

## © DriveView v3.0 User's Manual

Driveview 3.0 is a Windows based drive commissioning tool that allows direct control, monitoring and setup of all parameters of LSIS's AC drives.

It's function is to make commissioning easier by accessing all of the drives parameters and monitoring the drive's status.

### [Operating condition]

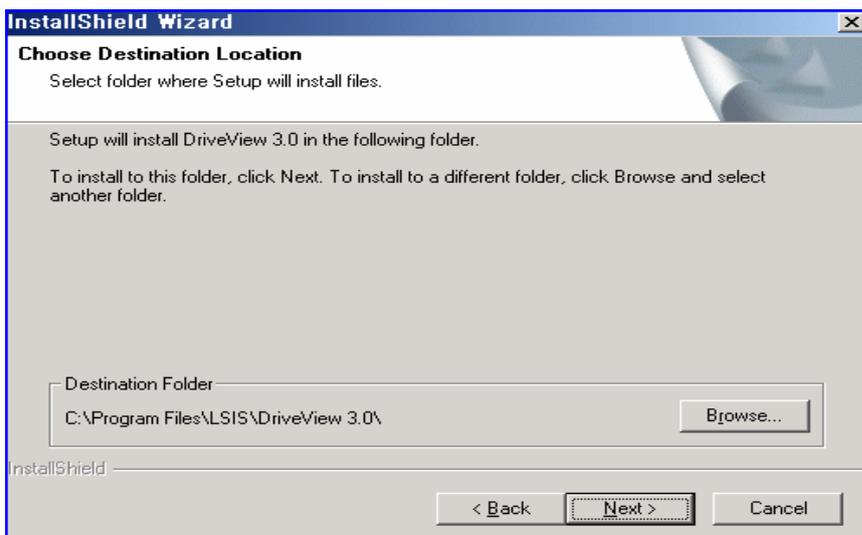
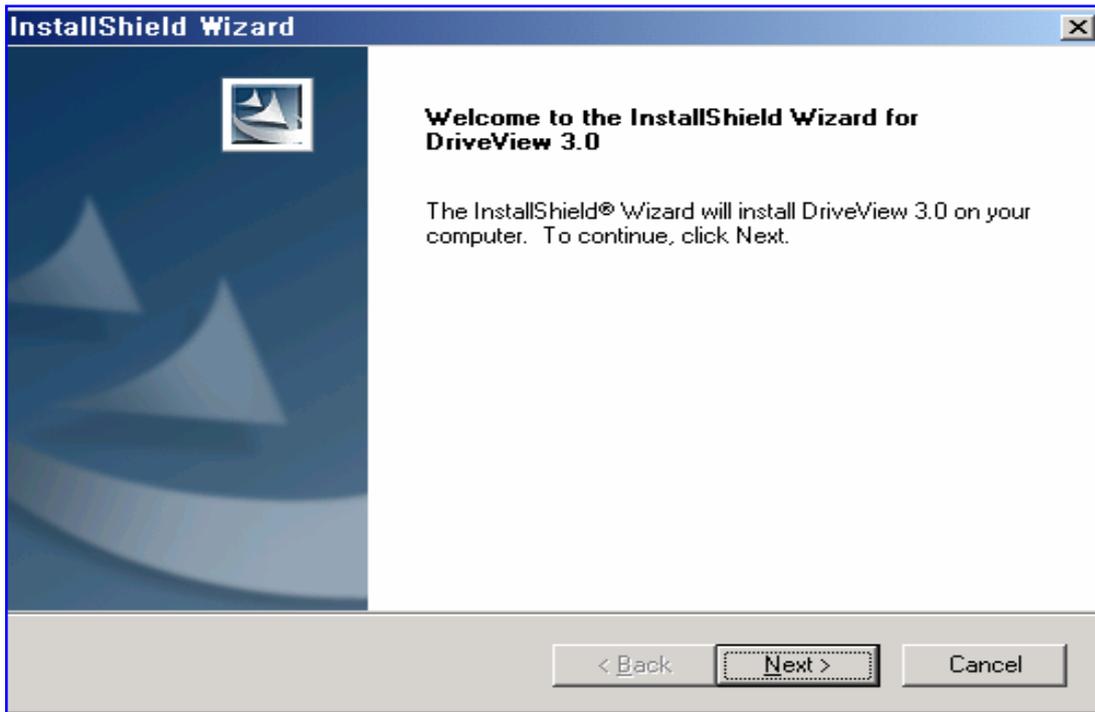
- Communication protocol: RS485 (LS protocol, MODBUS-RTU)
- Communication speed: 1200, 2400, 4800, 9600, 19200, 38400 bps
- Max. number of Station: Max. 31 (No.1 ~ 255)
- Supported drive series: SV-iS5, SV-iV5, SV-iC5, SV-iP5A, SV-iG5A

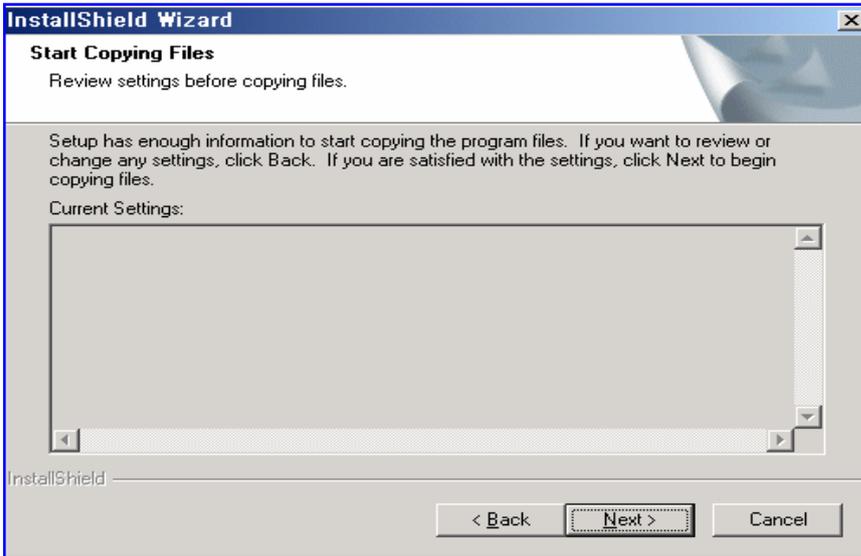
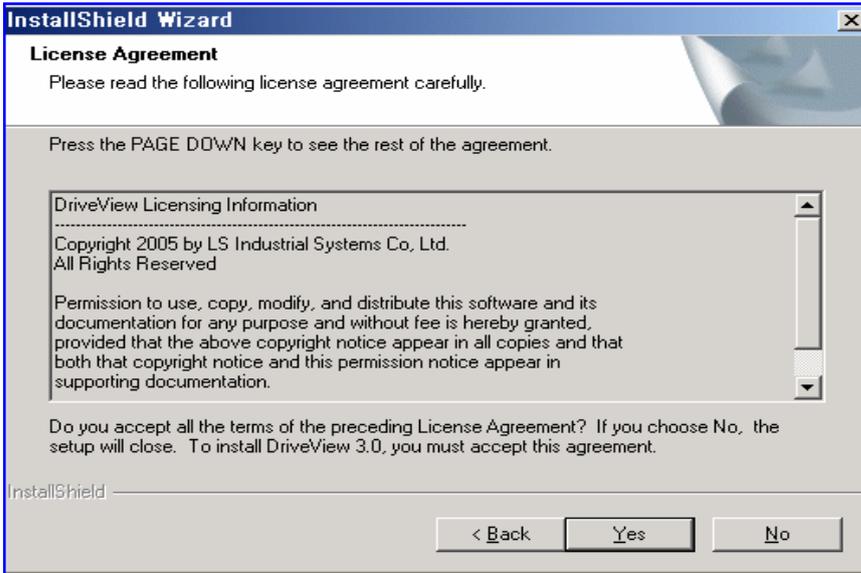
### [System requirement]

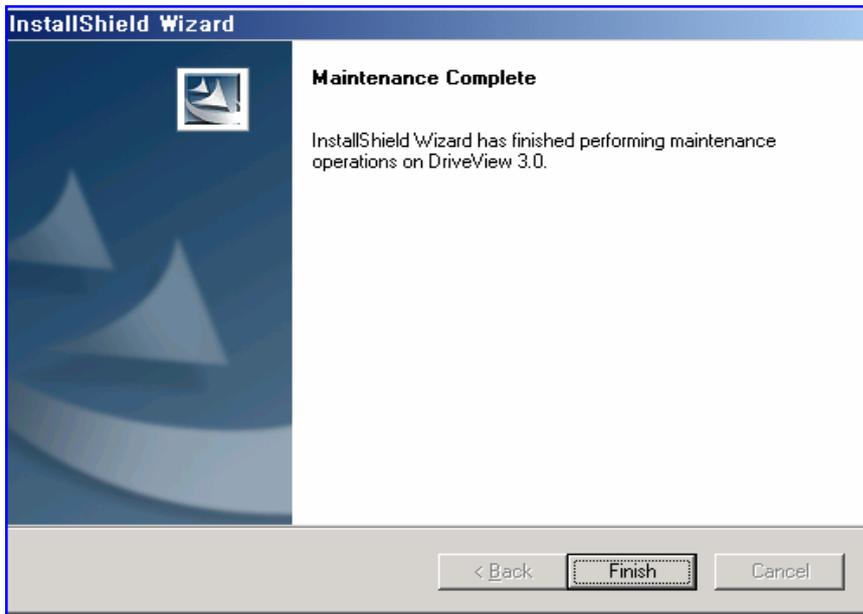
- Operating system: Windows98/Me/2K/XP
- Processor: Pentium 3 500Mhz or higher
- System memory: 64MB
- Minimum Hard disk space: 30MB

## 1. Installation

Load the installation program from LSIS. Then run the program. The "installshield wizard for DriveView 3.0" will automatically start. Follow the instructions as shown on the following screens to install DriveView 3.0.



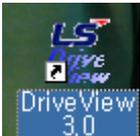




## 2. Overview

### 2.1 Getting started

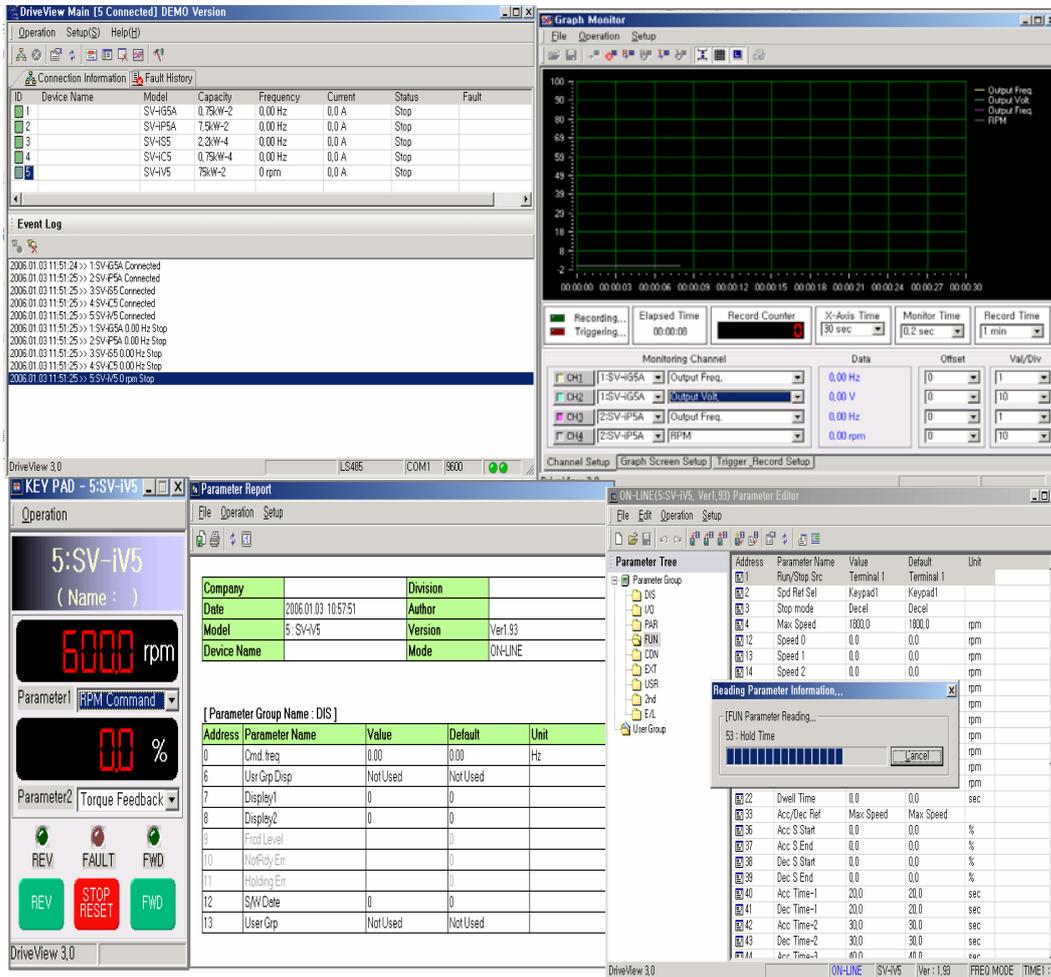
DriveView is started by clicking the "DriveView" icon, or it can be activated by running "Driveview30.exe".



### 2.2 Main functions

"DriveView" consists of 5 main screens.

- **Main Window**  
Shows the status and information of all the connected drives.
- **Common Keypad**  
Monitors and writes the essential data of the drives.
- **Parameter Editor**  
Supports ON-LINE & OFF-LINE programming of the drives parameters.
- **Report view**  
Creates reports of the drives parameters and saves them in Excel or HTML format.
- **Graph Monitor**  
Monitors and trends the drive's data.

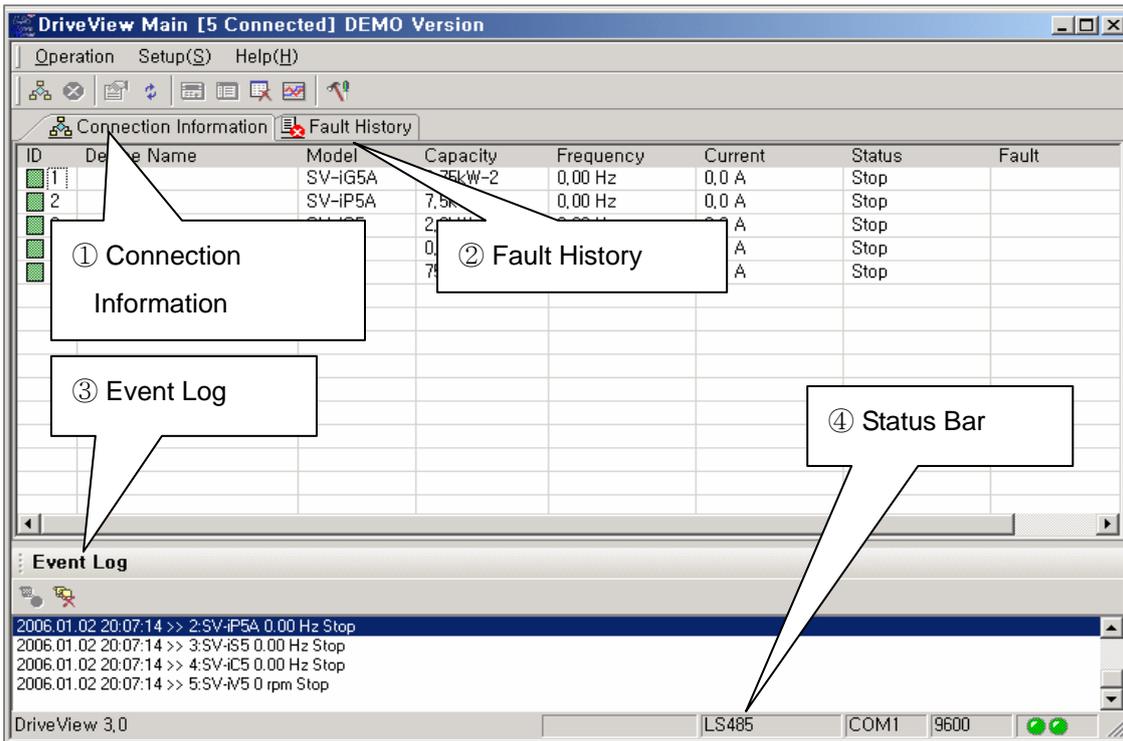


## 2.3 Main Window

### Main window

The Main Window screen manages all the sub windows such as Keypad, On-line & Off-line parameter, and Report and Graph monitoring. Once the Main Window is closed, every sub-window will also be closed.

The main window is composed of three functional sections. They are connection information, fault history logger, and event logging window of drive's connection time and basic operation.



#### I. Connection Information

Shows the information of the drives connected via the communication network.

#### II. Fault History

Shows and registers the fault history that has occurred after starting DriveView. It can display the previous 200 faults.

#### III. Event Log

Shows and registers the operation status of the drives connected via the communication network.

#### IV. Status Bar

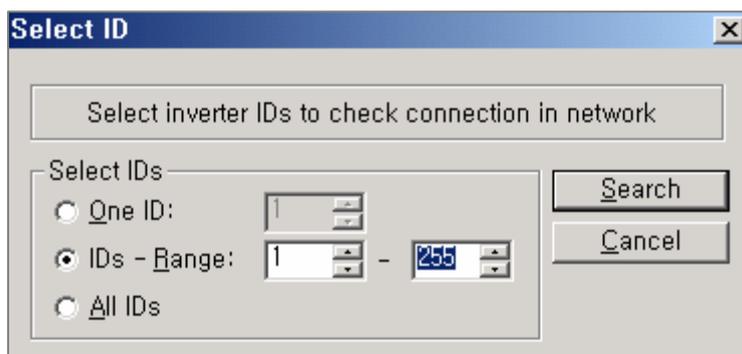
Displays the connection status of DriveView and the status of the current process.

**A. Operation** To connect to the drives on the network, go to the operation tab and select Connect...



The following screen will appear.

- **Select ID**



This enables DriveView to locate the drives on the communication network. The following options can be selected:

- I. One ID: Checks for a specific drive ID
- II. Ids - Range: Checks for drives with an ID number in a certain range.
- III. All IDs: Checks for all drives in the range of (1 – 255)

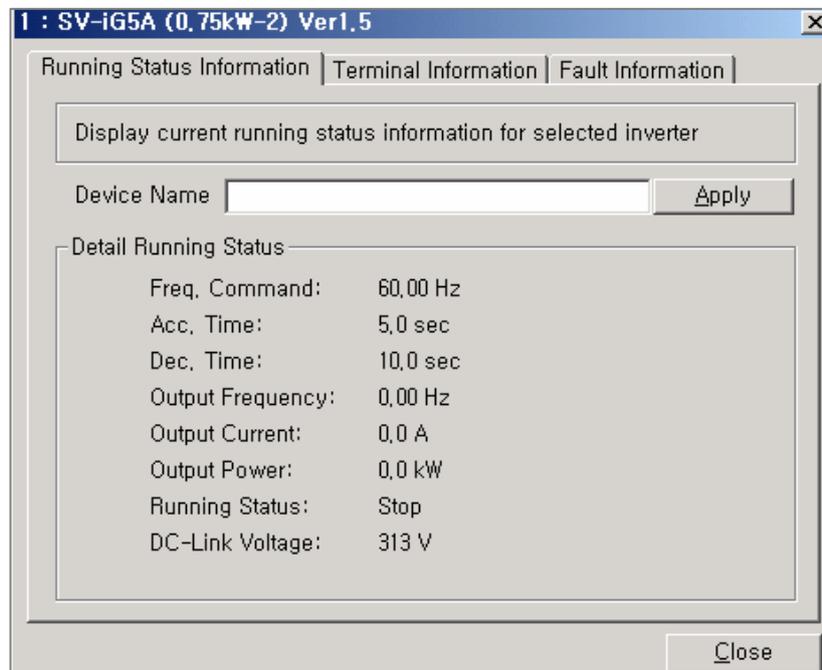
- **Cancel 'Select ID'**

Cancels the operation.

- **Inverter Information screen should appear.**

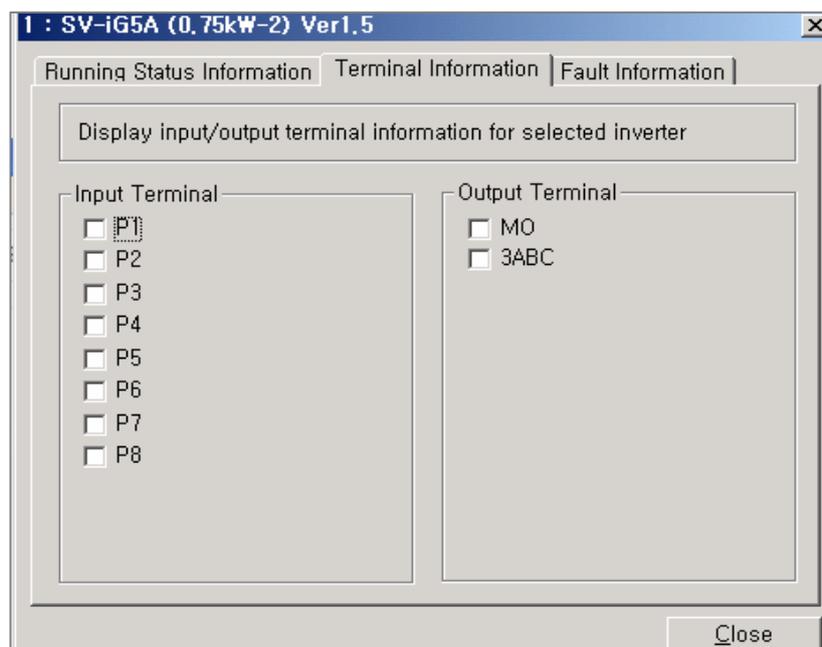
- ① **This shows 'Running Status Information', 'Terminal Information', and 'Fault Information for the selected drives.**

- I. **Running Status Information:** Displays current running status information of the selected drive.

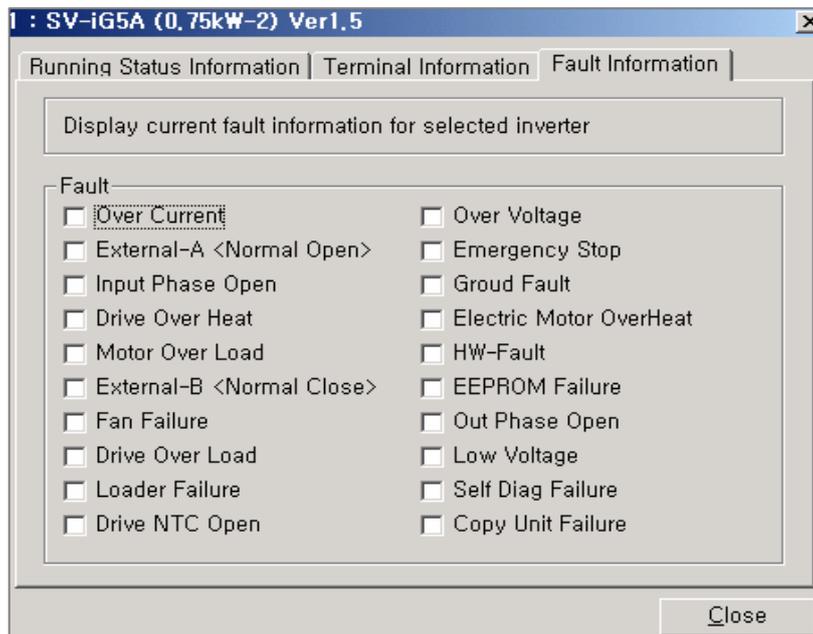


Device name: The user can designate a name for the connected drive.  
Click 'Apply' after entering a name.

- II. **Terminal Information:** Displays the status of all the input and output terminals,



### III. Fault Information: Displays the fault history of the selected drive.



- **Update**

- ① Repeats the 'Connect' process for the selected drives from the connection information window.

- **Keypad**

- ① Activates 'Keypad window' for the selected drive from the connection information window.

- **Online Parameter Editor**

- ① Activates 'online parameter editor' for the selected drive from the connection information window.

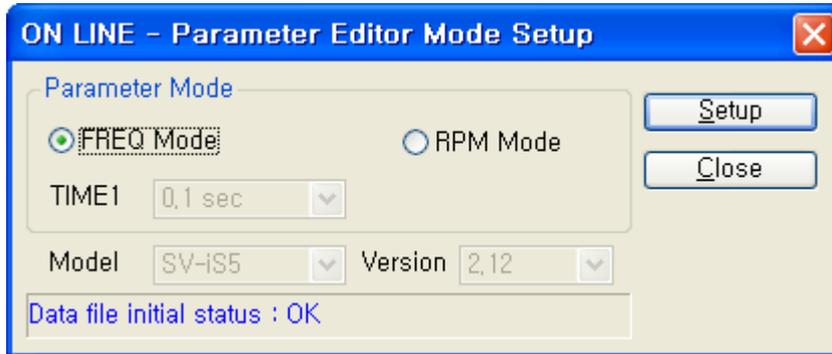
#### <Inverter Successful Connection>

The "Inverter Successful Connection" message indicates the following:

- a. The drive that is found is a drive that is supported by Driveview.
- b. DriveView has the proper data file for the S/W version of the connected drive.

**Note: If no data file is found for the specific S/W version, please contact the LSIS to get the correct data file.**

### [ON-LINE Parameter Editor]



#### I. FREQ Mode/RPM Mode

User can select if the parameters will be displayed in RPM or in Hz.

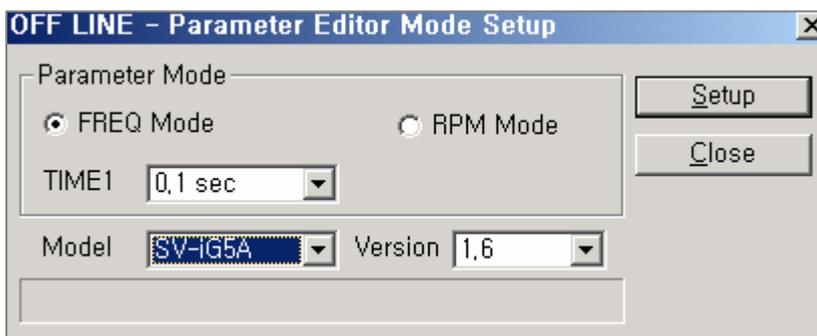
#### II. TIME1

TIME1 selects how many significant digits will be used in any parameter dealing with time.

#### ● Offline Parameter Editor

Offline Parameter Editor enables the user to edit and check parameters without connection with the drives. For proper operation, the user must know the exact model and software version of the drive.

### [OFF-LINE Parameter Editor]



**I.    FREQ / RPM Mode**

User can select if the parameters will be displayed in RPM or in Hz.

**II.   TIME1**

TIME1 selects how many significant digits will be used in any parameter dealing with time.

**III.   Inverter Series / Inverter Version**

Selects the drive series and the version of the drive.

**IV.   Setup**

The 'Setup' button reads the data file that corresponds to the information that was entered in steps I – III. If an error occurs while reading the data, an error message will appear on the information bar located at the bottom of the screen. If the reading process is successful, the parameters of the drive will be initialized. The Parameter Editor window will start with the factory default values.

● **Graph Monitor**

More than 1 drive must be connected via the communication network to start Graph Monitor. Graph Monitor is permitted on only one window. Maximum number of monitoring channels is 4.

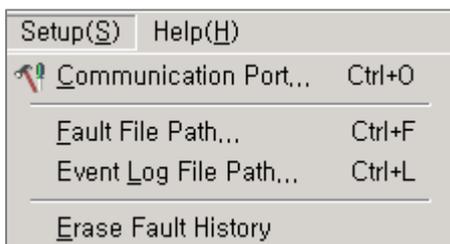
● **'Event Log' Start**

Starts 'Event Log'. Drive View will log every event and record the time of the event. An event is a change in operation status, connection status, or fault status of every drive.

● **'Event Log' Stop**

Stops the 'Event Log'.

**B. Setup**



● **Communication Port Setup**

Sets up communication port.

Communication Port Setup

Setup communication port and operation mode matching to your network environment for proper operation.  
[ Notice When Select Protocol Mode ]  
When select MODBUS-RTU mode, the monitoring speed is more slow than LS485 mode. Therefore LS485 mode is preferable to MODBUS-RTU mode

Serial Communication Port

Comm. Port: COM1  
Comm. Baud: 9600 BPS  
Data Bit: 8  
Parity Bit: None  
Stop Bit: 1

RS485 TX Enable Control

Auto Mode  
 RTS Mode: Active High

Operation Mode

Protocol Mode: LS485  
TimeOut: 1000 msec  
Retry Number: 3

OK  
Cancel

### I. Serial Communication Port

Selects the serial communication port of the user's computer. The defaults of the data bit, parity, and stop bit are 8 bit, none, and 1 bit, respectively. They must match the connected drives.

### II. RS485 TX Enable Control

An RS232-485 converter must be used to connect the computer using RS-232C to a drive using RS-485. Please find the best converter for your application. The performance may differ depends on the converter that is used.

Most RS232-485 converters use the function of Auto Tx Enable Control.

There are older systems of RS232-485 that do not support Auto Tx Enable Control. DriveView 3.0 can be used on these systems with RTS signal control of RS-232C.

[ Tested RS232-485 converter ]

'Auto Tx Enable' type: CNV485A (RealSYS)

'RTS control Tx Enable' type : Transio A53 (MOXA)

### III. Operation Mode

#### ▣ Protocol Mode

Supports LS485 & MODBUS-RTU

[Notice]

LS 485 protocol is more efficient and faster than MODBUS-RTU for data monitoring. LS485 protocol enables Drive View to simultaneously monitor a maximum of 8 discrete address data points with monitor registration request and operation command. This is not possible with MODBUS-RTU. So it is recommended to use LS485 protocol for fast and reliable communication

#### ▣ TimeOut

Time Out is the delay time that Drive View will wait for a response from the drive.

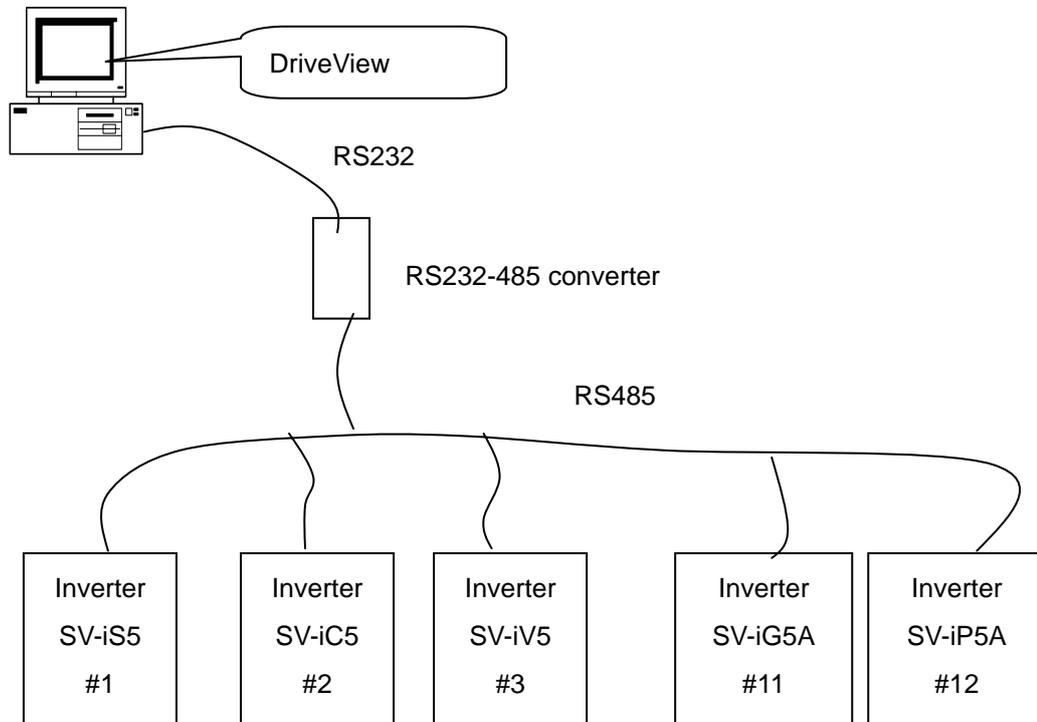
#### ▣ Retry Number

If there's no response or error response, DriveView will try to resend same request to drive for the designated number of times. Driveview will disconnect the drive and will not do anything to the drive, if there's no response for the designated number of repeated request.

We recommend you to set maximum value for stable operation.

#### IV. Network Installation

Please connect RS-485 wire to signal (+) and signal (-) terminals. After checking the wiring, power up the drive.



- **Fault History file save**

Sets the file directory of saving fault history. "history.log" of Log directory is the default in DriveView 3.0.

- **Event Log file save**

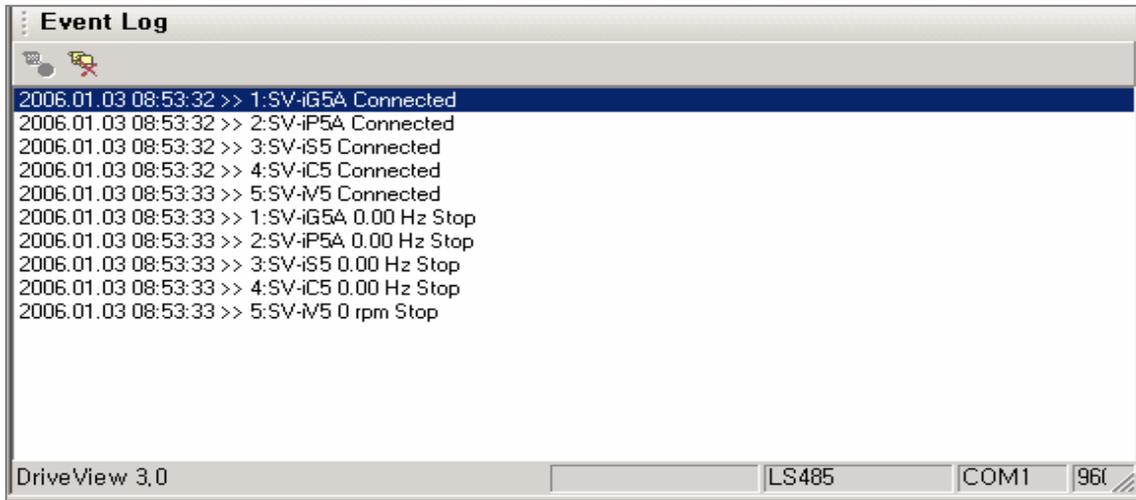
Sets the file directory of saving Event Log file. "event.txt" of Log directory is the default in DriveView 3.0.

- **Fault History delete**

Deletes all fault history saved previously.



## E. Event Log



After starting DriveView 3.0, this window can display the event log of the drive. The previous 200 events can be displayed.

The Event Log is deleted automatically each time Drive View is started.

## F. Status bar

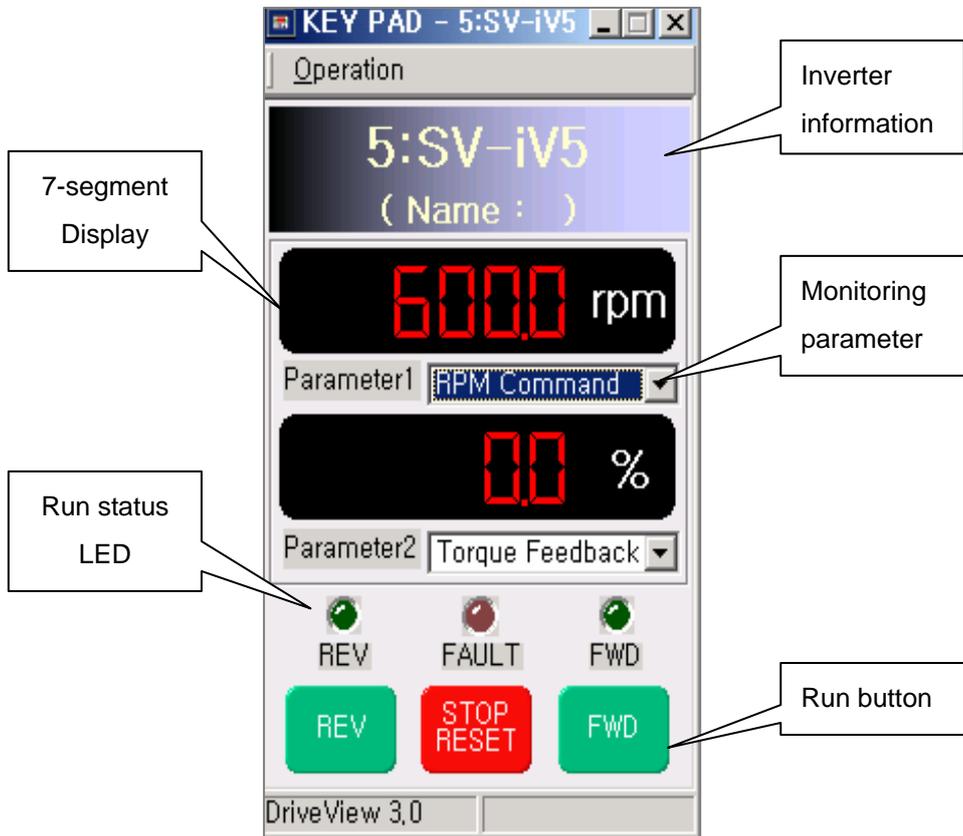


- **Status bar of 'Connect'**  
After clicking 'Connect', it displays the operation status.
- **Graph mode**  
Informs the activation of Graph mode from 'Graph Monitor' window.
- **Protocol mode**  
Shows the communication Protocol currently used.
- **Communication port**  
Shows the communication port currently used.
- **Communication speed**  
Shows the baud rate of the communication network.
- **Communication transmission/reception status**  
Shows the communication transmission and reception status.

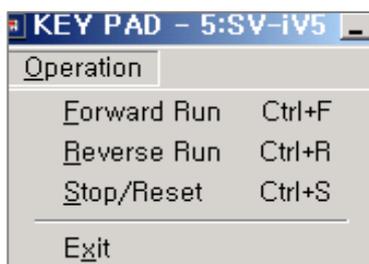
## 2.4 Common Keypad

Keypad window is used for monitoring the drive except for Input/Output terminal and fault information. Parameter values can be changed in this window if the parameter has writable attribute.(Command frequency, acc/dec time)

Select the drive at Connection Information list of Main window and select 'Keypad'.



### A. Operation



- Forward Run  
Will start the drive in the forward direction
- Reverse Run  
Will start the drive in the reverse direction.
- Stop/Reset  
Will stop the drive.

### B. Inverter Information

Displays communication station number, model and device names of inverter.

### C. 7-segment Display

Displays parameter data which is selected in **Monitoring Parameter**.

### D. Monitoring Parameter

Select the parameter to monitor.

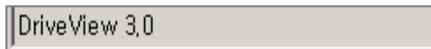
### E. Run Status LED

Displays present status of inverter operation.

### F. Run Button

Sets inverter operation.

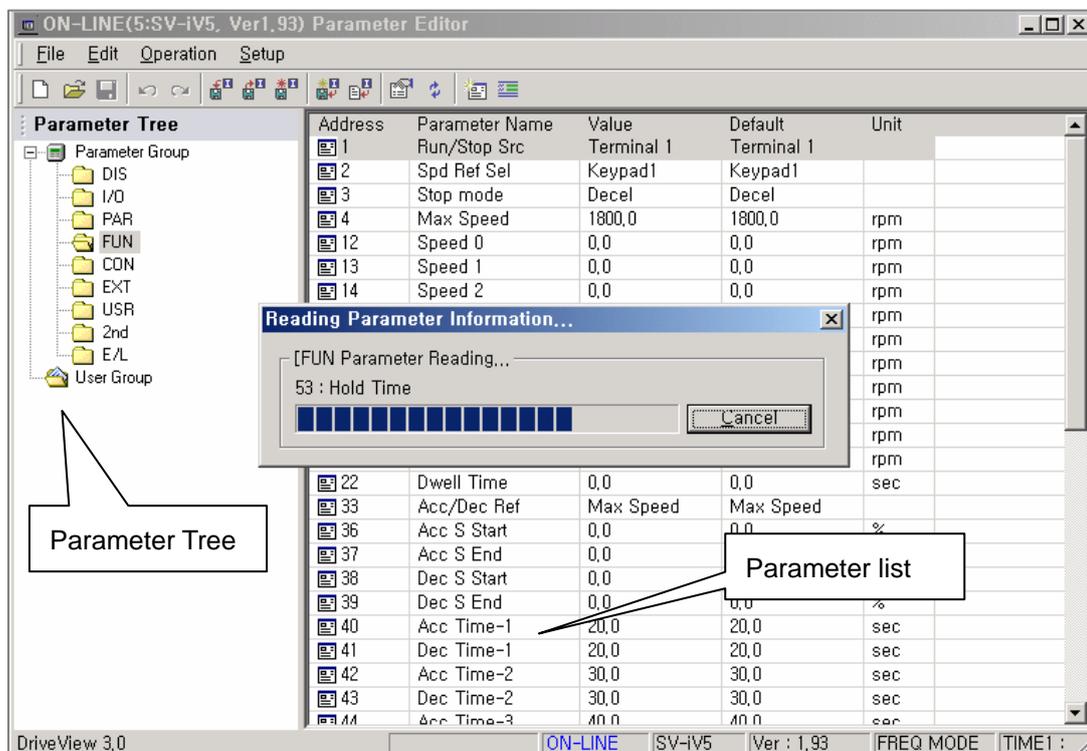
### G. Status Bar



Displays Graph mode operation in **Graph Monitor Window**.

## 2.5 Parameter Editor

Parameter editor has a parameter Write/Edit function in inverter group and User Group. DriveView 3.0 supports ON-LINE mode and OFF-LINE mode. Select inverter on **Connection Information** list and then click **Online Parameter Editor** on the menu or toolbar.



### A. Parameter Tree

Displays all Parameter Groups for the selected drive. It also displays a User group that can be created by the user.

- **Click the left mouse button on selected group**

It displays the parameters in the selected parameter group.

- **Double click left mouse button on selected group**

It reads the parameter of selected group from the connected drive at Online mode.

- **Selected item in parameter list is Drag & Drop to User Group in Parameter Tree**

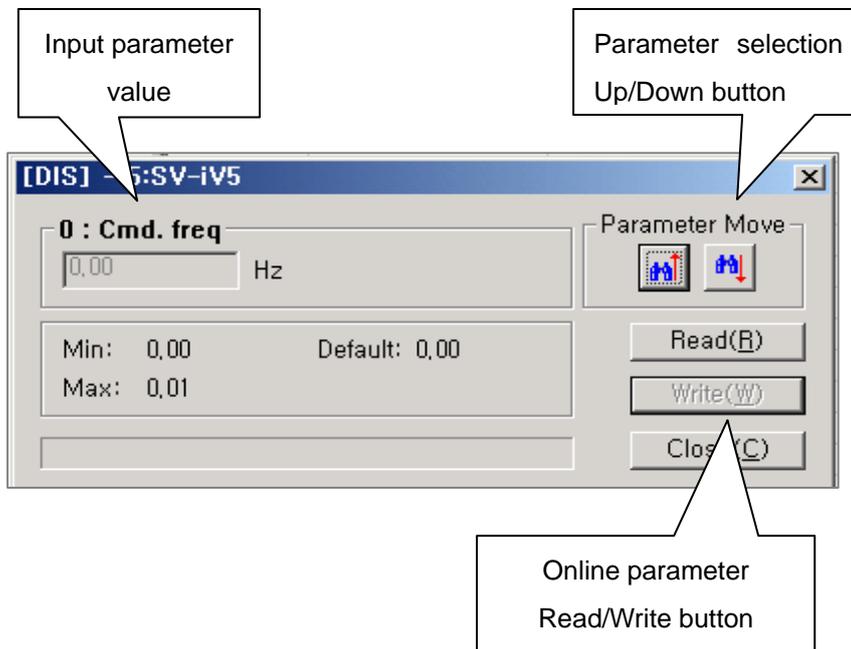
If a new parameter needs added to the User Group, select the parameter in the parameter list, and then drag and drop into the User Group folder.

## B. Parameter List

Displays the parameter of selected group in Parameter Tree.

- **Double click in Online mode**

Used to edit the selected parameter. (Read/Write of corresponding parameter value from connected parameter)



- ▣ **Up/Down button for Parameter Move**

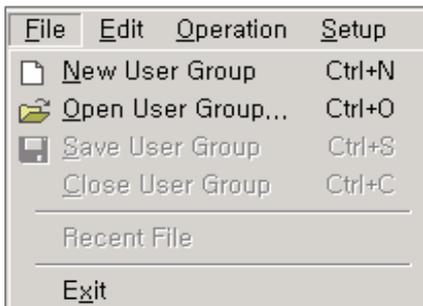
Used to move between parameters in parameter list.

- **Double click in Offline mode**

In offline mode, by double-clicking value, parameter value can be changed.

Address	Parameter Name	Value	Default	Unit
0	Cmd, freq	0,00	0,00	Hz
1	ACC	5,0	5,0	sec
2	DEC	10,0	10,0	sec
3	DRV	CMD_TERM1	CMD_TERM1	
4	FRQ	CMD_KPD	FREQ_DIG1	
5	ST 1	CMD_TERM1	10,00	Hz
6	ST 2	CMD_TERM2	20,00	Hz
7	ST 3	Comm.	30,00	Hz
8	CUR	0,00	0,00	
9	RPM	0,00	0,00	
10	DCL	0,00	0,00	
11	USR	0,00	0,00	
13	DRC	Forward	Forward	
14	DRV2	Loader	Loader	
15	FRQ2	Loader-1	Loader-1	

### C. File



#### ● New User Group

Make new user parameter group that corresponds to the selected inverter type and version. After making a new parameter, select the parameter in the parameter list and then drag-and-drop.

Address	Parameter Name	Value	Default	Unit
0	Cmd, freq	0,00	0,00	Hz
1	ACC	5,0	5,0	sec
2	DEC	10,0	10,0	sec
3	DRV	CMD_TERM1	CMD_TERM1	
4	FRQ	FREQ_DIG1	FREQ_DIG1	
5	ST 1	10,00	10,00	Hz
6	ST 2	20,00	20,00	Hz
7	ST 3	30,00	30,00	Hz

#### ● Open User Group

Opens saved User Group file (\*.usr) and adds file data of selected group file to User Group in Parameter Tree.

#### ● Save User Group

Saves edited user Parameter Group in User Group file (\*.usr).

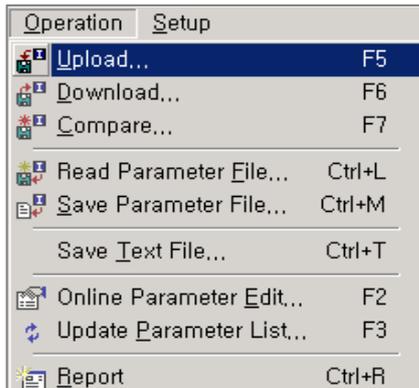
- **Close User Group**

Closes the selected User Group item in Parameter Tree.

- **Recent File**

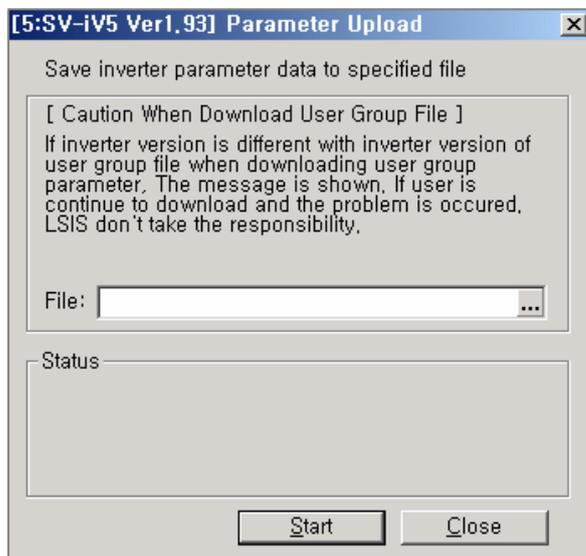
Displays the path of User Group file that has been recently opened.

#### D. Operation



- **Parameter Upload**

Reads the parameter information of connected drive in Online mode and saves in selected file.



- ▣ **In case of choosing Parameter file (\*.par) path**

Reads all parameter information related to the selected drive type and version from the connected drive. It saves all parameter information in specified file path.

- ▣ **In case of choosing User Group file (\*.usr)**

Opens specified User Group file and saves only the selected parameter information in the User Group of the connected drive.

- **Parameter Download**

Downloads parameter values in selected file in Online mode from the connected drive.



- ▣ **In case of choosing Parameter File (\*.par) path**

Opens the selected parameter file to check inverter type and version and then downloads the parameter information from the drive.

- ▣ **In case of choosing User Group file**

Open the selected User Group file to check inverter type and then downloads the parameter information from the drive.

**< Warning >**

**If the version is different, dialog box appears asking whether or not to download. Please make sure that there are no parameter differences between the version of the file and the drive. DriveView will download the data file regardless of in differences of the data file, and it is the user's liability to check the parameter consistency after downloading it.**

- **Parameter Compare**

Compares parameter value of selected file with correspondent parameter of connected drive in Online mode. It will display the different parameter information.



**In case of choosing Parameter file (\*.par) path**

Selected Parameter file is compared with connected drive's parameters for the same drive's type and version. Different parameter information will be displayed.

**In case of choosing User Group file (\*.usr) path**

Selected User Group is compared with corresponding parameter in drive. Different parameter information will be displayed.

● **Read Parameter File**

Open Selected parameter file (\*.par), and it is compared with current parameter of the selected drive. Different parameter information will be displayed.

● **Save Parameter File**

Saves current parameter value of Parameter Editor in selected parameter file (\*.par).

● **Save Text File**

**ON-LINE mode**

All Parameter information of connected inverter is reflected in Parameter Editor and then saves as text file (.txt).

**OFF-LINE mode**

All parameter information setting in Parameter Editor saves as text file (.txt)

● **Online Parameter Edit**

Used to change the selected parameter value in the parameter list in ON-LINE mode.

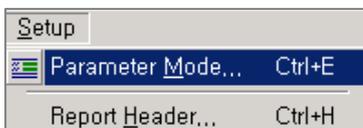
- **Update Parameter List**

Used to update parameters in parameter list from selected Parameter Group and User Group at Parameter Tree in ON-LINE mode.

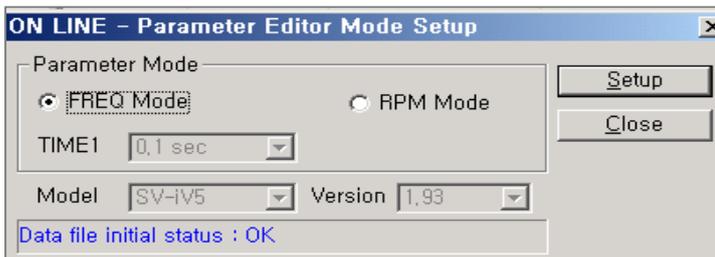
- **Parameter Report**

Displays the parameter of selected Parameter Group and User Group as Report type. Select the Parameter Group in Parameter Tree and then Use 'Report' function.

### E. Setup

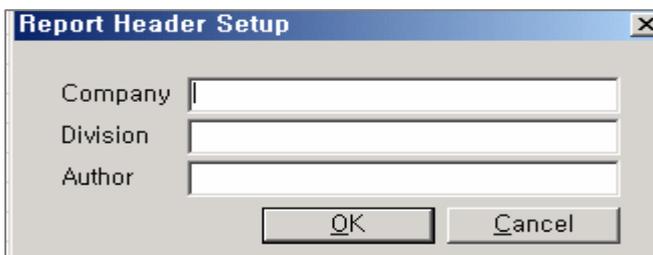


- **Parameter Editor Mode Setup**



Used to change the setups when Parameter Editor is executed. Please refer to page 8 for more details.

- **Report Header Setup**



Used to input the user information to display on the Report View's header.

### F. Status bar



It displays Graph mode operation status, ON/OFF-LINE status, Inverter type, Inverter

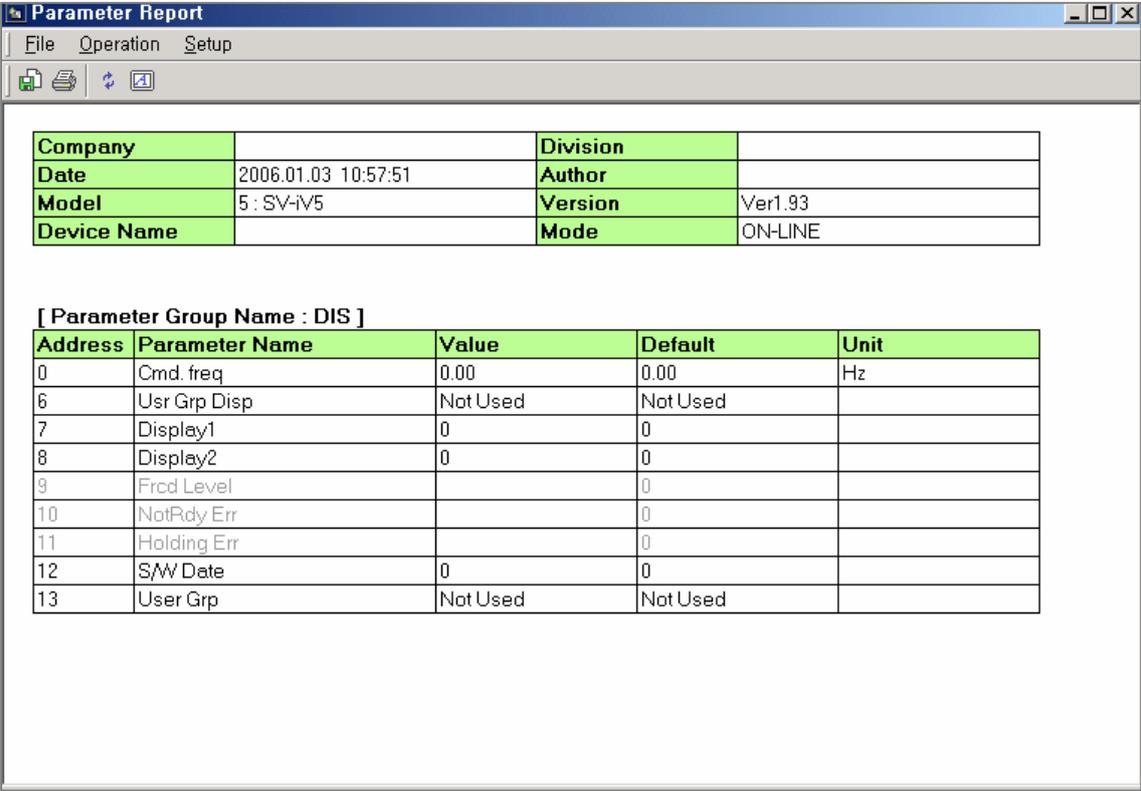
version, Parameter Editor setting information (FREQ MODE and TIME1 value) and all parameter number of selected parameter group.

## 2.6 Parameter Report

Report window belongs to the parameter editor, and it imports the edited parameter data into a report format. The user can save the data into Excel or HTML format.

Select the parameter group to display on the Parameter Tree, and click **Report** on the

**Operation** menu or click **Report** .



Company		Division	
Date	2006.01.03 10:57:51	Author	
Model	5 : SV-IV5	Version	Ver1.93
Device Name		Mode	ON-LINE

[ Parameter Group Name : DIS ]				
Address	Parameter Name	Value	Default	Unit
0	Cmd. freq	0.00	0.00	Hz
6	Usr Grp Disp	Not Used	Not Used	
7	Display1	0	0	
8	Display2	0	0	
9	Frcd Level		0	
10	NotRdy Err		0	
11	Holding Err		0	
12	S/W Date	0	0	
13	User Grp	Not Used	Not Used	

### A. File

- **File Export**

Allows user to export the selected parameter group data to an excel (\*.xml) or HTML (\*.htm) file.

- **Print**

Prints the selected parameter group data as a report type.

### B. Operation

- **Update**

Updates the Report window based on the recent parameter data.

### C. Setup

- **Report Header**

Sets the report header information.

## 2.7 Graph Monitor

The Graph Monitor window monitors the drives including input/output terminal and fault information. These are displayed in a scope format and can be saved into a file. Monitoring can be paused, and the current screen can be saved when a user customized trigger event occurs.

The monitoring of the main and sub windows can be paused or activated through **Graph Watch Mode**. If the other windows are closed, the graph mode related data will be transmitted faster for more accurate monitoring.

The screenshot shows the Graph Monitor window with a menu bar (File, Operation, Setup), a toolbar, and a main graph area. The graph has a vertical axis from -2 to 100 and a horizontal axis from 00:00:00 to 00:00:30. A legend on the right lists: Output Freq., Output Volt., Output Freq., and RPM. A callout '① Graph Window' points to the graph area.

Below the graph is a control panel with several sections:

- Recording/Triggering:** Recording... (green), Triggering... (red).
- Elapsed Time:** 00:00:08
- Record Counter:** [Red display]
- X-Axis Time:** 30 sec
- Monitor Time:** 0,2 sec
- Record Time:** 1 min

The **Monitoring Channel** section contains:

Channel	Drive	Variable	Data	Offset	Val/Div
CH1	1:SV-IG5A	Output Freq.	0,00 Hz	0	1
CH2	1:SV-IG5A	Output Volt.	0,00 V	0	10
CH3	2:SV-IP5A	Output Freq.	0,00 Hz	0	1
CH4	2:SV-IP5A	Output Freq.	0,00 rpm	0	10

Buttons for Channel Setup, Graph Screen, and Trigger\_Record Setup are also visible. A callout '② Monitoring Status Display and Time Settings' points to the recording and time controls. A callout '③ Monitoring Variables and Graph Settings' points to the channel configuration table.

### ▣ Graph Monitor Key Functions

#### ① Graph Window

Shows the collected parameter data of the selected monitoring channel.

For more information, see the description below in **Menu and Toolbar**.

## ② Monitoring Status Display and Time Setting



### A. Recording / Triggering

Displays whether data is being recorded and if the trigger event has occurred.

### B. Elapse Time

Displays the elapsed time of the monitoring function. (Hour/Minute/Second)

### C. Record Counter

Displays the total number of the recorded channels.

### D. X-Axis Time

Sets the time scale for the X-axis.

### E. Monitor Time

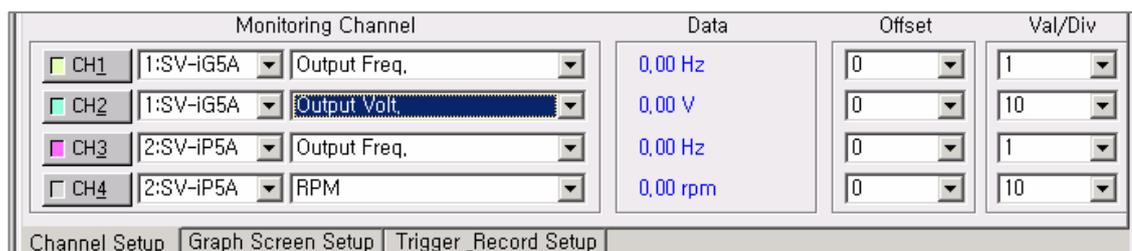
Sets the time intervals.

### F. Record Time

Sets the sampling interval.

## ③ Monitoring Variables and Graph Setting

### A. Channel Setup (supports a total of 4 channels)



#### ■ ON/OFF Button

Select this button to turn on or off the corresponding channel. The drive selected monitoring variable will be enabled or disabled. If the switch is turned off during monitoring, corresponding graph line will disappear from the graph window.

#### ■ Inverter Station Setup

Select the drive to monitor.

■ **Parameter Variables Setup**

Selects the monitoring variable to monitor in a graph mode.

■ **Data**

Displays recently collected data value during monitoring.

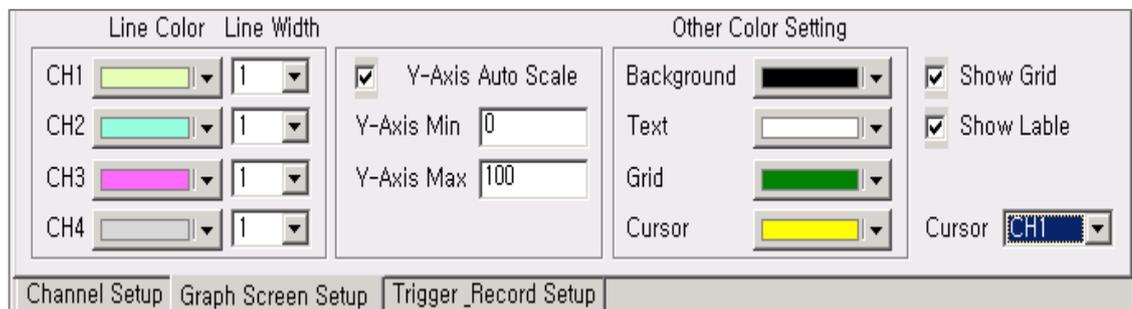
■ **Offset**

Means a certain value that is added to or subtracted from the collected channel parameter data. When several parameters are monitored, this is used to get a whole view of the graph by differing the Y-axis origin using the offset value.

■ **Val/Div**

Means a certain value that is multiplied to the collected channel parameter data. When several parameters are monitored, this is used to prevent the state that the graph line is displayed as a straight line for reason of one parameter value's unit is too big and the other is too small.

**C. Graph Screen Setup**



■ **Line Color**

Specifies the color of each channel's graph line.

■ **Line Width**

Specifies the width of each channel's graph line.

■ **Y-Axis Auto Scale**

Select this option to automatically display the calculated maximum value of the Y-axis when a new value is added during monitoring.

If this is not selected, the data that is displayed will be in the maximum and minimum range of the Y-axis.

■ **Y-Axis Min./Max.**

Specifies the maximum and minimum of the Y-axis when **Y-Axis Auto Scale** is not used.

■ **Show Grid**

Select this option to display or hide vertical and horizontal gridlines.

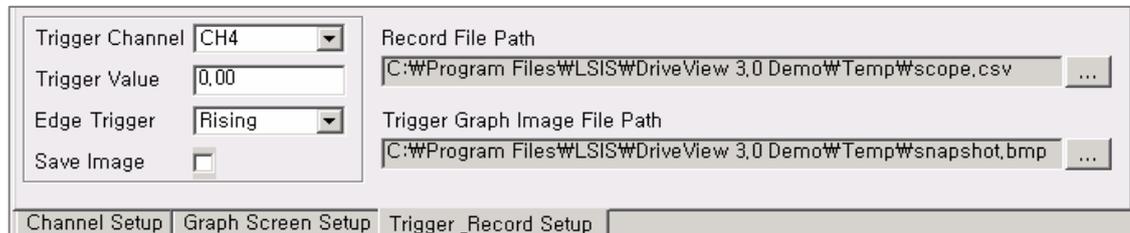
■ **Show Label**

Select this option to display or hide the line color and parameter variable name. .

■ **Cursor**

The cursor pointing channel when **Cursor** is selected in **Graph Screen Mode**.

**C. Trigger \_Record Setup**



■ **Trigger Channel**

Specifies the channel to set Trigger Event.

■ **Trigger Value**

Specifies the parameter variable of the channel to trigger Event.

■ **Edge Trigger**

Specifies Edge Trigger mode, rising or falling mode can be set. If **Rising** is selected, Trigger Event occurs when the collected data exceeds the specified trigger level, and if **Falling** is selected it occurs when the collected data is less than the specified trigger level.

■ **Save Image**

Select this option to save the screen image when Trigger Event occurs.

■ **Record File Path**

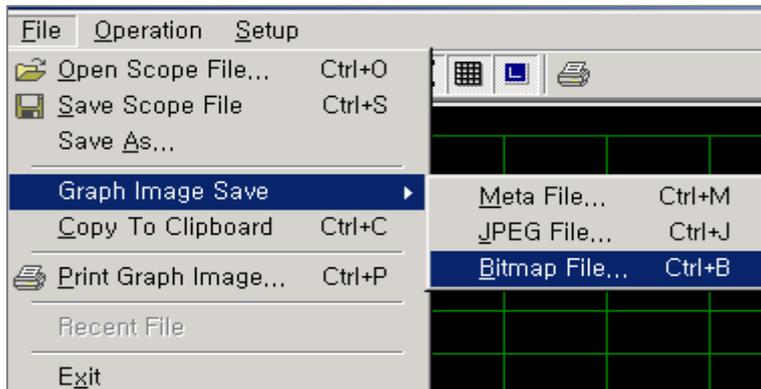
Specifies file directory to record the collected data.

■ **Trigger Graph Image File Path**

Specifies file directory to save the graph image when Trigger Event occurs in case **Save Image** is selected.

▣ **Menu and Toolbar**

**A. File**



- **Open Scope File**

Opens the scope file and displays the graph environment and data.

- **Save Scope File**

Saves the currently set graph environment and collected graph data into a file.

- **Save As**

Saves the currently set graph environment and collected graph data as a different file.

- **Graph Image Save**

Saves the active graph image into a specified file format.

- **Copy To Clipboard**

Copies the active graph image into a window clipboard.

The image can be displayed by selecting **Paste** in a program like MS-Word and Paint.

- **Print Graph Image**

Prints the active graph image.

## B. Operation



## < Graph Watch Mode? >

Previous DriveView programs reflect data irregularly because they collect data with other windows like Main Window Inverter Register, Keypad, Parameter Editor, Text Monitor, etc., during monitoring.

DriveView 3.0 provides “Graph Watch Mode” so to the user can get more accurate data. While this function is activated, other window’s monitoring function is stopped except graph monitoring. (But Fault History is activated.)

Click **Graph Watch Mode**, and then click **Start Monitor**.

### ■ Start Monitor

Starts data monitoring.

### ■ Stop Monitor

Stops data monitoring.

### ■ Start Record

Records data on the specified file.

### ■ Stop Record

Stops data recording.

### ■ Start Trigger

Starts Trigger Event monitoring.

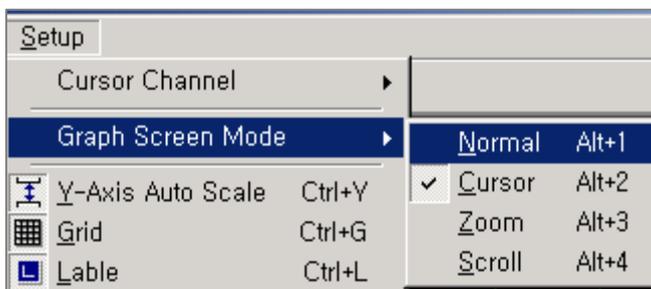
### ■ Stop Trigger

Stops Trigger Event monitoring.

### ■ Graph Watch Mode

Determines whether to use **Graph Watch Mode**.

## C. Setup



### ■ Cursor Channel

Point to **Graph Screen Mode** on the **Setup** menu, and then click **Cursor**.

## ■ Graph Screen Mode

### A. Normal

Graph is normally displayed in this mode and when data is collected, the mode changes into Normal mode automatically. The screen turns to the initial graph screen if the mode changes from Cursor/Zoom/Scroll to Normal.

### B. Cursor

Stop monitoring to activate this mode, and place the mouse cursor where to look, and then click or drag the cursor bar to display the data value.

### C. Zoom

Stop monitoring to activate this mode, and select area by drag-and-drop to get a magnified view.

### D. Scroll

Stop monitoring to activate this mode, and drag the mouse to scroll to the selected direction.

## ■ Y-Axis Auto Scale

Select this option to automatically display the calculated maximum value of the Y-axis when a new value is added during monitoring.

If this is not selected, data is displayed in the maximum and minimum range of the Y-axis.

## ■ Grid

Select this option to display or hide vertical and horizontal gridlines.

## ■ Label

Select this option to display or hide the line color and parameter variable name.