the appearance of the graph. **Graph #** tabs are used to set up multiple monitors. Click on the down arrow in the **Trace Selection** window to choose a function to track. Select a function from the drop-down list to continue. **Line Color** may be chosen by the user or by software default. **Line Thickness** may be selected to highlight certain monitors as necessary, or to make them easier to see. The **Scale Factor** adjusts the scaling of the graphed variable. 100 means that if the inverter variable is at full scale the trace displayed will be 100%.

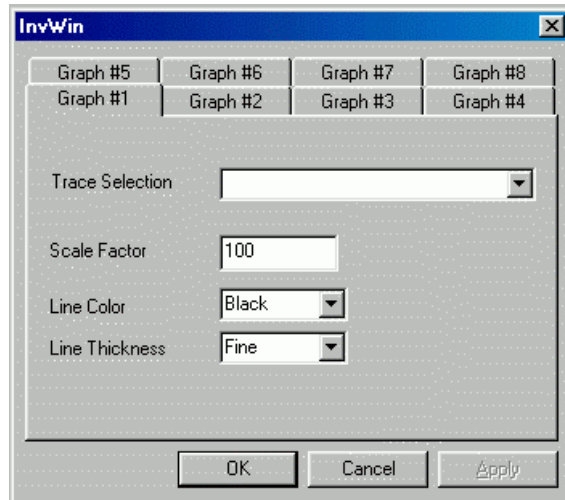


Figure 3.6: Graph Setup

After the trace selection has been made, click on **OK** to display the trace selections next to the graph.



Note!

The InverterWin™ software remembers the selections on the graph setup by inverter type. However, every time the graph function is used for the first time after going online with the inverter, each tab of the graph setup window that you wish to graph will have to be selected by clicking on the tab to activate that graph function.

Once monitor mode is enabled and trace selection is completed, a screen similar to Figure 3.7 will appear:

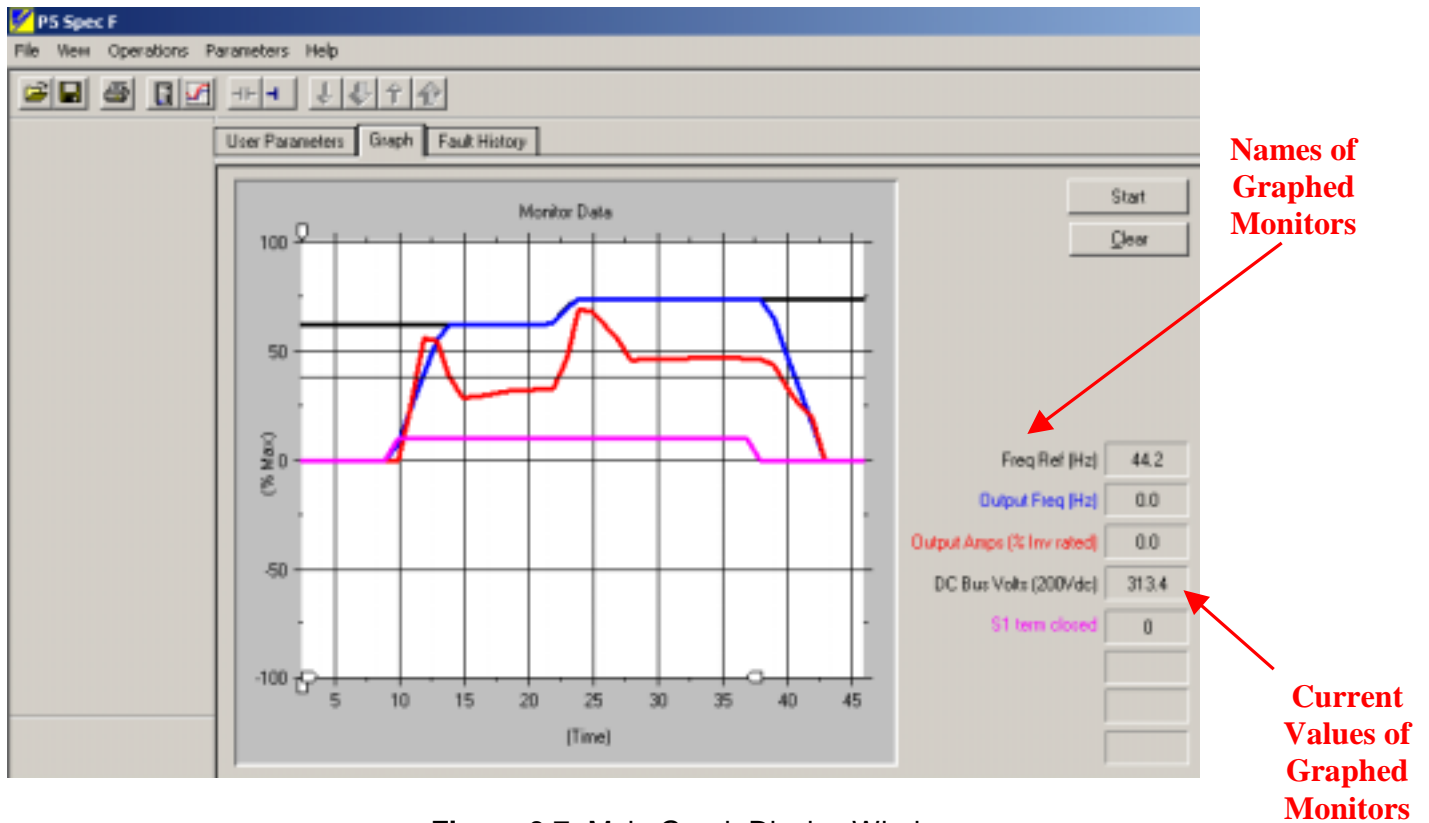


Figure 3.7: Main Graph Display Window



Note!

The InverterWin™ software must be in Monitor/Status mode, and the inverter must be online, to use the graph. It must remain in Monitor/Status mode an online, even if the inverter experiences a fault, to continue to review historical points on the graph.

To begin graphing inverter operation click on the **Start** button beside the graph. The graph will begin accumulating information and tracking from right to left. Each colored tracking line represents one of the items to be monitored. Take care not to use the same color for more than one item, or the graph could become confusing.

The monitor items that are being graphed appear on the right hand side of the graphing window. The color of the text matches the graph trace color. The number to the right of the colored text shows the current value of the monitored variable being graphed. When the graph is stopped, the values will freeze, i.e. they are only updated while the graph is running. The first time the graph function is used the windows will be blank until the graph is started.

■ Adjusting the Scale & Timeline

When the graph is tracking, the scale may be adjusted by “pulling” on the anchors on the X and Y axes. See Figure 3.8 for an example.

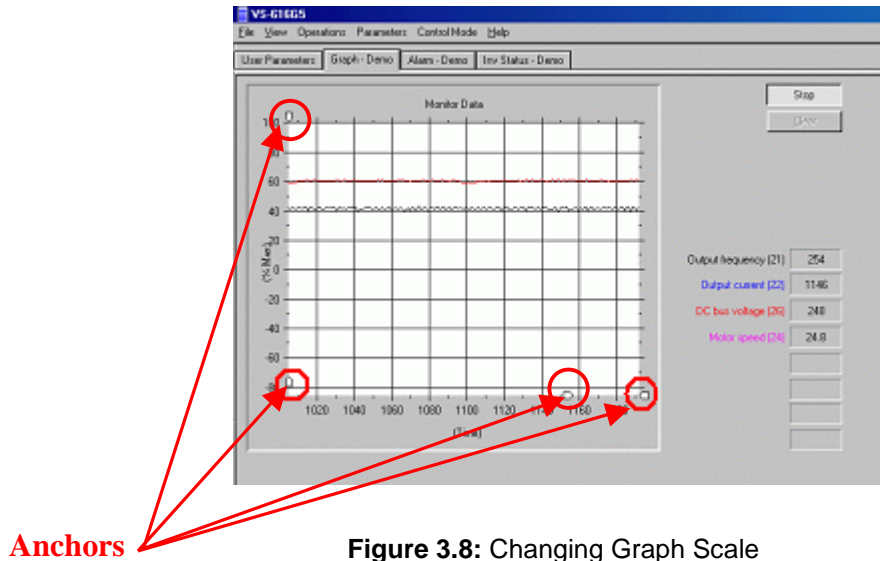


Figure 3.8: Changing Graph Scale

To find a segment of the graph that has passed out of view, slide the anchors until the necessary information is displayed. Pulling the anchors down or to the left takes the graph back to the starting point in time. Pulling them up or to the right moves the scale to the present point in time. At various points in the axes the gradients on the scale become closer together or farther apart. The effect of these variations is to give very precise views of any point in time on the graph. To print a portion of a graph, click on **File > Print**. Only the viewable portion of the graph will be printed. Use the anchors to highlight the appropriate area of the chart, and the proper resolution.

3-7 Inverter Fault History

The InverterWin™ software may be used to upload the fault history of the inverter. The information held in the fault history monitor U-09 is uploaded and displayed in text form.

■ Using the Fault History Feature

To activate the Inverter Fault History function, the inverter must be online (Refer to Section 2-4). Click on the ***Fault-History*** tab, and a window similar to that in Figure 3.9 will appear.

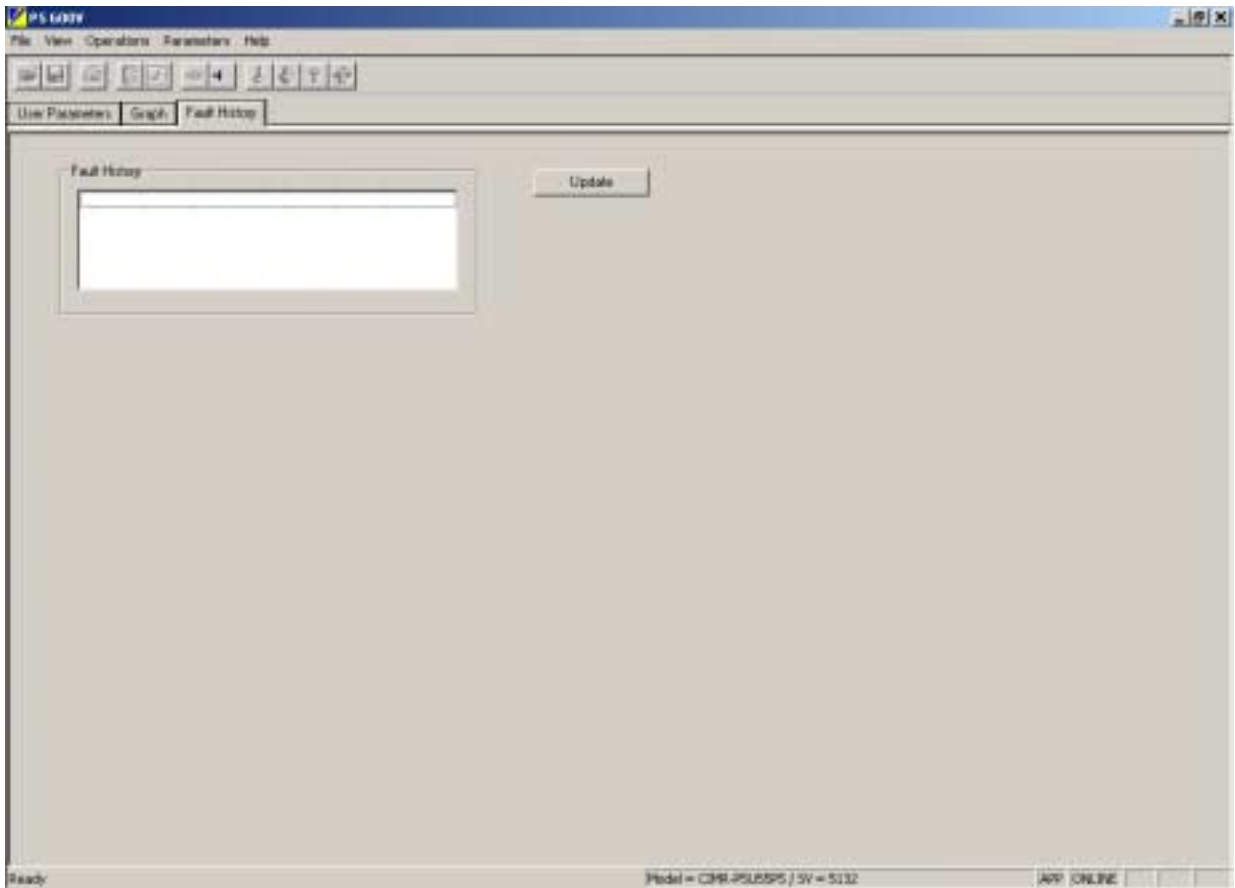


Figure 3.9: Initial Fault History Window

To retrieve the fault history information from the inverter, click on the **Update** button and the function will retrieve the fault history information from the inverter. A screen similar to Figure 3.10 will appear. To refresh the information, click on the **Update** button again.

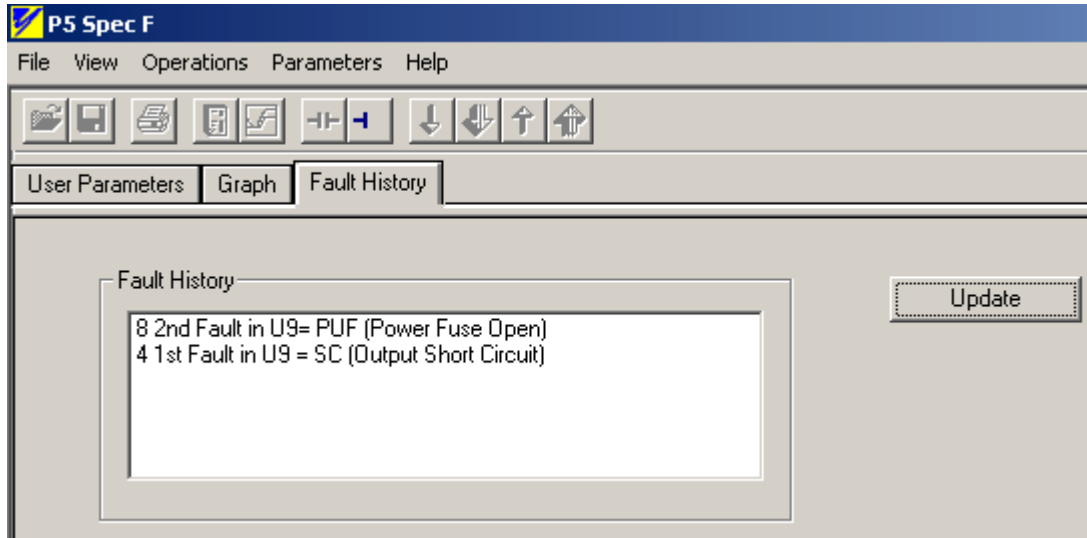



Figure 3.10: Fault History Information

3-8 Monitoring Inverter Operation

The InverterWin™ software may be used to monitor status of the inverter at any point while it is online. Many of the inverter monitor parameters available from the inverter keypad can be monitored from InverterWin™. The monitor function, when activated, opens a new window on the left side of the screen that is always visible when the monitor mode is active.

■ Using the Monitor Feature

To use the monitor function, please follow this procedure:

1. Go online with the inverter.
2. Go to the menu and click on **Operations > Start Monitor/Status** to activate the monitor function. A window with the monitored parameters will appear on the left hand side of the screen (Figure 3.11). The monitor configuration icon  will become active, indicating that the monitored parameters can be changed.
3. If you are using the monitor function for the first time or there are no monitor parameters selected, the window that opens up on the left side will be blank (See Figure 3.13).
4. Click on the enable button for each monitor parameter to start/stop the polling of each monitor parameter. The button toggles in and out to turn off or on that monitor parameter (Figure 3.12).

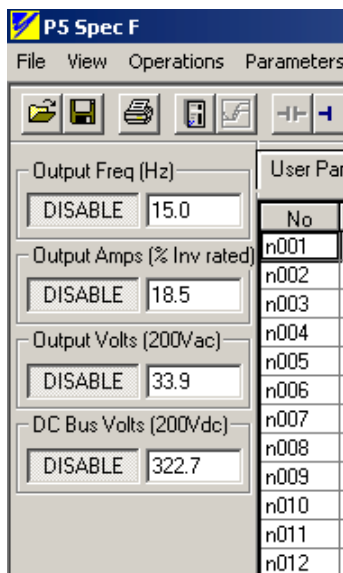


Figure 3.11: Monitor Started
Monitors Enabled

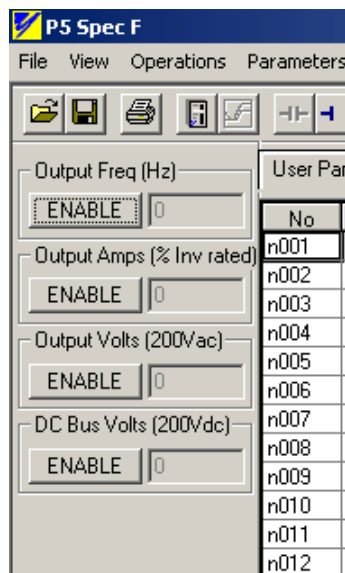


Figure 3.12: Monitor Started
Monitors Disabled

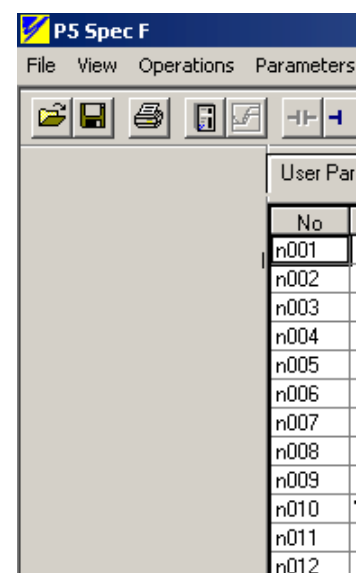



Figure 3.13: Monitor Started
No Monitors Selected

■ Setting up the Monitor Panel

To set up the monitor panels, click on the monitor bar setup icon  or click on **View > Monitor Bar Setup**. The window in Figure 3.14 will appear. Click on the down arrow to the right of each selection box to select a monitor parameter. A list and description of monitor parameters is in Table 3.15. The address column on the right hand side of the window is the MODBUS RAM address for the monitor item.

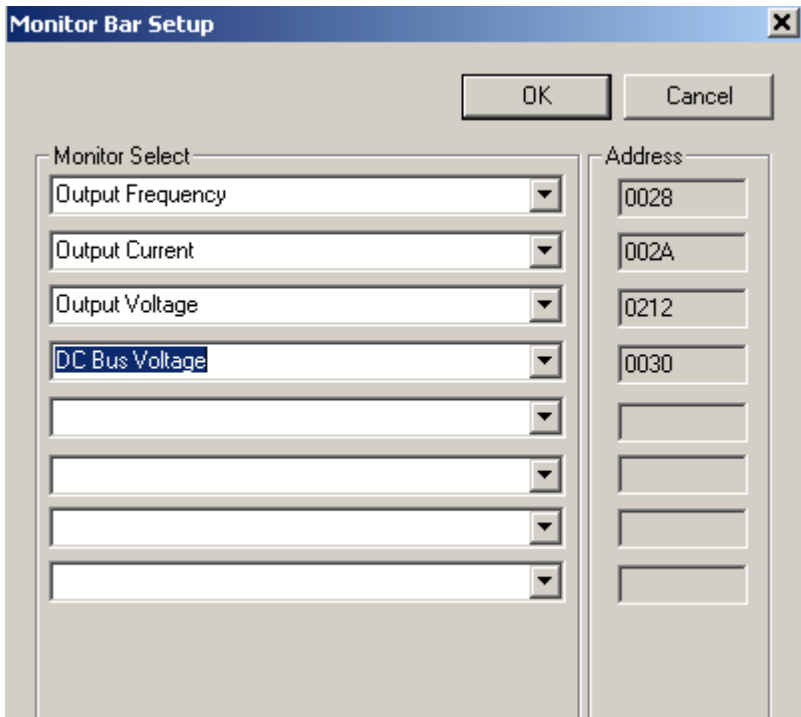


Figure 3.14: Monitor Bar Setup Window.

Parameter Name	Function	Range/Scale	Comment
Frequency Reference	Main frequency reference inside inverter	0 – max Hz	
Output Frequency	Inverter output frequency (U-02)	0 – max Hz	
Output Current	Inverter output amps	0 – 200% Inv Rated	Not amps but %
Output Voltage	Inverter output voltage	0 – 250 VAC	400 V & 600V reads in 200 V scale only
DC Bus Voltage	Inverter DC Bus Voltage	0 – 400 VDC	400 V & 600V reads in 200 V scale only
DI Input byte	Status of terminal S1 – S6 (U-07)	0 - 63	Decimal of bits 0 - 5
Inv Status Byte	Inverter status bits (U 08)	0 - 256	Decimal of bits 0 - 7
Elapsed Time (Min)	Elapsed time monitor in minutes	0 -65535	
PID Feedback	Value of PID feedback (U-13)	0 – 60 HZ	60 Hz = 100%
Kwh Monitor	Kilowatt hour monitor	0 - 65535	
S6 Closed	Status of S6	0 - 1	1 = Closed (ON)
S5 Closed	Status of S6	0 - 1	1 = Closed (ON)
S4 Closed	Status of S6	0 - 1	1 = Closed (ON)
S3 Closed	Status of S6	0 - 1	1 = Closed (ON)
S2 Closed	Status of S6	0 - 1	1 = Closed (ON)
S1 Closed	Status of S6	0 - 1	1 = Closed (ON)
Run bit	Status of S6	0 - 1	1 = Closed (ON)
Reverse Run bit	Status of S6	0 - 1	1 = Closed (ON)
Inverter Ready Bit	Status of S6	0 - 1	1 = Closed (ON)
Inv Fault Bit	Inverter Fault Bit	0 –1	
MODBUS Write Error	MODBUS Parameter Write error	0 -FFFFh	Parameter Address
MA –MC Closed	Status of MA-MC contact	0 -1	
M1-M2 Closed	Status of M1-M2 contact	0 -1	
Fault and Alarm bits	Bit status	0 -1	See program for list

Table 3.15: Monitor parameter selections

3-9 Other Menu Options

InverterWin™ contains menu options that are not found on the icon toolbar. Some of the more common menu options are found below.

■ Print Setup

Print Setup, located in the **File** menu, allows changes to the printer, paper size and orientation, and other print parameters.

■ Monitor/Parameters Section

Monitor/Parameters Section is located in the **View** menu and allows access to the monitor functions and the parameter listings. When toggled off, the operation window is removed and replaced by a blank background. All toolbars and menus are still viewable when Monitor/Parameters Section is toggled off.

■ Monitor Panel

Monitor Panel is located in the **View** menu, and allows access to the monitor setup window. When toggled on, monitor selections can be activated, deactivated and viewed. When toggled off, the monitor panel is hidden, and more screen space is dedicated to the inverter graph. See Figure 3.9 for an example of the monitor panel.

■ About INVWIN

About InvWin... is located under the **Help** menu, and is used to display information about the copy of InverterWin™ that is in use. The software version is displayed in this window.

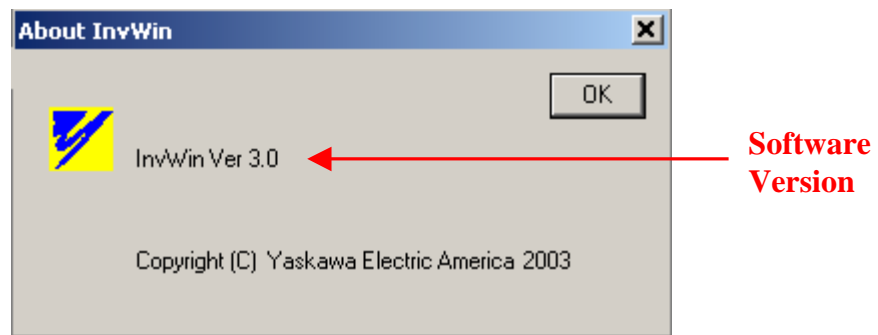


Figure 3. 16: About InvWin Window

3-10 Status Bar

InverterWin™ provides a status bar that displays important information about the software, and about the connected inverter. The status bar indicates that the inverter is online, what the inverter model is, and what the software revision is for that inverter.

The status bar also displays “Tool Tips” that offer hints about the functionality of a button or menu option. See Figure 3.20 for an example Tool Tip.

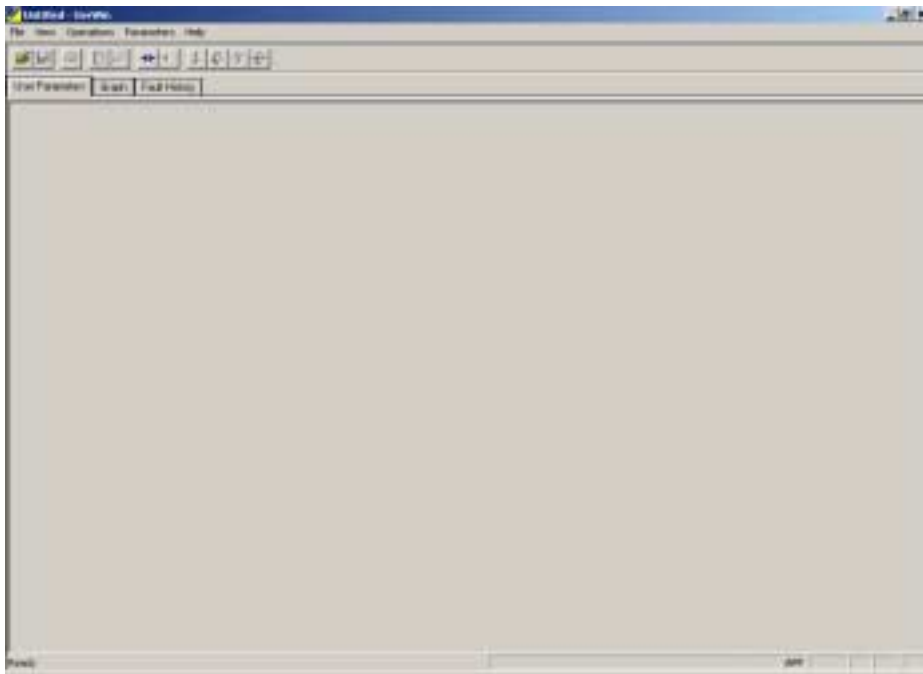


Figure 3.17: Location of Status Bar

**Status
Bar**

■ Status Bar Details

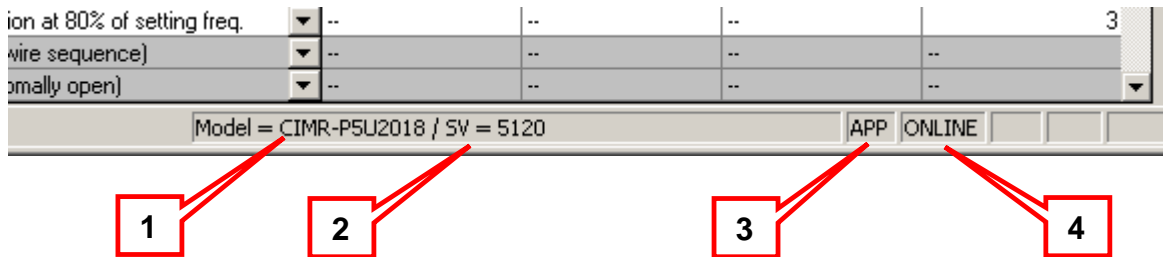


Figure 3.18: Right Hand Side Detail of Status Bar

1. Model: This is the model number of the inverter you are connected to or the opened file is based on.
2. SV = Control card software version number.
3. APP = Application mode (normal) SYS = Factory only mode
4. ONLINE = InverterWin™ is in the online mode.

n035	Stop method selection for OH1
n036	Multi-function input selection 1 (Terminal S2)
n037	Multi-function input selection 2 (Terminal S3)
Ready	

Figure 3.19: Left Hand Side Detail of Status Bar

The left hand side of the status bar shows the InverterWin™ software status or a tool tip depending on what is going on. Normally it will show either **Busy** or **Ready**. When the cursor is over a specific area of the screen, a tool tip will appear in this space. An example would be Figure 3.18 when the cursor is on the open file icon.

n041	Multi-function output selection 1 (M1-M2-M3)
n042	Multi-function output selection 2 (M1-M2)
n043	Multi-analog input selection
Open an existing document	

Figure 3.20: Tool Tip on Left Hand Side

• **Appendix** •

4-1 Software Revision History

4-2 Toolbar Icons

4-3 Troubleshooting

4-1 Software Revision History

■ InvWin™ Revision 2.12

- 1) Eliminated Parameter save issues when in the offline mode.

■ InvWin™ Revision 3.0

Refer to section 1 – 3 for details.

4-2 Toolbar Icons

■ InvWin™ Toolbar Icons












	Name	Description	When Available
	Open	Opens a file	User Parameter Mode
	Save	Saves a file	User Parameter Mode or Monitor Mode
	Print	Prints a file or graph	User Parameter Mode or Monitor Mode
	Monitor Bar Setup	Allows selection of functions to monitor	User Parameter Mode or Monitor Mode
	Graph Setup	Allows modification of graphing functionality	Monitor Mode
	Operation Online	Connects INVWIN software to an inverter	When Offline
	Operation Offline	Disconnects INVWIN software from an inverter	When Online
	Single Send	Updates a single parameter in the inverter	When Online
	Send All	Updates all parameters in the inverter	When Online
	Single Read	Reads a single parameter in the inverter	When Online
	Read All	Reads all parameters in the inverter	When Online

Table 4. 1

4-3 Troubleshooting

Error Message or Symptom	Cause	Solution
Software does not install	<ul style="list-style-type: none"> Minimum hardware requirements may not be met 	<ul style="list-style-type: none"> Upgrade the PC Install INVWIN on an alternate PC
Software will not open after successful installation	<ul style="list-style-type: none"> Certain .DLL files may be missing 	<ul style="list-style-type: none"> Locate and install missing .DLL files Install Microsoft Access 97 or 2000 and reopen InvWin
Parameters are missing	<ul style="list-style-type: none"> Open loop parameters are not available in closed loop modes Closed loop parameters are not available in open loop modes Vector parameters are not available in V/f modes 	<ul style="list-style-type: none"> Verify control method
“Communication Error”	<ul style="list-style-type: none"> Inverter is not connected properly to PC Baud rate is set improperly Comm port is set improperly Power is removed from the inverter while online 	<ul style="list-style-type: none"> Check cable connections Check INVWIN Baud rate Verify Comm port selection Reapply power to the inverter if it is lost
“Failed the version verification check! Version on drive :0”	<ul style="list-style-type: none"> Baud rate is set improperly Comm port is set improperly Inverter CPU version is not compatible with INVWIN software Inverter is not connected properly to PC 	<ul style="list-style-type: none"> Check INVWIN Baud rate Verify Comm port selection Use another support tool Use another inverter Check cable connections
“Failed to open port”	<ul style="list-style-type: none"> Selected PC com port is not available 	<ul style="list-style-type: none"> Try another com port
“Internal read error occurred on file setup.ins. Unable to load installation instructions”	<ul style="list-style-type: none"> Other applications are open while loading INVWIN Security conflict within the PC prohibiting write access to <i>setup.ins</i> 	<ul style="list-style-type: none"> Close any open applications before installing INVWIN Make sure any required administrative privileges are enabled on the PC for installing software
“Names”	<ul style="list-style-type: none"> Certain .DLL files may be missing 	<ul style="list-style-type: none"> Locate and install missing .DLL files Install Microsoft Access 97 or 2000 and reopen InvWin
“The data on the file is for an inverter that is not supported by this tool”	<ul style="list-style-type: none"> The data file opened by INVWIN was created with an ST series support tool 	<ul style="list-style-type: none"> Open the file with an ST series support tool Create a new data file using INVWIN
“XXXX failed to self-register”	<ul style="list-style-type: none"> Certain .DLL files may be missing 	<ul style="list-style-type: none"> Locate and install missing .DLL files Install Microsoft Access 97 or 2000 and reopen InvWin

Table 4.2: Errors & Error Message