Safety-Related Symbols

The following symbols are used in this manual according to the safety-related content. Be sure to observe text annotated with these safety symbols as their content is important.

⚠️ WARNING

Indicates precautions that, if not heeded, could possibly result in loss of life or serious injury.

⚠️ CAUTION

Indicates precautions that, if not heeded, could result in relatively serious or minor injury, damage to the product, or faulty operation.

Furthermore, items marked with ⚠️ CAUTION may have important consequences depending on the situation.

Warning-related symbols differ between ISO and JIS standards.

<table>
<thead>
<tr>
<th>ISO Standards</th>
<th>JIS Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚠️</td>
<td>🔴</td>
</tr>
</tbody>
</table>

This manual uses ISO standard symbols.

Product warning labels may use either the ISO or JIS standards. Treat either in the same manner.
1 System Outline

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5 Technical Support

Revision History
Manual Outline

This manual explains the following areas for DriveWizard users.
• Outline of DriveWizard Functions and Operation
• DriveWizard Installation/Removal

Related Manuals

Be sure to refer to the corresponding technical materials regarding related Inverters, options, and other equipment.
Use this product only with a full understanding of its specifications, service life, and other important information.

Notes on the PC Communication Function

⚠️ CAUTION

• Do not change the Inverter parameters or the MEMOBUS data using other methods, such as communication connection terminals or communication cards, while using DriveWizard.
If the Inverter parameters or the MEMOBUS data are changed using other methods while using DriveWizard, the data of DriveWizard may disagree with the Inverter data and result in a malfunction.

Regarding Software

Usage Notes

• Use this software on one specified PC. Request a separate license to use this software on another computer.
• Copying of this software for purposes other than use as backup copies is strictly prohibited.
• Carefully store the CD-ROM (original medium) upon which this software is written.
• Reverse compiling or assembly of this software is strictly prohibited.
• Use of this software in whole or in part by a third party through transfer, exchange, resale, and so forth, is strictly prohibited without the prior agreement of Yaskawa Electric Corporation.
• Copyright and all other rights for this software are reserved by Yaskawa Electric Corporation.
Operating Systems and Registered Trademarks

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Safety Notes

The following are important cautionary items that must be observed in the wiring and use of this product.

Notes on Wiring

⚠️ CAUTION

- Never change cables while DriveWizard is running. Always quit DriveWizard before changing connections.
  The operation of both or either the PC or Inverter cannot be assured if this is not observed.

Usage Notes

⚠️ CAUTION

- Always be sure to quit DriveWizard before turning the Inverter power off or on.
  The operation of both or either the PC or Inverter cannot be assured if this is not observed.
- Always be sure to stop the Inverter before connecting the Inverter to a PC that has DriveWizard installed.
  The operation of the Inverter cannot be assured if this is not observed.
1 System Outline

This section includes an outline of the DriveWizard system, and explains its advantages and preparation prior to use.

1.1 Outline and Advantages of DriveWizard

DriveWizard is an engineering tool for setup, test run, and maintenance of Yaskawa Inverters.

This product provides uniform features and functions enabling everyone from beginners to persons experienced in Inverter tuning to easily perform connections, test runs, and maintenance right out of the box.

Main Functions

• Parameter editing and help displays appropriate for each parameter
• Display of Inverter data, such as I/O signals and the internal status, and product data
• Troubleshooting (help displays appropriate to the cause and corrective action)
• Test run (Manual operation, pattern operation)
• Motor parameter autotuning function
• Oscilloscope function

Note: Some DriveWizard functions may be unusable depending on the Inverter type. Unusable functions will appear dimmed on the selection menu.
1.2 System Requirements

DriveWizard requires the following minimum system configuration.

<table>
<thead>
<tr>
<th>Personal Computer (PC)</th>
<th>PC/AT DOS/V-compatible device</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>* Operation cannot be assured on the NEC PC9821 series.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Processor</th>
<th>Pentium 200MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Memory</td>
<td>64MB (96MB recommended)</td>
</tr>
<tr>
<td>Free Hard Disk Space</td>
<td>At Normal Setup</td>
</tr>
<tr>
<td></td>
<td>• 100MB (200MB recommended at installation)</td>
</tr>
<tr>
<td>Monitor</td>
<td>Super VGA (800×600 or greater using a small font)</td>
</tr>
<tr>
<td>Number of Colors</td>
<td>256 colors (65536 colors recommended)</td>
</tr>
<tr>
<td>Operating System (OS)</td>
<td>• Windows 98</td>
</tr>
<tr>
<td></td>
<td>• Windows NT4.0 Service Pack 3 or later (IE4.01 Service Pack 2 or later)</td>
</tr>
<tr>
<td></td>
<td>• Windows 2000</td>
</tr>
<tr>
<td></td>
<td>• Windows Me</td>
</tr>
<tr>
<td></td>
<td>• Windows XP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Communication</th>
<th>RS-232C, RS-422, and RS-485 communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>Use an USB serial conversion adapter for communications with an USB port. Use an available standard adapter at all electric or computer stores.</td>
</tr>
<tr>
<td></td>
<td>• Manufacture: I-O Data Device, INC.</td>
</tr>
<tr>
<td></td>
<td>• Model: USB-RSAQ3</td>
</tr>
<tr>
<td></td>
<td>• Specifications: USB I/F Spec.1.1compatible</td>
</tr>
<tr>
<td></td>
<td>Max. DTE speed: 230.4kbps</td>
</tr>
<tr>
<td></td>
<td>USB: B receptacle</td>
</tr>
<tr>
<td></td>
<td>RS-232C: D-sub9 pin (female)</td>
</tr>
<tr>
<td></td>
<td>Power supply voltage: 5 VDC (from bus)</td>
</tr>
</tbody>
</table>

Some serial conversion adapters cannot be used for communications because of their compatibility with the PC or other factors.

<table>
<thead>
<tr>
<th>Communication Cables for Inverter to PC Connection</th>
<th>For a RS-232C communication cable, contact Yaskawa if necessary.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inverter type</td>
<td>Cable Model</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>Ordering from</td>
<td>Socket-connector type</td>
</tr>
<tr>
<td>Yaskawa in Japan</td>
<td>W5250</td>
</tr>
<tr>
<td>G5</td>
<td>Modular-connector type</td>
</tr>
<tr>
<td>G7, F7, L7, V7, J7, and others</td>
<td>WV103</td>
</tr>
<tr>
<td>Ordering from</td>
<td>Socket-connector type</td>
</tr>
<tr>
<td>Yaskawa outside Japan</td>
<td>UWR100-1</td>
</tr>
<tr>
<td>G5</td>
<td>UWR103-1 (Also used as a cable for writing data in the flash memory)</td>
</tr>
<tr>
<td>G7, F7, L7, V7, J7, and others</td>
<td>UWR00468-2</td>
</tr>
<tr>
<td></td>
<td>UWR00468-1 (Also used as a cable for writing data in the flash memory)</td>
</tr>
</tbody>
</table>

* When using RS-422 or RS-485 communications, refer to each Inverter’s instruction manuals to prepare a communication cable and perform wiring.
* If using a VS mini J7 Inverter, a SI-232/J7 Remote Interface Unit is required.

<table>
<thead>
<tr>
<th>Other</th>
<th>One node or more RS-232C, RS-422, or RS-485 I/F CD-ROM drive (for installation only)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adobe Acrobat Reader (by Adobe Corporation)</td>
</tr>
<tr>
<td></td>
<td>* Needed when displaying help.</td>
</tr>
</tbody>
</table>
1. For computers with Windows XP, 2000, and NT, only users with administrator privilege can log on and use DriveWizard. Also, only the user who installed DriveWizard can remove it.

2. For use with Windows XP, pay attention to the following items.
   • If using NTFS, contact a user with administrator privileges to log on to the DriveWizard. DriveWizard does not support Limited User Mode on NTFS file systems.
   • Multiple users cannot use Drive Wizard at the same time. DriveWizard can only be used by one user at a time.
1.3 Installing DriveWizard Program

To install DriveWizard, run the setup file for DriveWizard. And the installation process will begin. In this process, DriveWizard and the related files will be installed, or stored on the hard disk.

Operating conflicts may arise with the other programs during installation. Be sure to quit all other programs before installing DriveWizard.

Note: If installing DriveWizard on a computer with Windows XP, 2000, or NT, first log on to the computer as a user with administrator privileges and then install DriveWizard.

Install the program using the following procedure.
1. Insert the CD-ROM into the CD-ROM drive (the D-drive for example).
2. If "Autoplay" is enabled, the installation program will automatically start when the CD-ROM is inserted.
   If "Autoplay" is not enabled, either of the following methods may be used.
   • On the Start menu, select Run. Type "D:\SETUP", and then click OK.
   • Open the Explorer, load the CD-ROM contents, and double click "D:SETUP.EXE".

A message will appear, welcoming you to the DriveWizard program.
3. Click **Next** to continue.

4. Select the language to install, and click **Next** to continue.

5. Choose a destination folder to copy the DriveWizard file to, and click **Next** to continue.
6. Select the program group to create the DriveWizard 100 icon. "YE_Applications" is the default setting. After selecting the program group or folder, click Next to continue.

Then the PC files are copied from the CD-ROM. The percentage of the copying that has been completed is shown.

Note: If new versions of the PC support files are needed to install DriveWizard, a window will appear asking whether to overwrite the current version or to cancel the installation. DriveWizard may not run correctly if the new versions of the support files are not installed.

If DriveWizard has been successfully installed, one of two dialog boxes is displayed.
7. If dialog box (a) is displayed, click Finish to complete the setup. If dialog box (b) is displayed, select Yes when asked if you want to restart the computer and then click Finish to complete the setup.
1.4 Removing DriveWizard Program

Note: If uninstalling DriveWizard from a computer with Windows XP, 2000, or NT, first log on to the computer as a user with administrator privileges and then uninstall DriveWizard.

Remove the DriveWizard program using the following procedure.
1. Click the Start button, point to Settings and click Control Panel.
2. Click the Change or Remove Programs icon. The Add/Remove Programs Properties box appears.

Note: The window layout differs depending on the OS.
3. Click the Change or Remove Programs tab if it is not already selected. Click **YASKAWA DriveWizard 100** as the program to be removed, and then click **Change/Remove**.

A confirmation message will appear asking if you are sure you want to remove the program.

4. Click **OK** to start removing the program. When the program has been successfully removed, the following window will appear telling you that maintenance is complete.

5. Click **Finish** to complete the removal process.
2 Starting DriveWizard

Start DriveWizard using the following method.

2.1 Starting DriveWizard

Start DriveWizard:
• from the Start menu
• from a shortcut

2.1.1 From the Start Menu

To start DriveWizard from the Start menu:
1. Click the Start button, and point to Programs.
2. Open the YE_Applications folder.
3. Click DriveWizard.

2.1.2 From a Shortcut

To start DriveWizard from a shortcut on the desktop:
1. Open the YE_Applications folder on the desktop.
2. Click DriveWizard.
2.2 Connecting Communication Port

When DriveWizard is initially started, the following screen appears.

The window is divided into five panes, one for each type of monitor. Individual panes can be closed. The panes that are open when you quit DriveWizard will still be open the next time DriveWizard is started.

Communication Settings Window at Initial Startup

Enter the settings for communications between DriveWizard and the Inverter by means of a serial port.

1. Select the method to set up the Inverter: online or offline.
   
   **Online:** Select if editing parameters or performing a test run with the Inverter connected
   
   **Off-line:** Select if editing parameters without the Inverter connected.
2. If Online is selected, enter the necessary settings to setup communication and protocol.

**<Communication Setup>**

**Port (Items to be displayed differ depending on the type of PC.)**
Select the communications (COM) port. In the Port list, you can see a list of all the ports that your PC has.

**Mode (Single, Range)**
Select the specifying method of communication address. If you know the communication address, select “Single.” If you do not know the communication address, select “Range.”

**Address/Final Address (1 to 32 ports)**
If “Single” is selected in the Mode selection, enter the communication address which is set in the Inverter constants. If “Range” is selected in the Mode selection, enter the final address in the searching range.

**<Protocol Setup>**
Select the same values as those set in the Inverter parameters. Refer to Inverters instruction manuals because applicable values differ depending on the Inverter type.

**Transfer rate**
Select from 1200, 2400, 4800, 9600, or 19200 bps.

**Parity selection**
Select odd, even, or none

**Data length**
Select 7 or 8 bits.

**Stop bit**
Select 1 or 2 bits.

3. When all the settings have been made, click **OK**.
After the Inverters have been successfully connected to DriveWizard, a list of the connected Inverters will appear on the screen.
2.3 Selecting a Inverter

When DriveWizard is started, the Inverters that are connected will be scanned through the serial ports. The results of this scan will be displayed in the Inverter Selection box.

![Inverter Selection Box]

Note: When RS-232C is used, only one Inverter will be displayed. Use the following procedure to select the Inverter to be connected.

Select the Inverter to be connected and then click OK.

Click Cancel to close the dialog box and the system will enter offline mode.

<If the Inverter Selection Box is not Displayed>

If no Inverter is found, the following message will appear, and the system will enter offline mode.

![Connect]

If the aforementioned message is displayed regardless of whether a Inverter is connected or not, problems may occur in communications.

<If a Connect Confirmation Message is Displayed>

If the versions of the Inverter software and DriveWizard are not compatible because an earlier version of DriveWizard is used, the following message will appear.

![Connect]

Use a version that is compatible with the version of the Inverter software. If the additional parameters along with software upgrades are not to be used, however, the existing version of DriveWizard can be used.
Check the following items if the Inverter is not displayed:

<table>
<thead>
<tr>
<th>Check Item</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the power on?</td>
<td></td>
</tr>
<tr>
<td>Are the connections loose?</td>
<td>Fasten all communication cable connectors securely.</td>
</tr>
<tr>
<td>Was the correct port selected?</td>
<td>Make sure that the port connected to the communication cable is the same as the port selected during connection.</td>
</tr>
<tr>
<td>Is the station address correct?</td>
<td>&lt;RS-232C connection&gt; Be sure the setting for the station address set by the Inverter parameter is the same as the station address selected during connection.</td>
</tr>
<tr>
<td></td>
<td>&lt;RS-422/485 connection&gt; Be sure that the station address set by the Inverter parameter is not duplicated and “0” is not set as the station address.</td>
</tr>
<tr>
<td>Is the RS-232C port enabled?</td>
<td>To save energy, it is possible to select the option of not feeding power to the RS-232C port in the PC. Check this setting. See the manual for the PC for details on how to select this function.</td>
</tr>
<tr>
<td>Is a battery being used to power the PC?</td>
<td>Problems in communications may occur if the PC is running on batteries. Use AC power.</td>
</tr>
<tr>
<td>Is the wiring correct?</td>
<td>See the communication cable or the Inverter instruction manuals for more information on the wiring.</td>
</tr>
<tr>
<td>Is the communication cable the recommended length?</td>
<td>Shorten the cable length as much as possible. Recommended Lengths of Shielded Twisted-pair Cables RS-232C: Maximum 3m</td>
</tr>
</tbody>
</table>

If the Inverter Selection box still does not appear even after checking the above items, check the following concerns.

- Are the Inverter parameter settings for communications the same as those set in the Connect box?
- If the Inverter parameter settings for communications were changed, was the Inverter shut down and restarted after the Digital Operator’s LED turned off to make the settings effective?
3 DriveWizard Main Window

The DriveWizard main window has a menu bar and a toolbar as shown in the following figure.

DriveWizard Main Window

All application functions can be accessed from the menu bar or the toolbar.
Menu Bar and Menus

DriveWizard Menu Bar

File menu

- **Reconnect**: Switches between Online and Offline modes or between the connected Inverters.
- **Disconnect**: Switches to Offline mode.
- **Print Setting**: Select your preferences for printing the information seen on the screen. See "Print Setting" for details on the setting method.
- **Exit**: Quits DriveWizard.

Help menu

- **DriveWizard Help**: Displays a help window for DriveWizard.
- **Inverter Help**: Displays a help window for the Inverter.
- **Introduction Tour**: Introduces main functions of DriveWizard
- **Technical Support**: Lists local contacts.
- **About DriveWizard**: Displays version information of DriveWizard.

There are also function menus. For details, see Chapter 4.
Print Setting

In the DriveWizard main window, click File, and then click Print Setting. The Printing Item Setting box appears.

Cover

Select Attaching the Cover, and then click Cover Editing.
The Cover box appears, displaying the Submitter tab in front. Use the formatting options on the tabs to control the content of the cover, such as the greeting sentences and where to submit the information. After the setting is finished, click **OK**.

### Data for each function

Depending on which one of the functions you select, the items that you can print will differ.
To enter your printing preferences or specifications, click the tab whose options you want to enter or change, and enter the desired settings.

Color Selection
Documents can be printed in color or black and white. Select your preference.

Click OK. The document appears on the screen the way it will appear in print.

To print the document as is without any changes, click the button.

To return to the Printing Item Setting box and change some settings, click Editing of the Printing Items.
**Toolbar**

Click an icon on the toolbar to directly select its corresponding function.

![DriveWizard Toolbar](image)

<table>
<thead>
<tr>
<th>Toolbar Button</th>
<th>Function Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Parameter Editing" /></td>
<td>Parameter Editing</td>
</tr>
<tr>
<td><img src="image" alt="Parameter Online Editing" /></td>
<td>Parameter Online Editing</td>
</tr>
<tr>
<td><img src="image" alt="Troubleshooting" /></td>
<td>Troubleshooting</td>
</tr>
<tr>
<td><img src="image" alt="Product Information" /></td>
<td>Product Information</td>
</tr>
<tr>
<td><img src="image" alt="Status Monitor" /></td>
<td>Status Monitor</td>
</tr>
<tr>
<td><img src="image" alt="Motion Monitor" /></td>
<td>Motion Monitor</td>
</tr>
<tr>
<td><img src="image" alt="Input Signal Monitor" /></td>
<td>Input Signal Monitor</td>
</tr>
<tr>
<td><img src="image" alt="Output Signal Monitor" /></td>
<td>Output Signal Monitor</td>
</tr>
<tr>
<td><img src="image" alt="All Monitor" /></td>
<td>All Monitor</td>
</tr>
<tr>
<td><img src="image" alt="Oscilloscope Function" /></td>
<td>Oscilloscope Function</td>
</tr>
<tr>
<td><img src="image" alt="Manual Operation" /></td>
<td>Manual Operation</td>
</tr>
<tr>
<td><img src="image" alt="Pattern Operation" /></td>
<td>Pattern Operation</td>
</tr>
<tr>
<td><img src="image" alt="Motor Parameter Autotuning" /></td>
<td>Motor Parameter Autotuning</td>
</tr>
</tbody>
</table>
4 Operation

4.1 Editing Parameters

The following two methods exist for editing parameters.
• Using the Parameter Edit window
• Using the Parameter Online Edit window

4.1.1 Editing Parameters

Parameters can be displayed or edited in the Parameter Edit window. The windows differ in the Online and Offline modes.

Parameter Editing when Online

In the DriveWizard main window, click Parameters and then click Edit Parameters. The Parameter Edit window for the online mode appears.

Parameter Edit Window (Online Mode)
Modify setting
Items to be displayed in the Parameter Edit window can be selected.
Click Modify setting, and the Display setting box appears. Select the information to be displayed and the size of the Parameter Edit window.

Display Setting Box

Display contents
Select the information to be displayed.

Dialog size
Select the size of the Parameter Edit window.

Click OK to save the changes in the display settings and to return to the Parameter Edit window. Click Cancel to return to the Parameter Edit window without changing the display settings.
4.1.1 Editing Parameters

**Control Mode**
Edits the parameter for the control mode and related parameters that are changed when the control mode is changed.

Click **Change** next to the Control mode or double-click Control method selection (G5, F7, G7, L7) or Control mode (V7) in the list in the Parameter Edit window. The following dialog box appears.

Select the control mode in the list box, and related parameters are displayed on the list. Click **OK** to change the parameter settings and return to the Parameter Edit window. Click **Cancel** to return to the Parameter Edit window without changing the parameter settings.

Note: The control mode can be changed in the edit box opened by clicking **Edit**.

**Access Level**
Edits the parameter for the access level.

Click **Change** next to the Access level or double-click Constant access level (G5, F7, G7, L7) or Constant selection/initialization (V7, J7) in the list in the Parameter Edit window. The following dialog box appears.

Select the access level in the list box or type the value. Click **OK** to change the access level and return to the Parameter Edit window. Only parameters that can be viewed in the selected access level are displayed. Click **Cancel** to return to the Parameter Edit window without changing the parameter setting.
4.1.1 Editing Parameters

**Edit**

The parameter can be viewed and then changed in the Edit box. Select the parameter to be changed, and click **Edit** or double-click the parameter, and the Edit box appears. The Edit box differs according to the parameter selected.

**<Numerical type Edit Box>**

![Numerical type Edit Box]

Select the value using the spin button or type the value.

**<Selection-type Edit Box>**

![Selection-type Edit Box]

Select the value in the list box or type the value.
<Editing parameters related to other parameters>
If the parameter related to other parameters is changed, those parameters are also changed.

Select the parameter to be changed, and click **Edit** or double-click the parameter, the following dialog box appears.

![Dialog box for editing parameters](image)

Select the setting in the list box. Or click **Edit** and type the value. Then, click **OK**.

<Setting the user constants to be displayed>
The user constants can be selected, which are displayed when the access level is set to the User constant setting.

Select User setting constant (G5, F7, G7, L7) in the list in the Parameter Edit window and click **Edit** or double-click the parameter, and the User Parameters box appears.

Note: This setting is not available in V7 and J7 Inverters.
Select a parameter in the Proposed User Parameter list and click Add. The selected parameter is displayed in the User Parameter list.

After you have finished selecting the user parameters, click OK and the following message appears.

Click OK.
4.1.1 Editing Parameters

Comments

Comments can be typed or edited in the Comment box. Click Comments, and the Comment box appears.

Import

Parameter settings can be transferred or imported from a stored file with the Import function. If the imported parameters differ in number from the on-screen parameters (including parameters not currently displayed), the following processing takes place.

• If the number of imported parameters is greater

• If the number of imported parameters is fewer
4.1.1 Editing Parameters

1. Click **Import**, and the Open box appears.

2. Select the file to be transferred, and click **Open**. The Import parameter box appears.

3. Select the appropriate check boxes for the filter conditions, and click **OK**.

Displays a list of parameters to be imported.

Opens a list of parameters that are changed when the parameters for the drive size, control mode, or initialize mode are changed.
4.1.1 Editing Parameters

**Compare to file**

The edited parameter settings can be compared with the values in the specified file for all parameters, including those not displayed, with the Compare function. Check the settings using the following procedure.

1. Click **Compare** at the right-top, and the Open box appears.

![Open dialog box]

2. Select a file and click **OK**. A message appears and confirms if you want to compare all parameter settings.

![Compare dialog box]

Click **Cancel** to return to the Parameter Edit window without comparing the settings.

3. Click **OK** to start the comparison.

When the comparison has been successfully completed, the following dialog box appears.

- If all parameters match

![Compare result dialog box]
• If not all parameters match

Click the button to save the results of the comparison.

Initialize

The settings of the Inverter can be returned to the factory settings with the Initialize function. Return to the initial settings using the following procedure.

1. Click **Initialize**. Or Select Initialize (G5, F7, G7, L7), Constant selection/initialization (V7, J7) in the parameter list in the Parameter Edit window. Then click **Edit** or double-click the parameter. The dialog box in which you can initialize the Inverter settings appears.

Click **Cancel** to return to the Parameter Edit window without changing the Inverter settings.

2. To set an initialization condition, select a value in the list box. Or, click **Edit** and type the value.
3. Usually, the initialization conditions for the inverter capacity, control mode, and Initialize mode do not have to be changed. If changing them, select the new values from each list. Or, Click Edit and type the value.

4. Click OK, and the warning box appears.

5. Click Execute to start initialization.

**Compare to Inverter**

The edited parameter settings can be compared with the values in the Inverter for all parameters, including those not displayed, with the Compare function. Check the settings using the following procedure.

1. Click Compare at the bottom. A message appears and confirms if you want to compare all parameter settings.

   ![Compare dialog](image)

   Click Cancel to return to the Parameter Edit window without comparing the settings.

2. Click OK to start the comparison, and the percentage of the progress completed is shown.

   ![Comparing dialog](image)

   When the comparison has been successfully completed, the following dialog box appears.

   - If all parameters match
4.1.1 Editing Parameters

- If not all parameters match

![Comparison results](image)

Click the button to save the results of the comparison.

**Read from Inverter**

Selected parameter settings from the Inverter can be read and then changed by overwriting them with the Read function.

Read the parameters using the following procedure.

1. Click **Read** and the dialog box in which you can read the Inverter settings appears.

![Read from drive](image)

Displays a list of parameters to be read.

Opens a list of parameters that are changed when the parameters for the drive size, control mode, or initialize mode are changed.
<If parameters are being edited>

If parameters are being edited, a message appears and confirms if you want to save the current parameter settings.

- Click **OK** to save the current parameter settings. The Save As box appears.

- Click **No** to overwrite the current parameter settings without saving the current parameter settings. The Read from drive box appears.

- Click **Cancel** to return to the Parameter Edit window without reading the settings.

2. Select a reading condition in the list box.

   **Read selected parameters**
   
   Only selected parameters in the Parameter Edit window are read.

   **Read Group**
   
   All parameters in the displayed group tab are read.

   **Read all parameter**
   
   All parameters, including those not displayed, are read.

3. Select the appropriate check boxes for the filter conditions.

4. Click **OK** to start reading the settings from the Inverter.
<If parameters related to other parameters are included in the selected group>
The Read box appears.

![Read box](image)

Click **OK** to read the parameter and all related parameters that are listed.
Click **Cancel** to return to the Parameter Edit window without reading the parameters.

**Write to Inverter**
Selected parameter settings can be saved with the Write function.
1. Click **Write**, and the dialog box in which you can overwrite the Inverter setting appears.

   ![Write dialog box](image)

   Opens a list of parameters that are changed when the parameters for the drive size, control mode, or initialize mode are changed.

   Displays a list of parameters to be overwritten.

2. Select an overwriting condition in the list box.
   - **Write selected parameters**
     Only selected parameters in the Parameter Edit window are overwritten.
   - **Write Group**
     All parameters in the displayed group tab are overwritten.
• Write all parameters
  All parameters including those not-displayed are overwritten.
3. Select the appropriate check boxes for the filter conditions.
4. Click OK to start saving the settings to the Inverter.

<If parameters related to other parameters are included in the displayed group>

The Write box appears.

Click OK to overwrite the parameter and all related parameters that all listed.
Click Cancel to return to the Parameter Edit window without overwriting the parameters.
4.1.1 Editing Parameters

The data on the Parameter Edit window can be printed.

Only the group parameters selected in the Parameter Edit window can be printed. To print all parameters, select the All parameters check box in the Parameter Edit window, and perform printing.

Click the **(Print)** button, and the Printing Item Setting box appears.

**Header Footer Tab**

**Printing Items Tab**

**Cover**

Select **Attaching the Cover**, and then click **Cover Editing**. For details, see **Chapter 3**.

**Data for each function**

To enter your printing preferences or specifications, click the tab whose options you want to enter or change, and enter the desired settings.

**Color Selection**

Documents can be printed in color or black and white. Select your preference.
After setting is finished, click **OK**. The document appears on the screen the way it will appear in print.

To print the document as is without any changes, click the **print** button.

To return to the Printing Item Setting box and change some settings, click **Editing of the Printing Items**.
Parameter Editing when Offline

In the DriveWizard main window, click Parameters and then click Edit Parameters. The Parameter Edit box appears.

Open file: Reads in existing parameters.
Open new file: Creates new settings for parameters.

Select the desired command and click OK.

< When "Open file" is Selected >

When “Open file” is selected, the Open box appears.

Select the file to be imported, and click Open.
< When "Open new file" is Selected >

When “Open new file” is selected, the Drive model selection box appears.

Select the model of Inverter and the area. And type the last four digits of the software number. Click Next to continue, and the Mode selection box appears.

Note: Check the software number by checking the nameplate or using the digital operator. Refer to the Inverter instruction manuals for more information.

Select the value in each list box. Or click each Edit button and type the value. Click Apply and the Parameter Edit window for the offline mode appears.
4.1.1 Editing Parameters

Parameter Edit Window (Offline Mode)

- Prints the Parameter Edit window.
- Saves parameter data to a file.
- Selects a new Inverter.
- Opens files.
- Displays the related help window.

Selects all parameters for the group being edited, including those not displayed.
(Open) Button

The parameters file can be loaded in the Open box. To load the file, use the following procedure.

1. Click the button, and the Open box appears.

2. Select the name of the parameter file to be imported, and click Open.
4.1.1 Editing Parameters

(New) Button

A new Inverter can be selected in the Drive model selection box using the New command. To change to a different Inverter, use the following procedure.

Click the (New) button, and the Drive model selection box appears.

Select the model of Inverter and the area. And type the last four digits of the software number. Click Next to continue, and the Mode selection box appears.

Note: Check the software number by checking the nameplate or using the digital operator. Refer to the Inverter instruction manuals for more information.

Select the value in each list box. Or Click each Edit button and type the value. Click Apply and the Parameter Edit window for the offline mode appears.
Modify setting
Items to be displayed in the Parameter Edit window can be selected. Click Modify setting, and the Display setting box appears. Select the information to be displayed and the size of the Parameter Edit window.

Display Setting Box

Display contents
Select the information to be displayed.

Dialog size
Select the size of the Parameter Edit window.

Click OK to save the changes in the display settings and to return to the Parameter Edit window. Click Cancel to return to the Parameter Edit window without changing the display settings.
4.1.1 Editing Parameters

**Control Mode**
Edits the parameter for the control mode and related parameters that are changed when the control mode is changed.

Click **Change** next to the Control mode or double-click Control method selection (G5, F7, G7, L7) or Control mode (V7) in the list in the Parameter Edit window. The following dialog box appears.

![Control Mode Dialog Box](image)

Select the control mode in the list box, and related parameters are displayed on the list. Click **OK** to change the parameter settings and return to the Parameter Edit window. Click **Cancel** to return to the Parameter Edit window without changing the parameter settings.

**Access Level**
Edits the parameter for the access level.

Click **Change** next to the Access level or double-click Constant access level (G5, F7, G7, L7) or Constant selection/initialization (V7, J7) in the list in the Parameter Edit window. The following dialog box appears.

![Access Level Dialog Box](image)

Select the access level in the list box or type the value. Click **OK** to change the access level and return to the Parameter Edit window. Only parameters that can be viewed in the selected access level are displayed. Click **Cancel** to return to the Parameter Edit window without changing the parameter setting.
4.1.1 Editing Parameters

**Edit**

The parameter can be viewed and then changed in the Edit box. Select the parameter to be changed, and click **Edit** or double-click the parameter, and the Edit box appears. The Edit box differs according to the parameter selected.

**<Numerical type Edit Box>**

Select the value using the spin button or type the value.

**<Selection-type Edit Box>**

Select the value in the list box or type the value.
<Editing parameters related to other parameters>
If the parameter related to other parameters is changed, those parameters are also changed.

Select the parameter to be changed, and click **Edit** or double-click the parameter, the following dialog box appears.

Select the setting in the list box. Or click **Edit** and type the value. Then, click **OK**.

<Setting the user constants to be displayed>
The user constants can be selected, which are displayed when the access level is set to the User constant setting.

Select User setting constant (G5, F7, G7, L7) in the list in the Parameter Edit window and click **Edit** or double-click the parameter, and the User Parameters box appears.

Note: This setting is not available in V7 and J7 Inverters.
Select a parameter in the Proposed User Parameter list and click Add. The selected parameter is displayed in the User Parameter list.

After you have finished selecting the user parameters, click OK and the following message appears.

Click OK.
Comments

Comments can be typed or edited in the Comment box. Click Comments, and the Comment box appears.

Import

Parameter settings can be transferred or imported from a stored file with the Import function. If the imported parameters differ in number from the on-screen parameters (including parameters not currently displayed), the following processing takes place.

- If the number of imported parameters is greater

- If the number of imported parameters is fewer
1. Click **Import**, and the Open box appears.

2. Select the file to be transferred, and click **Open**. The Import parameter box appears.

3. Select the appropriate check boxes for the filter conditions, and click **OK**.
**4.1.1 Editing Parameters**

**Compare to file**

The edited parameter settings can be compared with the values in the specified file for all parameters, including those not displayed, with the Compare function. Check the settings using the following procedure.

1. Click **Compare** at the right-top, and the Open box appears.

2. Select a file and click **OK**. A message appears and confirms if you want to compare all parameter settings.

   ![Open dialog box]

   Click **Cancel** to return to the Parameter Edit window without comparing the settings.

3. Click **OK** to start the comparison.

   When the comparison has been successfully completed, the following dialog box appears.
   - If all parameters match

   ![Compare dialog box]
• If not all parameters match

Click the button to save the results of the comparison.
4.1.1 Editing Parameters

(Print) Button

The data on the Parameter Edit window can be printed.

Only the group parameters selected in the Parameter Edit window can be printed. To print all parameters, select the All parameters check box in the Parameter Edit window, and perform printing.

Click the button, and the Printing Item Setting box appears.

Header Footer Tab

Cover

Select Attaching the Cover, and the click Cover Editing. For details, see Chapter 3.

Data for each function

To enter your printing preferences or specifications, click the tab whose options you want to enter or change, and enter the desired settings.

Color Selection

Documents can be printed in color or black and white. Select your preference.
4.1.1 Editing Parameters

After setting is finished, click OK. The document appears on the screen the way it will appear in print.

To print the document as is without any changes, click the button.

To return to the Printing Item Setting box and change some settings, click Editing of the Printing Items.
4.1.2 Editing Parameters Online

Parameters can be viewed or edited in the Parameter Online Edit window.

**NOTE**

Values edited in the Parameter Online Edit box are also immediately changed in the Inverter.

Edit parameters online using the following procedure.

1. In the DriveWizard main window, click **Parameters** and then click **Edit Online Parameters**. The Parameter Online Edit box appears. The previously saved parameter settings will be displayed.

   ![Parameter Online Edit Box](image)

2. To change the values of the settings, type the new value in the edit box and click **Enter**. The value will now be displayed in the box on the left.

   Note: Parameters that cannot be edited appear shaded.

   Modified values are also immediately changed in the Inverter. To view different parameters click **Set**, and the following dialog box appears.

   ![Set and Delete Parameters](image)

   - **Set**: Displays the related help window.
   - **Delete**: Deletes the parameter displayed at left.
4.1.2 Editing Parameters Online

3. Click **Set** to view a parameter other than the "Acceleration time 1." The Parameter selection box appears.

The parameters that appear shaded cannot be edited online or during a run. To hide the parameters, select the check box under the list of parameters.

4. Select the parameter to be edited, and click **OK**. The Parameter Online Edit setting box appears.

5. If there are still parameters to be edited, click **Set** for a second or third time and set these in the same manner as the first parameter.

Click **Delete** to delete the currently displayed parameter.
6. Click **OK** when parameter display is complete. The Parameter Online Edit box appears, displaying the set parameters.

![Parameter Online Edit Box](image)

7. To change the values of the settings, type the value in the edit box and click **Enter**. The typed value will be displayed in the left box. Modified values are also immediately changed in the Inverter.
4.1.3 Editing Parameter Files Created by VS-COM

A parameter file created by VS-COM can be imported with DriveWizard and displayed, edited, and saved as a DriveWizard file.

1. Start DriveWizard offline.
2. In the DriveWizard main window, click Parameters, and then click Edit Parameters. The Parameter Edit box appears.

3. Select “Open file”, and then click OK. The Open box appears.

4. Select “VS-COM Parameter file (*.prm)”, and then click Open. The selected VS-COM parameter file will be imported.

IMPORTANT After importing the file, be sure to confirm the parameter settings.
4.2 Troubleshooting

Online Troubleshooting

Faults can be viewed in the Trouble Shooting box.

In the DriveWizard main window, click **Alarm** and then click **Trouble Shooting**. The Trouble Shooting box is displayed.

**Trouble Shooting Box (Online)**

Note: Display contents differ depending on the Inverter type.

**Current Fault**

The current fault is displayed.

If Inverter status is normal, “No error” is displayed. If Inverter status is faulty, the current fault is displayed. The fault will continue until Inverter status goes normal or another fault occurs.

Note: Faults cannot be reset in DriveWizard. End DriveWizard, remove the cause of the fault, and then reset the fault using the Digital Operator.

Click the **?** button to display details concerning a specific fault and its corrective measures.
4.2 Troubleshooting

Last Fault

Note: The number of fault history to be stored differs depending on Inverter type. And also, the Elapsed time column is not displayed in some Inverter type.

<Fault History>

The Inverter stores a history of the 10 most recent faults. In DriveWizard, these are displayed in the Fault History column in the Trouble Shooting box, and are shown in order of occurrence with their fault code, the details about the type of fault, such as name, and elapsed time at fault.

When a new fault occurs, it is displayed as the most recent fault at the top of the list and the previous faults displayed move down on the list with the last fault eliminated.

Click the button, to display details concerning a specific fault and its corrective measures.

Click Clear to clear the fault history.

<Fault Trace>

The values of monitor items when the fault occurred are displayed. Select a previous fault in the combo box.

Click the button, to display details concerning a specific fault and its corrective measures.

Click Clear to clear the fault trace.
4.2 Troubleshooting

**Clear button**

To clear the fault history and fault trace, click the **Clear** button. The following dialog box is displayed.

Click **OK** to clear the fault history and fault trace. Click **Cancel** to return to the Trouble Shooting box.

Note: Clear the fault history and fault trace after removing the cause of the fault and resetting the fault using the Digital Operator. If the fault history and fault trace are cleared before resetting the fault, even if the cause of the fault is not removed, the Inverter displays normal status on the Digital Operator. On the other hand, the current fault will continue in DriveWizard.

**Save button**

Click the **Save** button, the Save As box is displayed.

Click **Save** to save the data for current fault, fault history, and fault trace to the specified file.

Click **Cancel** to return to the Trouble Shooting box.
4.2 Troubleshooting

(Drive Type Info) button

Click the button, the Drive Type Info box is displayed.

Drive Type Info Tab

Comments can be typed in the comment tab.
Click **OK** to save the typed comments.
Click **Cancel** to cancel the typed comments.
4.2 Troubleshooting

**Offline Troubleshooting**

The saved troubleshooting file can be viewed offline.

In the DriveWizard window, click **Alarm** and then click **Trouble Shooting**. The Trouble Shooting box is displayed.

![Trouble Shooting Box at Initial Startup](image)

Click the ![button](image) button, the Open box is displayed.
Click **Open**. The specified file is loaded and the Trouble Shooting box is displayed.

![Trouble Shooting Box (Offline)](image)

**Note:** Display contents differ depending on the Inverter type.

**Fault occurred when attempting to save file**

The alarm that was occurring when the file was saved is displayed.

Click the ![Help](image) button, to display details concerning a specific alarm and its corrective measures.
4.2 Troubleshooting

**Last Fault**

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Contents</th>
<th>Elapsed Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Most recent fault</td>
<td>PK DC Bus Fuse Open</td>
<td>91</td>
</tr>
<tr>
<td>2</td>
<td>Second most recent fault</td>
<td>EM DC Over Current</td>
<td>81</td>
</tr>
<tr>
<td>3</td>
<td>Third most recent fault</td>
<td>DC Over Current</td>
<td>81</td>
</tr>
<tr>
<td>4</td>
<td>Fourth most recent fault</td>
<td>No Error</td>
<td>91</td>
</tr>
</tbody>
</table>

Note: The number of fault history to be stored differs depending on Inverter type. And also, the Elapsed time column is not displayed in some Inverter type.

**<Fault Trace>**

The Inverter stores a history of the 10 most recent faults. In DriveWizard, these are displayed in the Fault History column in the Trouble Shooting box, and are shown in order of occurrence with their fault code, the details about the type of fault, such as name, and elapsed time at fault.

Click the ![button] icon to display details concerning a specific fault and its corrective measures.

**<Fault Trace>**

The values of monitor items when the fault occurred are displayed. Select a last fault in the combo box.

Click the ![button] icon to display details concerning a specific fault and its corrective measures.
(Drive Type Info) button

Click the (Drive Type Info) button, the Drive Type Info box is displayed.

Drive Type Info Tab

Comments can be typed in the comment tab. Click OK to save the typed comments. Click Cancel to cancel the typed comments.
(Save) button

Click the button, the Save As box is displayed.

Click **Save** to overwrite or save as another file the added or changed comment in the Drive Type Info box.

Click **Cancel** to return to the Trouble Shooting box.
4.3 Monitor

4.3.1 Product Information

Information about the Inverter can be viewed in the Product Information window. In the DriveWizard main window, click Monitor and then click Product Information. Information about the Inverter will be displayed.

![Product Information Window](image)

Click the ? button to display the specifications for the product model. Click OK to return to the DriveWizard main window.
4.3.2 Monitor

The Inverter’s status, movement, and I/O signal status, can be monitored on the computer screen.

There are five types of monitor windows: Status Monitor, Motion Monitor, Input Signal Monitor, Output Signal Monitor, and All Monitor.

With All Monitor, Inverter status, movement, and I/O signal status are displayed in one window.

The monitor windows are independent of each other, but several windows can be displayed at the same time.

Select the information to be monitored in the Monitor Item Setting box.

Monitor Item Setting

To select the information to be monitored, use the following procedure.
1. In the DriveWizard main window, click **Monitor**, and then click **Monitor Setting**. The Monitor Item Setting box appears.

2. Select the tab for which you want to set monitor items.

3. To display an item, select it in the Monitor Select list and then click **Add**.

Monitor Item Setting Box

- Information not displayed in the Monitor window
- Information to be displayed in the Monitor window
- Moves the selected item up one level.
- Moves the selected item down one level.
4. Click **OK**, and the five monitor windows appear showing the selected information.

To open the Monitor Item Setting window, right-click and click **Monitor Item Setting**. To move an item, right-click an item and select a command.
Status Monitor

To monitor the status of the Inverter, use the following procedure.

1. In the DriveWizard main window, click Monitor, point to Monitor and click Status Monitor.

![Status Monitor Interface]

The items which can be monitored are listed.

2. Select the items to be monitored. To select all items, select the All parameters check box. The current status of a selected item is displayed in the "Value" column.

![Selected Status Monitor Interface]
Motion Monitor

To monitor the motions of the Inverter, use the following procedure.

1. In the DriveWizard main window, click Monitor, point to Monitor and click Motion Monitor.

The items which can be monitored are listed.

2. Select the items to be monitored. To select all items, select the All parameters check box. The current status of a selected item is displayed in the "Value" column.

Max: Displays the maximum value.
Min: Displays the minimum value.
Average: Displays the average value.

To clear the values in the Max, Min, and Average columns, click Reset. After the columns are cleared, the display of the items being monitored starts again.
### Input Signal Monitor

To monitor the input signal of the Inverter, use the following procedure.

1. In the DriveWizard main window, click **Monitor**, point to **Monitor** and click **Input Signal Monitor**.

   ![Input Signal Monitor Table](image)

   The items which can be monitored are listed.

2. Select the items to be monitored. To select all items, select the All parameters check box. The current status of a selected item is displayed in the "Value" column.

   ![Input Signal Monitor Table](image)
Output Signal Monitor

To monitor the output signal of the Inverter, use the following procedure.

1. In the DriveWizard main window, click Monitor, point to Monitor and click Output Signal Monitor.

The items which can be monitored are listed.

2. Select the items to be monitored. To select all items, select the All parameters check box. The current status of a selected item is displayed in the "Value" column.
4.3.2 Monitor

To monitor Inverter status, movement, and I/O signal status in one window, use the following procedure.

1. In the DriveWizard main window, click Monitor, point to Monitor and click All Monitor.

   ![Monitor window with parameters]

   The items which can be monitored are listed.

2. Select the items to be monitored. To select all items, select the All parameters check box. The current status of a selected item is displayed in the "Value" column.

   ![Monitor window with parameters selected]

---

All Monitor

To monitor Inverter status, movement, and I/O signal status in one window, use the following procedure.

1. In the DriveWizard main window, click Monitor, point to Monitor and click All Monitor.

   ![Monitor window with parameters]

   The items which can be monitored are listed.

2. Select the items to be monitored. To select all items, select the All parameters check box. The current status of a selected item is displayed in the "Value" column.

   ![Monitor window with parameters selected]
Adding and Removing a Monitor Address

Any constant can be a monitor constant if its MEMOBUS address information is added to the monitor item.

To add or remove the monitor address, use the following procedure.

1. In the DriveWizard main window, click **Monitor** and then click **Monitor Setting**. The Monitor Item Setting box appears.

2. Click **Add/Remove Address**, and the Add/Remove Monitoring Address box appears.
3. Enter the value for each item, click **Add**. If the MEMOBUS address is available, it is displayed in the Monitor entry list. If it is not available, the following message appears.

![Image of a warning message](image1.png)

4. Click **OK**, and return to the Monitor Item Setting box, where the MEMOBUS address is displayed in the Monitor select list.
4.3.3 Oscilloscope Function

Inverter items to be monitored can be displayed in graph in real time.

- **Data Monitor**

**Main Window**

In the DriveWizard main window, click **Monitor**, and then click **Oscilloscope**, and the Oscilloscope main window appears.
Oscilloscope Settings

In the Oscilloscope main window, click **SETUP**, and the Oscilloscope Setting box appears. Select the objects and conditions for the monitor. The settings from the previous monitor, if any, are displayed.

In the Oscilloscope Setting box, click **OK** to return to the Oscilloscope main window. The monitor data are updated according to the settings.

In the Oscilloscope Setting box, click **Cancel** to return to the Oscilloscope main window without changing the settings.

**<Monitor Object Settings>**

**CH1/CH2**

Select content such as "Output frequency", "Frequency Reference", etc., as monitor objects from the data boxes.

**Line**

Select a line color for data 1 and 2.
<Saves File>
Selects whether to save the sampling data or not.

Note: To save the data, be sure 30 Mbyte of free hard disk space are available. As a guideline, about 2 Mbyte of free hard disk space is needed to save one hour of normal data.

If not saving the data, select the Not Save check box. If saving the data, click to clear the Not Saved check box and click Setting. The Save As box is displayed.

Designate the file to save the data, and click Save.

Click Cancel to return to the Oscilloscope Setting box without saving the file.

If the file name already exists or if an already existing file is loaded and then re-saved, a warning message appears, telling you that the file name already exists, and asks if you want to replace the existing file.

Click Yes to overwrite the already existing file. Click No to return to the Save as box.
Starting the Monitor

In the Oscilloscope main window, click **START** to start monitoring.

![Oscilloscope main window with START and STOP buttons]

To stop monitoring, click **STOP**.

To make the settings for the sampling data, click **Setting**. The Sampling data setting box is displayed.

![Sampling data setting box with hour, minute, and second inputs]
<Measurement>
To clear the values of the table of the sampling data, click **Resetting**. After the table is cleared, the collection of the data for the items being monitored starts again.

<Average applicable range>
Enter the time allowed to measure the maximum, minimum, and average values, and click **Apply**. After the table is cleared, the collection of the data for the items being monitored for the specified time starts.

(Example) When range 10 seconds.

```
0  1  5  10 11  15  
second
```

10 seconds later: Maximum, minimum, and average values between 0 to 10 seconds.
11 seconds later: Maximum, minimum, and average values between 1 to 11 seconds.
15 seconds later: Maximum, minimum, and average values between 5 to 15 seconds.
4.3.3 Oscilloscope Function

Main Window

This Oscilloscope main window displays a graph based on the oscilloscope settings.

Oscilloscope Main Window

Displays information about when the monitor started.
In this example for the displayed data, "0001" means that it is the first day of the trace and "01" means that the trace has been running for its first hour.
### Toolbar

The position of the toolbar can be adjusted, and the on-screen display type selected.

![Oscilloscope Main Window Toolbar](image)

<table>
<thead>
<tr>
<th>Toolbar Button</th>
<th>Click this button to:</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Open" /></td>
<td>Load the monitor data file.</td>
</tr>
<tr>
<td><img src="image" alt="Print" /></td>
<td>Print the Oscilloscope main window.</td>
</tr>
<tr>
<td><img src="image" alt="Measurement Conditions" /></td>
<td>View the conditions for monitoring.</td>
</tr>
<tr>
<td><img src="image" alt="Cursor" /></td>
<td>View the information for the location where a cursor is shown.</td>
</tr>
<tr>
<td><img src="image" alt="Parameter Online Editing" /></td>
<td>View the Parameter Online Editing box. For details, see Section 4.1.2.</td>
</tr>
<tr>
<td><img src="image" alt="Zoom In" /></td>
<td>Enlarge the view of a selected area.</td>
</tr>
<tr>
<td><img src="image" alt="Return" /></td>
<td>Restore the area shown in the window to its usual size.</td>
</tr>
<tr>
<td><img src="image" alt="Clipboard Copy" /></td>
<td>Copy the displayed screen to the clipboard.</td>
</tr>
<tr>
<td><img src="image" alt="Manual Operation" /></td>
<td>View the Manual Operation box. For details, see Section 4.5.1.</td>
</tr>
<tr>
<td><img src="image" alt="Monitor Item Setting" /></td>
<td>View the Monitor Item Setting window. For details, see Section 4.3.2.</td>
</tr>
</tbody>
</table>

See "Toolbar Details" for details on the toolbar buttons.
Monitor Object Graph

In the graph, you can view the monitor objects designated in the Oscilloscope Setting box.
Vertical Axis Range

In the Vertical axis range box 1.2, select each unit of CH1 and CH2. If AUTO is selected, the range widths will be automatically adjusted so that all of the data can be shown in the graph. The range must be selected from the list.

| 50 | AUTO | 0.01 | 0.05 | 0.1 | 0.5 |

Vertical Axis Range Box

Horizontal Axis Range

In the Horizontal axis range box, select the units of time for the time axis in the graph. If the maximum settings of “6 min” is selected, the data for one hour is displayed in the graph. This is the maximum amount of time that can be displayed in the window. The range must be selected from the list.


Horizontal Axis Range Box
4.3.3 Oscilloscope Function

**Toolbar Details**

**Cursor** (Cursor) Button

The information for the location of each bar A and B can be viewed. In the window, the bars are referred to as cursors.

The color of bars A and B can be changed.

View the data using the following procedure.

1. Click the **Cursor** button. Two vertical bars will be displayed.
2. Move each bar. As you move each bar, the data changes in the Cursor table.

3. To view the frequency data, select **Horizontal** in the Specifies axes area. Two horizontal bars will be displayed.
4. Move each bar. As you move each bar, the data changes in the Cursor table.
4.3.3 Oscilloscope Function

(Zoom) Button

A view of an area selected by the mouse can be magnified. Zoom in on an area using the following procedure.

1. Click the \( \text{button} \).
2. Position the mouse at one corner of the area you want to select, and drag to the opposite corner. A line will appear around the selected area.

Area Designated by the Mouse

Area to be Magnified
3. Release the left mouse button. The selected area of the graph is enlarged.

![Magnified Area](image)

4. Click the button to view the original graph.

The graph will change in stages. To return to the original graph, click the button several times.
(Open) Button

The oscilloscope data file can be loaded in the Open box. To load the file, click the button. The Open box appears.

When the Button is Clicked in the Oscilloscope Main Window

Open

Click Open to load the selected oscilloscope file. Returns to the Oscilloscope main window if nothing is selected.

Cancel

Click Cancel to return to the Oscilloscope main window without loading the file.
4.3.3 Oscilloscope Function

(P) (Print) Button

The graph and data on the Oscilloscope main window can be printed. To print the graph and data, click the (Print) button. The Printing Item Setting box appears.

Header Footer Tab  Printing Items Tab

Printing Item Setting Box

Cover
Select Attaching the Cover, and the click Cover Editing. For details, see Chapter 3.

Data for each function
To enter your printing preferences or specifications, click the tab whose options you want to enter or change, and enter the desired settings.

Color Selection
Documents can be printed in color or black and white. Select your reference.
After setting is finished, click **OK**. The document appears on the screen the way it will appear in print.

To print the document as is without any changes, click the **button**.

To return to the Printing Item Setting box and change some settings, click **Editing of the Printing Items**.
The conditions for monitoring can be viewed. To view the conditions, click the button. The Measurement Data box appears. If not already selected, click the Measurement Data tab to view the conditions for monitoring.
### 4.3.3 Oscilloscope Function

![Oscilloscope Function](image.png)

#### All Tab

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1-01</td>
<td>Select language</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>A1-02</td>
<td>Access level</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>A1-03</td>
<td>Control method</td>
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<td>-</td>
</tr>
<tr>
<td>A1-04</td>
<td>Init parameters</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>A1-05</td>
<td>Enter password</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>A1-06</td>
<td>Select password</td>
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<td>-</td>
</tr>
<tr>
<td>A2-01</td>
<td>User parameter 1</td>
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<td>-</td>
</tr>
<tr>
<td>A2-02</td>
<td>User parameter 2</td>
<td>0000</td>
<td>-</td>
</tr>
<tr>
<td>A2-03</td>
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<td>-</td>
</tr>
<tr>
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<td>User parameter 15</td>
<td>0000</td>
<td>-</td>
</tr>
<tr>
<td>A2-16</td>
<td>User parameter 16</td>
<td>0000</td>
<td>-</td>
</tr>
</tbody>
</table>
4.3.3 Oscilloscope Function

Comment Tab

Click the Comment tab and type any comments.

**OK**

Click **OK** to save comments and return to the Oscilloscope main window.

Note: If “Not Saved” is selected in the Oscilloscope Setting box, the typed comments are not saved.

**Cancel**

Click **Cancel** to return to the Oscilloscope main window without saving the comments.
4.3.3 Oscilloscope Function

<table>
<thead>
<tr>
<th>(Clipboard Copy) Button</th>
</tr>
</thead>
<tbody>
<tr>
<td>The displayed screen can be copied to the clipboard. It can be exported to other application programs by using this button.</td>
</tr>
</tbody>
</table>

Click the button, and the Clipboard Copy box appears.

![Clipboard Copy Box](image)

**OK**
Click **OK** to copy the selected area to the clipboard.

**Cancel**
Click **Cancel** to return to the Oscilloscope main window.

Select the area to be copied to the clipboard.
- **Graph Area**

![Graph Area](image)
4.3.3 Oscilloscope Function

- Whole Dialog
4.4 Motor Parameter Autotuning

Motor parameters can be tuned using autotuning function (online) or auto parameter calculation (offline).

⚠️ CAUTION

The motor will rotate during autotuning. Please read the user manual and check the following before operation.

- If executing standard autotuning, please verify the motor is disconnected from all machinery.
- Please verify it is safe to rotate the motor.

⚠️ CAUTION

Non-rotational autotuning will not turn the motor shaft. However, there will be some voltage applied to the motor. Please read the user manual and check the following before operation.

- Voltage is applied to the motor during non-rotational autotuning. Do not touch the motor until autotuning is complete.
- When using non-rotational autotuning with the motor connected to a load such as a conveyor, please use a mechanical brake during tuning to prevent unexpected rotation.
- When the drive is run for the first time after non-rotational autotuning, please keep the load less than 50%.

⚠️ CAUTION

Non-rotational terminal resistance autotuning will not turn the motor shaft. However, there will be some voltage applied to the motor. Please read the user manual and check the following before operation.

- Voltage is applied to the motor during non-rotational terminal resistance autotuning. Do not touch the motor until autotuning is complete.
- When using non-rotational terminal resistance autotuning with the motor connected to a load such as a conveyor, please use a mechanical brake during tuning to prevent unexpected rotation.
Online Motor Parameter Autotuning

Perform online motor parameter autotuning using the following procedure.

1. In the DriveWizard main window, click **Tuning** and then click **Motor Parameter Autotuning**. The following dialog box is displayed.

   ![Motor parameter autotuning dialog box](image)

   **Standard Tuning**: Rotational autotuning
   Automatically sets motor parameters while turning the motor.
   Use rotational autotuning whenever performing autotuning for a motor that has fixed output characteristics or for a motor that is not connected to a load.

   **Tune-No Rotate**: Stationary autotuning
   Automatically sets motor parameters while supplying power to the stationary motor.
   Use stationary autotuning whenever performing autotuning for a motor that is connected to a motor.
Term Resistance: Stationary autotuning for line-to-line resistance only
Automatically sets motor parameters while supplying power to the stationary motor.
This autotuning can be used to prevent control errors when the motor cable is long or the cable length has changed or when the motor and Inverter have different capacities.

Calculation: Auto parameter calculation
Calculates motor parameters from the value of the motor nameplate or test report.
Only “Hz” is available for the constants related to frequency.

2. Select the motor in the Motor selection combo box. The tuning mode that is available for the selected motor is enabled.

3. Select the tuning mode and click **Next**. The following dialog box is displayed.

Note: Tuning mode that can be selected differs depending on the Inverter type or control mode. Refer to the instruction manual for the details.

![CAUTION](image)

1. Voltage is applied to the motor during non-rotational auto-tuning. Do not touch the motor until auto-tuning is complete.

2. When using non-rotational auto-tuning with the motor connected to a load such as a conveyor, please use a mechanical brake during tuning to prevent unexpected rotation.

3. When the drive is run for the first time after non-rotational auto-tuning, please keep the load less than 50%.

Note: Caution contents differ depending on the tuning mode.

Click **Cancel** to cancel autotuning, and return to the DriveWizard main window.
4. Click **Next**, and the following dialog box is displayed.

Note: Setting items differ depending on the tuning mode.

5. Enter each setting items required for tuning in the Value column.

6. Click **Next**, and the following dialog box is displayed.
7. Click **Autotuning**. Autotuning is started, and the following dialog box is displayed.

**Status**: Displays the status of autotuning.

**Monitor**: Displays the output frequency during autotuning.

Stops autotuning.

Displays the progress of autotuning.
After autotuning is finished, the tuned values are displayed in the After column of the Autotuning results list. Values that differ from the values before autotuning are displayed in red.

Click **Back** to return to the tuning motor data set box.

Click **Cancel** to change the tuned values back to their original values and return to the DriveWizard main window.

8. Click **Complete** to save the tuned values to the Inverter and return to the DriveWizard main window.
Offline Motor Parameter Autotuning

Perform offline motor parameter autotuning using the following procedure.

1. In the DriveWizard main window, click **Tuning** and then click **Motor Parameter Autotuning**. The following dialog box is displayed.

![Motor parameter autotuning dialog box](image)

Open file: Reads in existing parameters.
Create new file: Creates new setting for parameters.

2. Select the desired command and click **OK**.

*<When “Open file” is Selected>*

When “Open file” is selected, the Open box appears.

![Open box](image)

Select the file to be imported, and click **Open**.
<When "Open new file" is Selected>

When “Open new file” is selected, the Drive mode selection box appears.

Select the model of Inverter and the area. And type the last four digits of the software number. Click Next to continue, and the Mode selection box appears.

Note: Check the software number by checking the nameplate or using the digital operator. Refer to the Inverter instruction manuals for more information.
Select the value in each list box. Or click each **Edit** button and type the value. Click **Apply**. The following dialog box is displayed.

**Calculation**: Auto parameter calculation

Calculates motor parameters from the value of the motor nameplate or test report.

Only “Hz” is available for the constants related to frequency.

3. Select the motor in the Motor selection combo box, and click **Calculation**. The following dialog box is displayed.

Click **Cancel** to cancel autotuning, and return to the DriveWizard main window.
4. Click **Next**, and the following dialog box is displayed.

5. Enter each setting items required for tuning in the Value column.

6. Click **Next** and the following dialog box is displayed.
7. Click **Autotuning**. Tuning is started, and the following dialog box is displayed.

Status: Displays the status of tuning.

After tuning is finished, the tuned values are displayed in the After column of the Autotuning results list. Values that differ from the values before tuning are displayed in red.

Click **Back** to return to the tuning motor data set box.
8. Save the tuning results using either of the following methods.

<When saving all parameters>

Click **Save**, and the Save As box is displayed.

![Save As dialog box for saving all parameters]

Click **Save**.

<When saving tuned parameters and parameters needed for tuning>

Click **Save text** and the Save As box is displayed.

![Save As dialog box for saving tuned parameters and tuning parameters]

Click **Save**.
4.5 Test Run

4.5.1 Manual Operation

This function turns the motor at the set speed. The rotational direction and the speed setting can be verified without connecting an upper-level controller.

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
</table>
| Manual operation will cause the motor to rotate and can be dangerous.  
Be sure to check the user’s manual before execution.  
Pay particular attention to the following items.  
• Check the safety of the area around the drive unit.  
The motor runs at the set speed while the Forward or Reverse button is pressed. Make sure that the surrounding area is clear of any items that could interfere with the running of the motor.  
• Assign the Emergency Stop to the external terminal.  
If a communications error occurred or the PC or DriveWizard is shut down because of an error during a manual operation, the motor may continue to rotate. To stop the motor, use the Emergency Stop.  
• Please only use DriveWizard for changing inverter parameters.  
If a parameter (such as frequency units) is changed by any method other than DriveWizard, the motor speed can suddenly change and result in injury.  
• Reset the parameters to their original setting after an error. (V7, J7, G5)  
This feature will change the RUN source selection parameter temporarily. (RUN command selection, Frequency reference selection)  
After a communications error occurred or the PC or DriveWizard is shut down because of an error during a manual operation, reset the parameters for the operation method and reference selections to their original settings.  
• Restart the Inverter after an error. (G7, F7, L7)  
This feature will change the RUN source selection parameter temporarily. (ComCtrl, ComNet)  
After a communications error occurred or the PC or DriveWizard is shut down because of an error during a manual operation, restart the Inverter.  
• Recommendations for using DriveWizard  
Use DriveWizard for inverter setup and run test.  
Disconnect the motor from the load when using manual operation mode. |

Notes:  
1. If a baseblock command of Multi-function contact input selection is being input from the external terminal, this function can not be performed.  
2. For manual operations with the VarispeedG5 Inverter, set the Frequency of the reference setting and the monitor (o1-03) to 0.01 Hz units (factory setting).
The following conditions must be satisfied to carry out a manual operation.

- Remote is selected with the LOCAL/REMOTE key of the Digital Operator or in Multi-function contact input function.
- A fault is not detected.
- The Motor is not running.

Perform a manual operation using the following procedure.

1. In the DriveWizard main window, click Test Run, and then click Manual Operation. A warning message appears reminding you of the dangers that are possible when using this operation.

![CAUTION]

Manual Operation will cause the motor to rotate and can be dangerous. Be sure to check the user’s manual before execution. Pay particular attention to the following items.

1. Check the safety of the area around the drive unit.
   The motor runs at the set speed while the Forward or Reverse button is pressed. Make sure that the surrounding area is clear of any items that could interfere with the running of the motor.

2. Assign the Emergency Stop to the external terminal.
   If a communications error occurs or the PC or DriveWizard is shut down because of an error during a manual operation, the motor may continue to rotate. To stop the motor, use the Emergency Stop.

3. Please only use DriveWizard for changing inverter parameters.
   If a parameter (such as frequency units) is changed by any method other than DriveWizard, the motor speed can suddenly change and result in injury.

4. Restart the Inverter after an error.
   This feature will change the RUN source selection parameter temporarily. (CommCtrl, CommMode). After a communications error occurred or the PC or DriveWizard is shut down because of an error during a manual operation, restart the Inverter.

5. Recommendations for using DriveWizard:
   - Use DriveWizard for Inverter status and run test.
   - Disconnect the motor from the load when using manual operation mode.

Manual Operation will start OK? 

[OK] [Cancel]

Note: Caution contents differ depending on the Inverter type.

Click Cancel to return to the main window without performing a manual operation.
2. Click **OK**, and the Manual Operation box appears. If the motor is running, an error message will appear. Make sure the motor has stopped.

![Manual Operation Box (Default)](image1)

![Manual Operation Box (Minimized)](image2)

Note: The speed cannot be set in the minimized box.

**Frequency reference**

The left box shows the speed for the manual operation. The frequency reference can be changed in the right box.
4.5.1 Manual Operation

**Output frequency**
The output frequency box shows the actual running speed.

**Status**
The status box shows the Inverter status: During Forward Run, During Reverse Run, During Stop, Zero-speed, error, or Drive is not ready.

3. Check the speed for a manual operation. To change the speed, enter the frequency reference in the right Frequency reference box by typing or using the spin button and click **Enter**. The new speed will be displayed in the left Frequency reference box.

4. Click **Forward Run** or **Reverse Run**. A manual operation can be performed only while one of these buttons is pressed in.

Forward Run

Reverse Run

Note: The screen shots show the motor running by a forward run command or a reverse run command. The actual direction depends on the motor wiring or the parameter setting.
4.5.2 Pattern Operation

This function turns the motor in the set operation pattern.

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern operation will cause the motor to rotate and can be dangerous.</td>
</tr>
<tr>
<td>Be sure to check the user’s manual before execution.</td>
</tr>
<tr>
<td>Pay particular attention to the following items.</td>
</tr>
<tr>
<td>• Check the safety of the area around the drive unit.</td>
</tr>
<tr>
<td>The motor runs at the set speed while the Forward or Reverse button is pressed. Make sure that the surrounding area is clear of any items that could interfere with the running of the motor.</td>
</tr>
<tr>
<td>• Assign the Emergency Stop to the external terminal.</td>
</tr>
<tr>
<td>If a communications error occurred or the PC or DriveWizard is shut down because of an error during a pattern operation, the motor may continue to rotate. To stop the motor, use the Emergency Stop.</td>
</tr>
<tr>
<td>• Please only use DriveWizard for changing inverter parameters.</td>
</tr>
<tr>
<td>If a parameter (such as frequency units) is changed by any method other than DriveWizard, the motor speed can suddenly change and result in injury.</td>
</tr>
<tr>
<td>• Reset the parameters to their original setting after an error. (V7, J7, G5)</td>
</tr>
<tr>
<td>This feature will change the RUN source selection parameter temporarily. (RUN command selection, Frequency reference selection)</td>
</tr>
<tr>
<td>After a communications error occurred or the PC or DriveWizard is shut down because of an error during a pattern operation, reset the parameters for the operation method and reference selections to their original settings.</td>
</tr>
<tr>
<td>• Restart the Inverter after an error. (G7, F7, L7)</td>
</tr>
<tr>
<td>This feature will change the RUN source selection parameter temporarily. (ComCtrl, ComNet)</td>
</tr>
<tr>
<td>After a communications error occurred or the PC or DriveWizard is shut down because of an error during a pattern operation, restart the Inverter.</td>
</tr>
<tr>
<td>• Use care when using pattern operation mode with positioning applications.</td>
</tr>
<tr>
<td>Use care when using pattern operation mode with positioning applications. As there is no position feedback, make sure that there are no alignment/position problems with the machinery. Running the motor for an extended period of times when such problems exist can be dangerous and cause damage.</td>
</tr>
<tr>
<td>• Regards display of operations while running.</td>
</tr>
<tr>
<td>This function displays the operational status while the drive is running, although there are times when the motor operations and the time chart will not match due to various factors such as surrounding environment. Please do not rely completely on the time chart.</td>
</tr>
<tr>
<td>• Recommendations for using DriveWizard</td>
</tr>
<tr>
<td>Use DriveWizard for inverter setup and run test.</td>
</tr>
<tr>
<td>Disconnect the motor from the load when using pattern operation mode.</td>
</tr>
</tbody>
</table>
Notes: 1. If a baseblock command of Multi-function contact input selection is being input from the external terminal, this function can not be performed.
2. The pattern operation is based on the settings, Acceleration/deceleration time 1 and Motor 1, of the multi-function contact input selections. Acceleration/deceleration time 2, 3 and Motor 2 selections are not available in the pattern operation.
3. For pattern operations with the VarispeedG5 Inverter, set the Frequency of reference setting and the monitor (o1-03) to 0.01 Hz units (factory setting).

Perform a pattern operation using the following procedure.

1. In the DriveWizard main window, click Test Run, and then click Pattern Operation. A warning message appears reminding you of the dangers that are possible when using this operation.

Click Cancel to return to the DriveWizard main window without performing a pattern operation.
2. Click **OK**, and the Pattern Operation box is displayed.

Note: The operation pattern cannot be set in the minimized box.
3. Enter each item for operation conditions in the Run Pattern area, click **Apply**. The operation pattern is displayed in a graph.

The line in the graph corresponding to the selected operation pattern in the operation pattern area is displayed in red.

*<If the Inverter is not set to stop at the end in the set operation pattern>*

If the Inverter is not set to stop at the end in the set operation pattern, the following dialog box is displayed.

Click **Yes** to reset the operation pattern to zero-speed automatically.
Click **No** to return to the Pattern Operation box and set the operation pattern again.
4. Click **Run**, a pattern operation is performed.

**Output frequency:** Displays the output frequency

**Elapsed time:** Displays the elasped time. The display starts again from zero in a repeat operation.

**Number of times:** Displays “Number of finished operation / Number of set repeat operation”

The line that indicates executing operation pattern blinks in green. And the corresponding line in the operation pattern area is displayed in green.

To stop the pattern operation, click **Stop**.
(Open) button

The pattern operation file can be loaded in the Open box.

1. Click the button, the Open box appears.

<img src="image.png" alt="Open box screenshot">

<If an operation pattern is being edited>

If an operation pattern is being edited, a message appears and confirms if you want to save the current settings.

Click **OK** to save the current settings.
Click **No** to overwrite the current settings without saving the current settings.
Click **Cancel** to return to the Operation Pattern box.

2. Select the file to be loaded, and click **Open**. The Operation Pattern box is displayed.

If the following items differ between in the specified file and in the current settings, the following dialog box is displayed.
- Acceleration time
- Deceleration time
- Accel/decel time setting unit
- Display scaling
Click **OK** to continue loading the file. After the loading is finished, check the values of those parameters.

**Save** button

The operation pattern data can be saved in a specified file.

Click the **Save** button, and the Save As box is displayed.

Click **Save**, and operation pattern data is saved in the specified file. Click **Cancel** to return to the Pattern Operation box.
5 Technical Support

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Revision History

The revision dates and numbers of the revised manuals are given on the bottom of the front cover.

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<tr>
<th>Date of Printing</th>
<th>Rev. No.</th>
<th>Section</th>
<th>Revised Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 2006</td>
<td>06-4</td>
<td>-</td>
<td>First edition</td>
</tr>
</tbody>
</table>