Pro-face

Pro-Server Add-on Software

GP-Viewer

with History Data Playback

Operation Manual

PREFACE

Thank you for purchasing the “GP-Viewer”.
Please read this manual carefully in order to use this software properly, and be sure to keep this manual handy for future reference.

NOTES

(1) The copyrights to all programs and manuals included in the GP-Viewer (hereinafter referred to as “this product”) are reseved by the Digital Electronics Corporation. Digital grants the use of this product to its users as described in the “Software Operating Conditions” documentation, included with this product's CD-ROM. Any actions violating the above-mentioned conditions are prohibited by both Japanese and foreign regulations.

(2) The contents of this manual have been thoroughly inspected. However, if you should find any errors or omissions in this manual, please inform your local GP representative of your findings.

(3) Please be aware that Digital Electronics Corporation shall not be held liable by the user for any damages, losses, or third party claims arising from the uses of this product.

(4) Differences may occur between the descriptions found in this manual and the actual functioning of this product. Therefore, the latest information on this product is provided in data files (i.e. Readme.txt files, etc.) and in separate documents. Please consult these sources as well as this manual prior to using the product.

(5) The specifications set out in this manual are for overseas products only. As a result, some differences may exist between the specifications given here and for those of the identical Japanese product.

(6) Even though the information contained in and displayed by this product may be related to intangible or intellectual properties of the Digital Electronics Corporation or third parties, the Digital Electronics Corporation shall not warrant or grant the use of said properties to any users and/or other third parties. The Digital Electronics Corporation is not liable for damages related to the rights such as intellectual properties of third parties resulting from the use of the information contained in and displayed by this product.

The company names and product names used in this manual are the trade names, trademarks (including registered trademarks), and service marks of their respective companies.
This manual omits individual descriptions of each of these rights.

TRADEMARK RIGHTS

The company names and product names used in this manual are the trade names, trademarks (including registered trademarks), and service marks of their respective companies.
This product omits individual descriptions of each of these rights.

Trademark/Tradename	Right Holder
Microsoft, MS-DOS, Windows, Windows 95, Windows 98, Windows 98 SE, Windows Me, Windows NT, Windows 2000, Windows Explorer, Active X, Excel, Internet Explorer	Microsoft, U.S.
Intel, Pentium, MMX	Intel, U.S
Ethernet	Xerox, U.S.
IBM, VGA, PC/AT, OS/2	IBM, U.S.
FIX32, FIX-MMI, FIX-FA, ifix	Intellution, U.S.

The following terms used in this manual differ from the above mentioned formal trade names and trademarks.

Term used in this manual	Formal Trade Name or Trademark
Windows 95	Microsoft® Windows® 95 Operating System
Windows 98	Microsoft® Windows® 98 Operating System
Windows 98 SE	Microsoft® Windows® 98 SE Operating System
Winoows Me	Microsoft® Windows® Me Operating System
Windows NT	Microsoft® Windows® NT Operating System
Windows 2000	Microsoft® Windows® 2000 Operating System
Windows XP	Microsoft® Windows® XP Operating System

HOW TO USE THIS MANUAL

Structure of This Manual

This manual, titled “GP-Viewer Operation Manual” describes how to use the “GP-Viewer” software. “GP-Viewer” is an integral part of “Pro-Server with Pro-Studio for Windows”. We recommend you carefully read the “Pro-Server with Pro-Studio for Windows Operation Manual” to understand the features of “Pro-Server with Pro-Studio for Windows”. Also, When you use “GP-Web” or “Factory Gateway Configuration Tool”, be sure to read those related manuals.

Last, In addition to this manual, be sure to read the readme.txt file since it contents supplementary explanations about additional/modified features.

TABLE OF CONTENTS

Appendix

MANUAL SYMBOLS AND TERMINOLOGY

This manual uses the following symbols and terminology.
If you have any questions about the contents of this manual, please contact your local GP distributor.
Also, If you have any question about your personal computer or Windows, please contact your local distributor or manufacturer.

Safety Symbols and Terms

This manual uses the following symbols and terms for important information related to the correct and safe operation of this product.

Symbol	Description
⚠ Warning	Incorrect operation resulting from negligence of this instruction may cause death or serous injury.
⚠ Caution	Incorrect operation resulting from negligence of this instruction may cause injury or damage to equipment.
	Indicates Instructions/Procedures that must be performed to ensure correct product use.
	Indicates Actions/Procedures that should not be performed.

General Information Symbols and Terms

This manual uses the following symbols and term for general information.

Symbol	Description
MEMO	Provides hints on correct use, or supplementary information.
Reference →	Indicates (manual name, page number) related information.
Pro-Server with Pro-Studio	Downloading Ethernet (2-Way Driver) information to the GP allows the Host PC to use the network to send and receive data from a PLC, via the GP.
GP-PRO/PB III C-Package	Includes the new GP-PRO/PB III for Windows and Pro-Control Editor software. This single package allows you to perform a aide variety of tasks, from screen creation and editing to logic programming.
PLC	Acronym for Programmable Logic Controller.
FGW	Abbreviation for Factory Gateway

PRECAUTIONS

Product Usage Precautions

To prevent program malfunctions or accidents, be sure to observe the following instructions:

⚠ Warning

Touch panel switches should NOT be used for a device's Emergency Stop switch. Generally speaking, all industrial machinery/systems must be equipped with a mechanical emergency stop switch that can only be operated by people. Also, for other kinds of systems, similar mechanical switches must be provided to ensure safe operation of that system.

⚠ Cautions

- Do not turn off your personal computer's power switch during the execution of a program.
- Do not change the contents of this product's project files using the Text Editor software.

■ CD-ROM Usage Precautions

To prevent CD-ROM damage or malfunctions, please observe the following instructions:

- Do not remove a CD-ROM disk from the CD-ROM drive while the driver's operation lamp is lit.
- Do not touch the CD-ROM recording surface.
- Do not store the CD-ROM disk in a place where it may be exposed to extremely high or low temperatures, high humidity, or dust.

OPERATING ENVIRONMENT

■ GP-Viewer

The following operation environment is required in addition to that of "Pro-Server with Pro-Studio for Windows" when using "GP-Viewer".

Reference → "Pro-Server with Pro-Studio for Windows Operation Manual" OPERATING ENVIRONMENT

Item	Specification	Remark
Personal Computer	Windows® compatible	Pentium 200MHz or faster processor
Display	VGA (640 x 400) or higher	256 bit color or higher
Hard Disk Space Requirements	20 MB or more	30 MB or more is recommended
Memory Requirements	32 MB or more	128 MB or more is recommended
CD-ROM Drive	Standard type	Required for program installation.
Compatible OS Types	Windows® 95 (English or Japanese)	OSR2 or higher
	Windows® 98 (English or Japanese)	
	Windows® Me (English or Japanese)	
	Windows® NT 4.0 (English or Japanese)	Service Pack 3.0 or higher
	Windows® 2000 (English or Japanese)	
	Windows® XP (English or Japanese)*1	
Related software	Internet Browser Software (IE V5.0 or later)	including JAVA VM
	Excel 97 or later	when using the trend graph display feature
	Pro-Server with Pro-Studio for Windows Ver. 4.1 or later	required
Supported languages	Japanese, English, Chinese, Korean, Taiwanese	
Mouse	Windows® compatible	Mouse is required for operation.
Ethernet Board	10BASE-2/5/T, 100BASE-T	
Network Configuration	TCP/IP Protocol	
Additional Items	Ethernet Hub, Ethernet cables, etc.	Set up from Control Panel. *2 User supplied

*1 When installing Microsoft Java VM on Windows XP, refer to "A.4 Installing 'Java Virtual Machine' When Using Windows XP".

*2 Until the TCP/IP protocol data is entered, Pro-Server with Pro-Studio cannot be used.

MEMO Depending on the type of Ethernet hub used, GP-Viewer may be unable to transmit data. Be sure to test and confirm the compatibility of GP-Viewer with your Ethernet network.

■ Compatible GP Units

For a GP to have the GP-Viewer capability, it must support the 2-Way function. The following table shows these GP models that support this function.

Compatible GP

Series Name		Product Name	Model	Built-in Ethernet Unit	External Ethernet Unit	Comment
GP77R series	GP-377R series	GP-377RT	GP377R-TC11-24V	X	○	*1
			GP377R-TC41-24V			
	GP-477R series	GP-477RE	GP477R-EG11			
			GP477R-EG41-24VP			
	GP-577R series	GP-577RS	GP577R-SC11			
			GP577R-SC41-24VP			
		GP-577RT	GP577R-TC11			
			GP577R-TC41-24VP			
GP2000 series	GP-2300 series	GP-2300L	GP2300-LG41-24V	○	X	–
		GP-2300T	GP2300-TC41-24V			
	GP-2400 series	GP-2400T	GP2400-TC41-24V			
	GP-2500 series*1	GP-2500L	GP2500-LG41-24V	○	○	*2
		GP-2500S	GP2500-SC41-24V			
		GP-2500T	GP2500-TC11			
			GP2500-TC41-24V			
	GP-2501 series	GP-2501S	GP2501-SC11	X		*1
		GP-2501T	GP2501-TC11			
	GP-2600 series	GP-2600T	GP2600-TC11	○		*2
GLC2000 series	GLC2300 series	GLC2300L	GLC2300-LG41-24V	○	X	–
		GLC2300T	GLC2300-TC41-24V			
	GLC2400 series	GLC2400T	GLC2400-TC41-24V		○	*2
	GLC2600 series	GLC2600T	GLC2600-TC41-24V			
IT series	IT2400 series	IT2400 TypeA	IT2400-TC41-GP	○	X	–
			IT2400-TC41-GP200V			
		IT2400 TypeB	IT2400-TC41-GLC			
			IT2400-TC41-GLC200V			
Factory Gateway		Factory Gateway	FGW-SE41-24V	○	–	–

*1 GP Ethernet I/F Unit or the Multi Unit E is required.

*2 GP Ethernet I/F Unit or the Multi Unit E can be attached.

MEMO The IP address or the port number setting when using a built-in Ethernet unit only differs from that when attaching an expansion Ethernet unit.

Protocols Supported by GP-Viewer (Special Protocols)

Vendors	PLC Type in GP-PRO/PB III for Windows	2-Way Driver			
		GP77R GP-2501	GP-2500 GP-2600 GLC2600	GP-2300 GP-2400 GLC2300 GLC2400	Factory Gateway
OMRON	OMRON SYSMAC-CS1 (Ether)	X	O	O	O
Mitsubishi	Mitsubishi MELSEC NET/10	X	O	X	X
SIEMENS	S7-200MPI	O	O	O	O
Allen Bradley	SLC500 DH485	O	O	O	X

O ... supported, but requires symbol import X ... not supported

For details of the special protocol, refer to “2.8 Special Protocol”.

Software

GP-PRO/PB III for Windows (Screen creation software)

Screen Creation Software	Language	Software Version	System Version				
			GP70	GP77R	GP377R	GP2000	FGW
GP-PRO/PB III for Windows	Japanese	Ver. 3.0	Ver. 1.51	Ver. 2.40	-	-	-
	ML	Ver. 3.0	Ver. 1.51	Ver. 2.40a	-	-	-
	Japanese	Ver. 4.0	Ver. 1.54	Ver. 2.60	Ver. 2.60	-	-
	Japanese/ML	Ver. 5.0	Ver. 1.55	Ver. 2.64	Ver. 2.64	Ver. 3.10	-
	Japanese	Ver. 6.0	Ver. 1.55	Ver. 2.68	Ver. 2.68	Ver. 3.30	-
	ML	Ver. 6.0	Ver. 1.55	Ver. 2.68	Ver. 2.68	Ver. 3.30	Ver. 3.40
	Japanese/ML	Ver. 6.1	Ver. 1.55	Ver. 2.69	Ver. 2.69	Ver. 3.50	Ver. 3.40

Components

The following shows the GP-Viewer package components. Prior to using this product, check that all these components are present in your package.

■ GP-Viewer CD-ROM

The GP-Viewer CD includes:

- GP-Viewer program
- Japanese manual (pdf file)
- English manual (pdf file)

■ Installation Guide (both in Japanese and English)

(Front) Japanese	(Rear) English

■ User Registration Form (both in Japanese and English)

Japanese	English

Documentation Conventions

This manual uses the following symbol.

MEMO	Indicates related information or supplementary explanations.

1 Introduction

This chapter provides an overview, and explains the system design, software information flow and system setup flow to upload data from a GP unit via GP-Viewer.

1.1 Overview

GP-Viewer is the system to display device data of external equipments such as PLC on the Pro-Server PC. You can use it for monitoring running status or maintenance.

The screen to be displayed is created by GP-PRO/PB III for Windows and transferred to GP/GLC/Factory Gateway. You can upload the screen transferred and displayed on GP/GLC/Factory Gateway to GP-Viewer via the Pro-Server system.

Device data, which are the base of screen display, are saved as files on the Pro-Server PC. Furthermore, you can recreate the past screen by the Playback feature.

1.1.1 What is the 2-Way Function?

The 2-Way function is used to directly access external equipment data such as that in PLCs connected to a Factory Gateway via a network (Ethernet) from the host PC. One advantage of this system is that you can exchange data with the host PC without worrying about differences in communication protocols.

To use the 2-Way function, you will to set up Pro-Server (as the server) and your GP/GLC/Factory Gateway, to relay data between external devices such as PLCs.

Reference → “1.2 System Design”

1.2 System Design

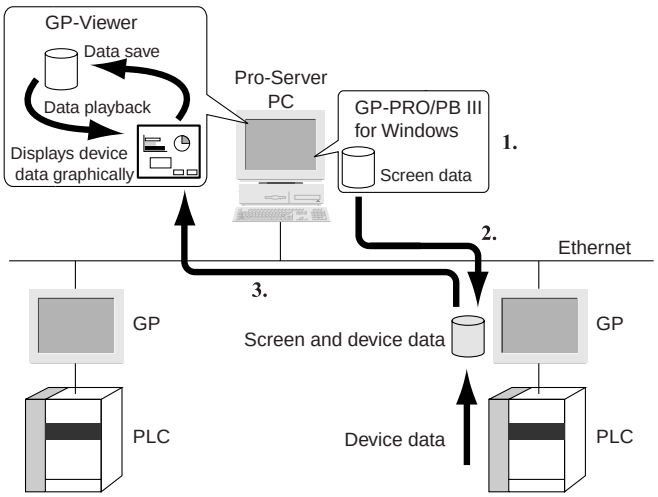
The following shows one example of the system design using GP-Viewer.

The following describes the steps used to upload GP/GLC/Factory Gateway unit data using GP-Viewer.

1. Create screen data using GP-PRO/PB III for Windows.

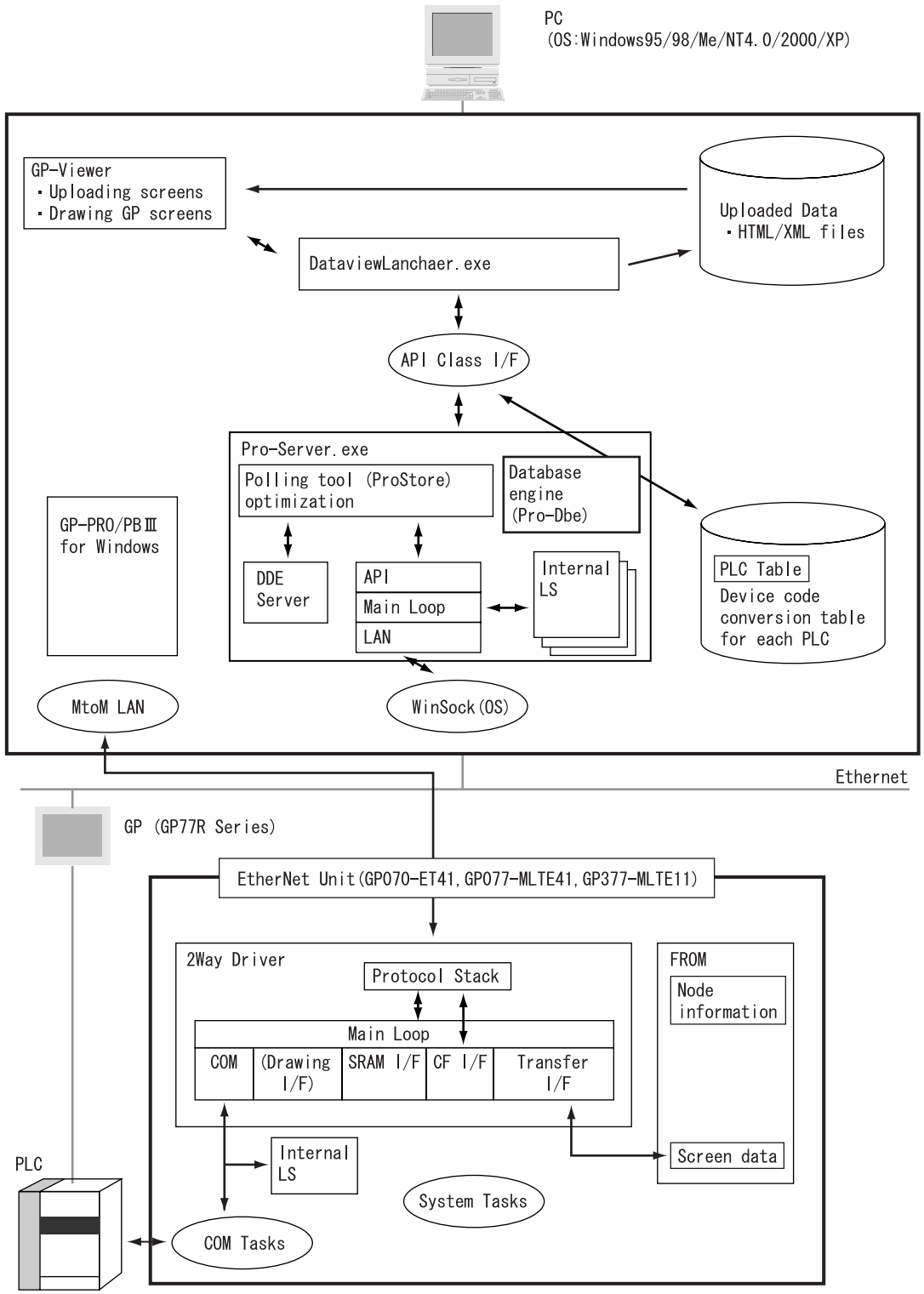
2. Transfer the created screen data to Factory Gateway using GP-PRO/PB III for Windows.

3. Upload and display screen and device data using GP-Viewer.



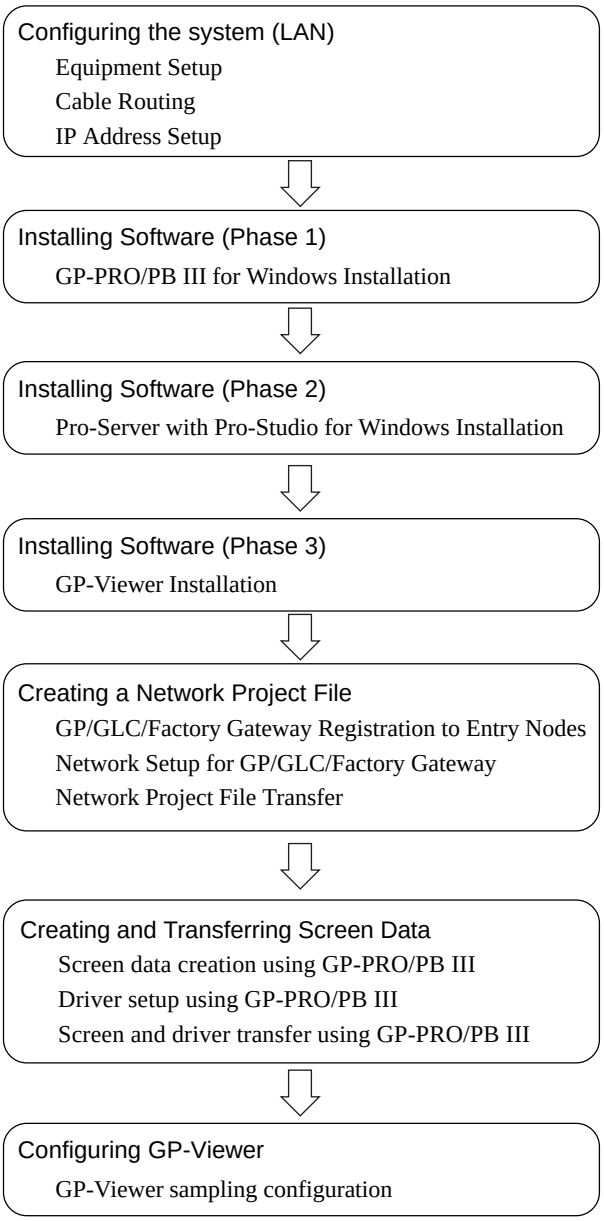
1.3 Software Information Flow

The following describes the software configuration of the PC using GP-Viewer and the information flow of GP (The example below is GR77R Series.).



1.4 Configuring the System

The following figure describes the configuration steps of the Pro-Server system with GP-Viewer.



2 Operation

2.1 Installing the Software

This section describes how to install GP-Viewer from the CD-ROM to your hard disk. The following explanation assumes that Windows and Pro-Server with Pro-Studio for Windows Ver.4.1 or higher have already been installed on your PC.

For the Pro-Server with Pro-Studio for Windows installation:

Reference → "Pro-Server with Pro-Studio for Windows Operation Manual" "Chapter2 Installing the Software"

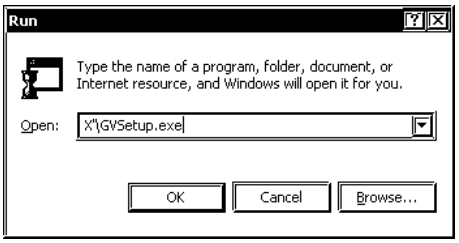
Furthermore, you cannot install GP-Viewer while a trial version of "GP-Viewer" remains on your PC. Be sure to uninstall any trial versions of "GP-Viewer" before installing GP-Viewer.

MEMO

- Before starting the installation, exit all programs except the Factory Gateway Configuration Tool Setup program. You should also shut down any memory-resident programs (such as Virus detection software) as well.
- Copying the files on the master CD-ROM and pasting them onto your hard disk does not install this software. To start this software, you must use the Setup program.

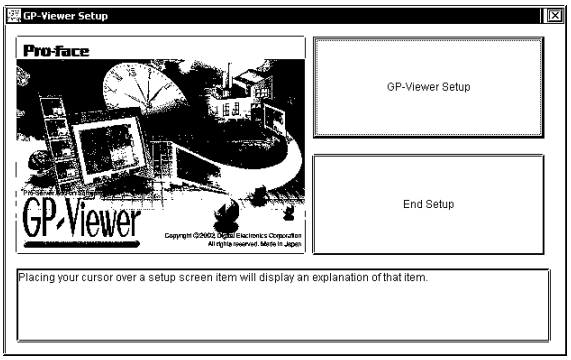
1. Insert the CD-ROM into your PC's CD-ROM drive.
2. Click the [Start] button and, when the Start menu appears, select [Run].

3. Type “X:/GVSetup.exe” and then click [OK]. (“x” represents the drive letter assigned to your CD-ROM drive.)



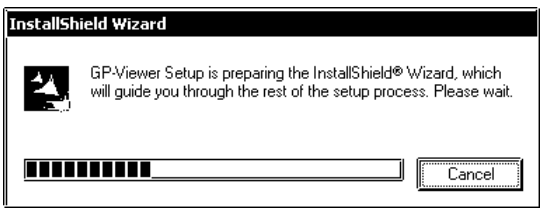
The master CD-ROM supports the AutoPlay feature, which means inserting it into your CD-ROM drive will automatically start the Setup program.

4. The installation menu appears. Click the “Pro-Server with Pro-Studio Setup” bar.

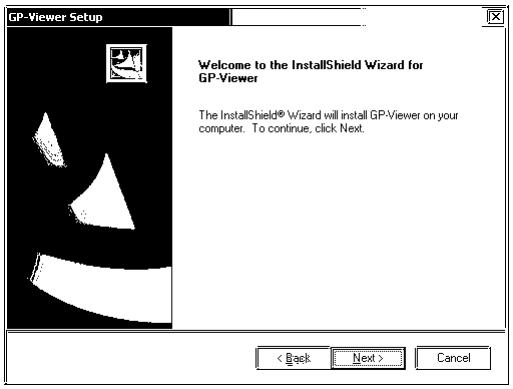


5. Select “English” and click [OK].

6. [InstalledShield Wizard] dialog will start.

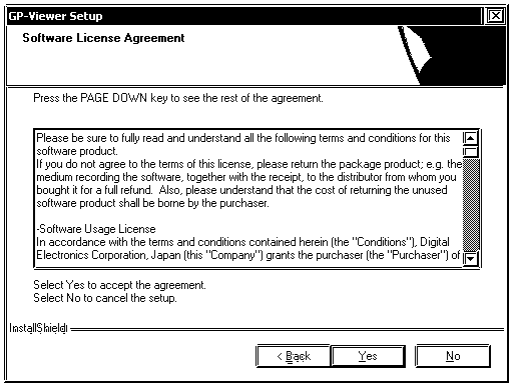


7. [GP-Viewer Setup] dialog appears. Click [Next] to continue.

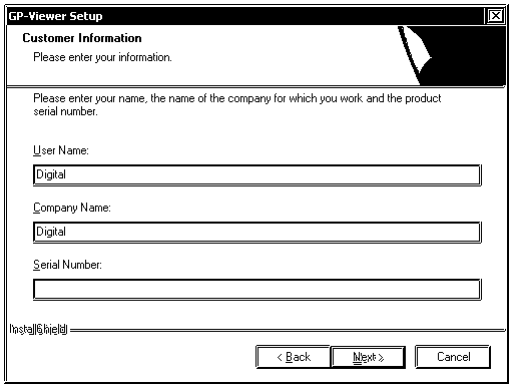


If you try to install the program on the PC where the older version than Pro-Server with Pro-Studio for Windows Ver.4.1 has been installed, an error will appear and the installation will be interrupted.

8. When the “Software License Agreement” appears, click [Yes] if you agree with the terms of the agreement.

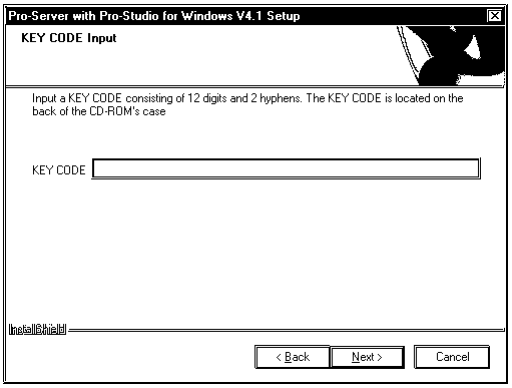


9. The User Information screen will appear. Enter all information and click [Next].



10. The key code entry screen then appears. Enter the code printed on the rear of your CD-ROM case and click [Next].

    The data entered must also include the "–" character.



Follow the instructions given in each following dialog box.

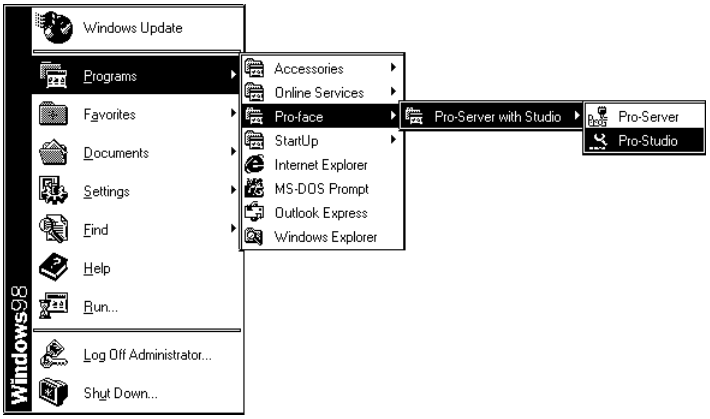
MEMO If "GP-Web Server" has been installed already, GP-Viewer will be installed in the same folder as that of GP-Web Server.

2.2 Starting and Exiting the Software

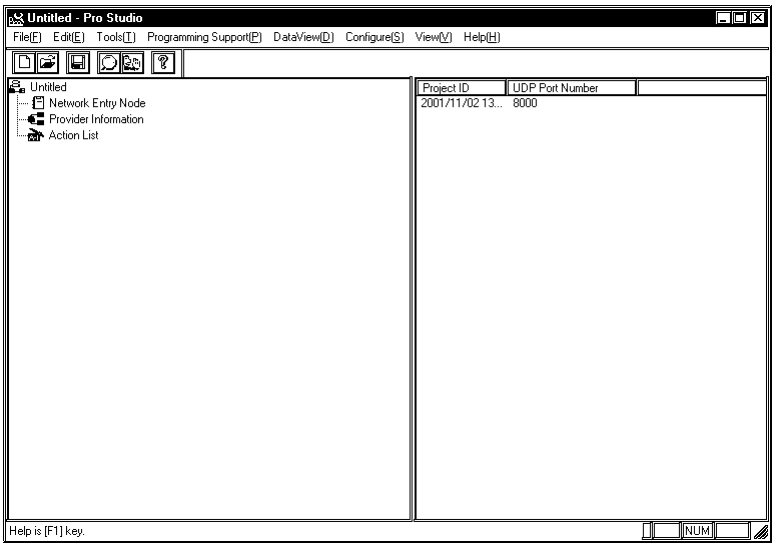
2.2.1 Starting GP-Viewer

The following explanation assumes that the Windows desktop is already displayed.

1. Click on the [Start] button and when the Start menu appears, point to [Programs], [Pro-face] and [Pro-Server with Studio] and then select [Pro-Studio].

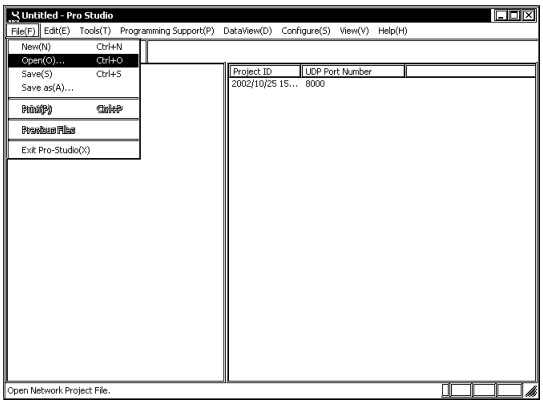


2. The program's main window will appear.

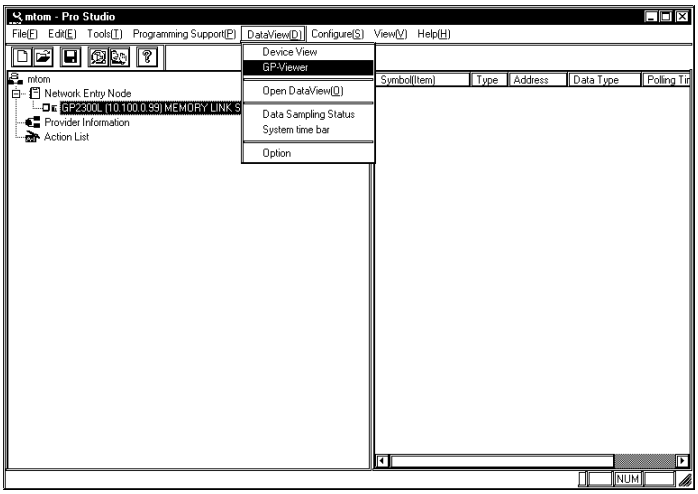


MEMO Starting Pro-Studio automatically starts Pro-Server. Pro-Server resides in memory and its indicator appears on the right side of the task-tray.

3. Select [File(F)]-[Open(O)], and then select the network project file (*.npj) that will be used for the entry node (GP/GLC/Factory Gateway) when uploading data using GP-Viewer.



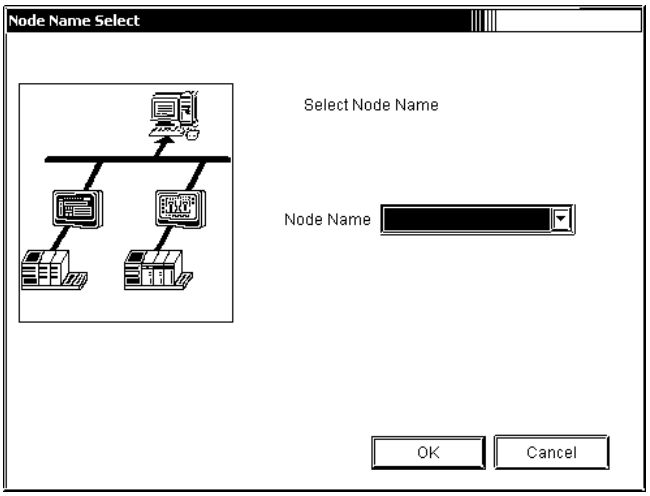
4. After selecting the entry node, select [GP-Viewer] in [Data View (D)].



MEMO

- Be sure to connect to the entry node (GP/GLC/Factory Gateway) since the communication process will start when you click [GP-Viewer].
- You can upload GP screens from a GP77R SERIES unit, however, the GP system will be reset. If your GP does not support the online uploading function, a warning window appears.
- If password protection has been set for any GP screens, the password entry dialog appears.
- The GP-Viewer screen refresh period is set via Pro-Studio's -> [Configure] -> [System] -> [DDE Polling Time] dialog box (Default: 1000ms).

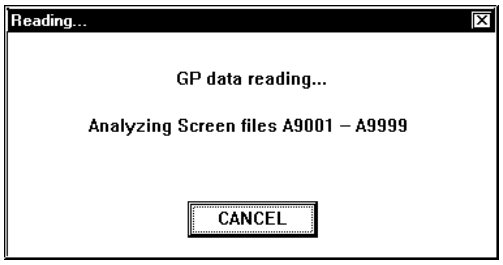
- If you select [Data View(D)]-[GP-Viewer] without previously selecting the entry node, the following [Node Name Selection] dialog will appear.



Select the entry node from the pull-down list, and then click [OK].

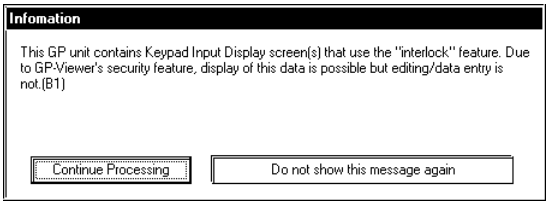
Start the screen upload of the step 5 as you selected the entry node on Pro-Server.

5. While the upload is running, the following dialog appears. The dialog will disappear when the upload process is completed.



MEMO

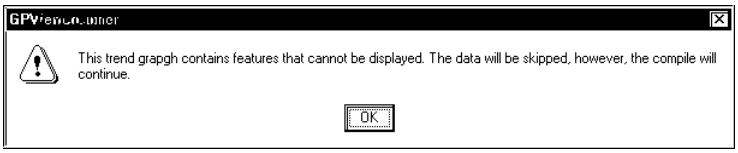
- If the interlock feature is set to “Keypad Input Display” in the GP screen, the following dialog will appear when uploading screen data.



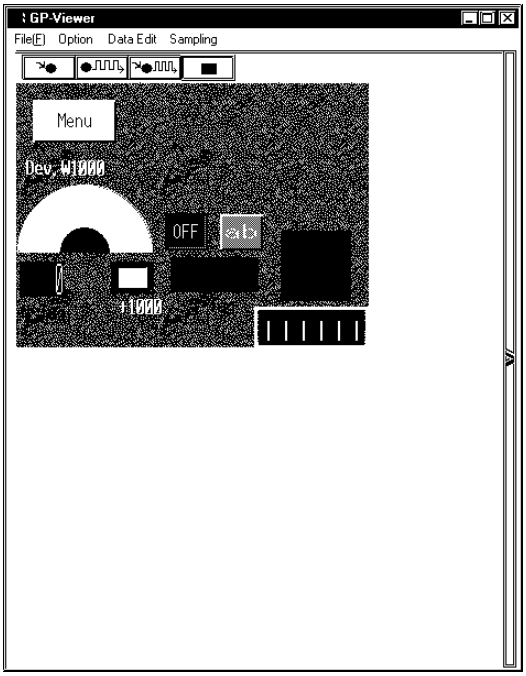
If you click [Continue Processing], this dialog will be closed and the processing will be continued. This dialog is displayed once per one "Keypad Input Displa" set on GP.

If you click [Do not show this message again], the processing will be continued without displaying this dialog even if new "Keypad Input Display" is detected during compilation.

- For the trend graph feature newly added from GP-PRO/PB III for Windows Ver.6.2, if you upload the GP screen that uses the scale display feature of the display range to GP-Viewer, the following dialog will appear.



6. The selected GP screen data will appear on GP-Viewer.

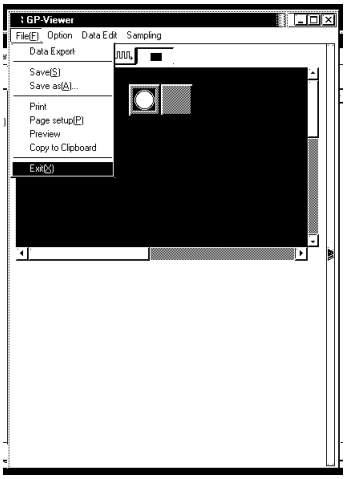


MEMO Data is being monitored but has not been saved at this stage.

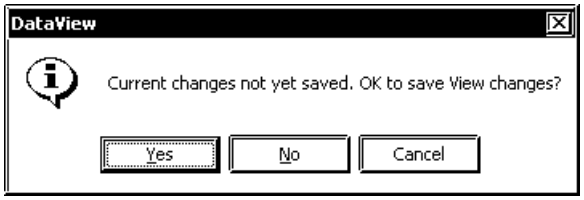
2.2.2 Exiting GP-Viewer

The following describes how to exit GP-Viewer.

1. Select [File(F)]-[Exit(X)].



When GP-Viewer quits, the following dialog will appear if currently displayed or sampled is not saved.



Click [Yes] to save data and then exit.

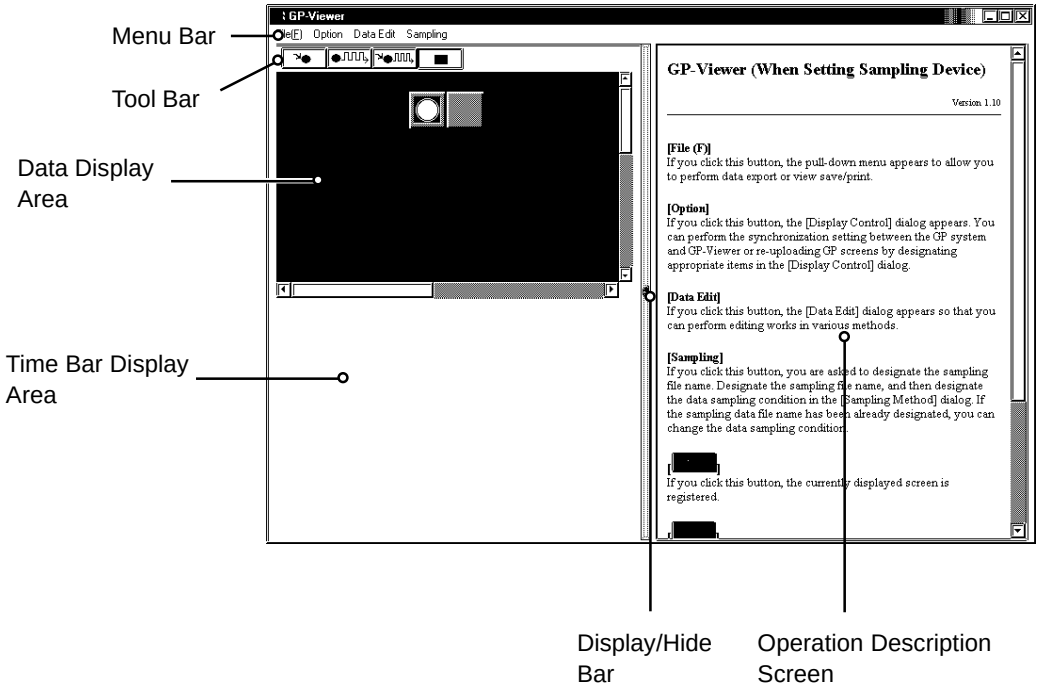
Click [No] to exit without saving data.

Click [Cancel] to cancel exiting GP-Viewer.

For details, refer to “2.4.5 Other Features”.

2.3 Information Screen

This section describes the information found in the main screen of GP-Viewer.



Menu Bar

Contains GP-Viewer menus.

Tool Bar

Contains command icons used for setting GP-Viewer features. The following describes each button.

 : [Record Registration Button]

Click this button, registers the screen currently displayed by GP-Viewer.

 : [Record Start Button]

Click this button, starts the screen currently displayed by GP-Viewer.

 : [Record Registration/Start Button]

Click this button, registers the screen currently displayed by GP-Viewer and starts recording.

 : [Stop Button]

Click this button, stops data sampling and saving.

Data Display Area

Displays uploaded screen data from GP/GLC/Factory Gateway.

Display/Hide Bar

The bar switches Display/Hide of the operation description screen. Every time you click it, the operation description screen will be displayed or hidden.

Time Bar Display Area

The time bar is displayed in this area. For details, refer to “2.4.4 PlayBack Feature”. The time bar display area is displayed in a fixed size. You cannot enlarge or reduce it.

Operation Description Screen

Explains the operation procedure of GP-Viewer (Help). Refer to it when you do not understand how to use GP-Viewer.

The GP-Viewer’s version information is also described.

Screen Size of GP-Viewer

In the case of GP-Viewer, the display screen size is decided based on screen data information (contents to upload to GP-Viewer) transferred to GP/GLC/Factory Gateway.

Therefore, by transferring screen data of a different model to GP/GLC/Factory Gateway, you can display the screen on GP-Viewer in a larger (smaller) size than the screen actually displayed on GP/GLC.

With this specification, if you transfer screen data of a GP/GLC unit that has a large screen to the Factory Gateway, you can display the screen on GP-Viewer in a large size.

When you transfer screen data created by GP-PRO/PB III for Windows to GP/GLC/Factory Gateway, check [Upload Information] in the [Transfer Setting] dialog of GP-PRO/PB III for Windows and then transfer data. For details, refer to “GP-PRO/PB III for Windows Operation Manual”.

2.4 Operation Procedure

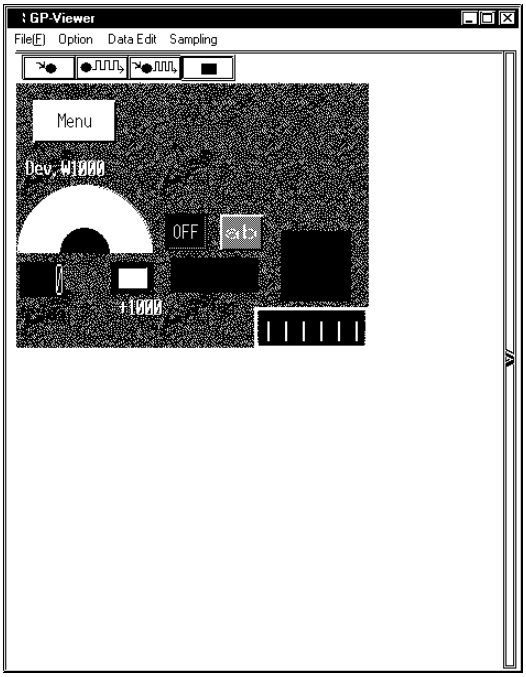
This section describes the operation/setup procedure of each menu, some of which are operated from Pro-Studio.

2.4.1 Setting the Data Sampling Condition

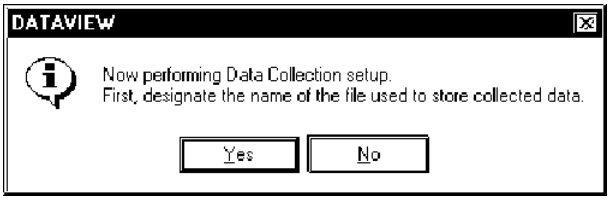
This feature allows you to set the data sampling conditions for data from the target device.

(The following assumes GP-Viewer is started.)

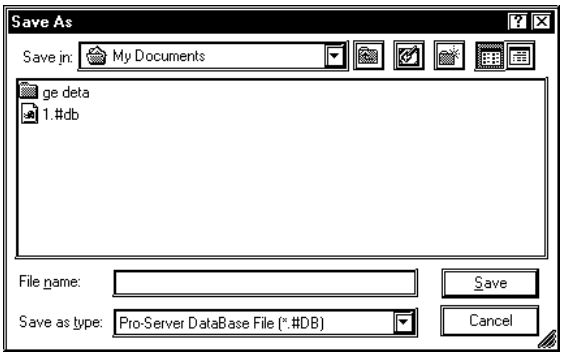
1. Click [Sampling] .



2. When the following dialog appears, click [Yes].



3. The [Save As] dialog allows you to create the file used to save sampled data. The file extension is (.DB). Designate the file name, and then click [Save].



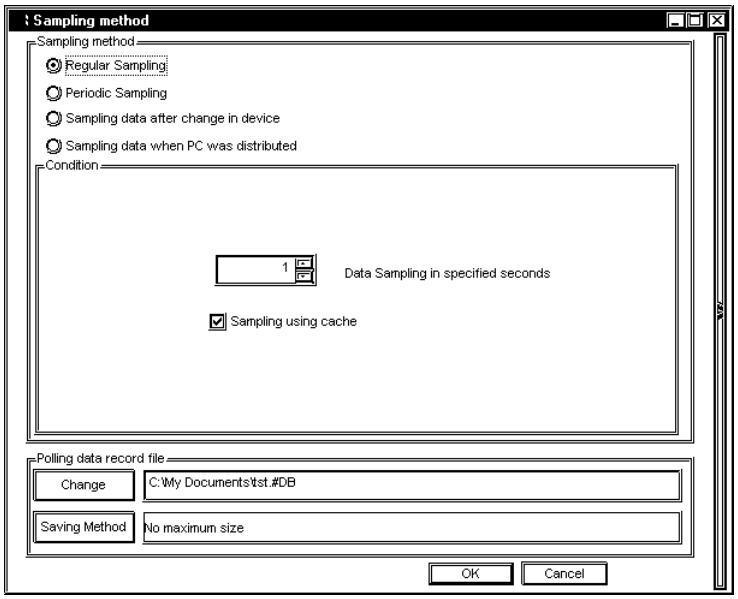
4. The [Sampling method] dialog appears.

Select the desired “Sampling Method”.

The contents of the “Condition” field will differ depending on the “Sampling method” selected. Enter all necessary settings.

When You Selected “Regular Sampling” :

Enter the settings for [Data Sampling in specified seconds] and [Sampling using cache].



[Data Sampling in specified seconds]

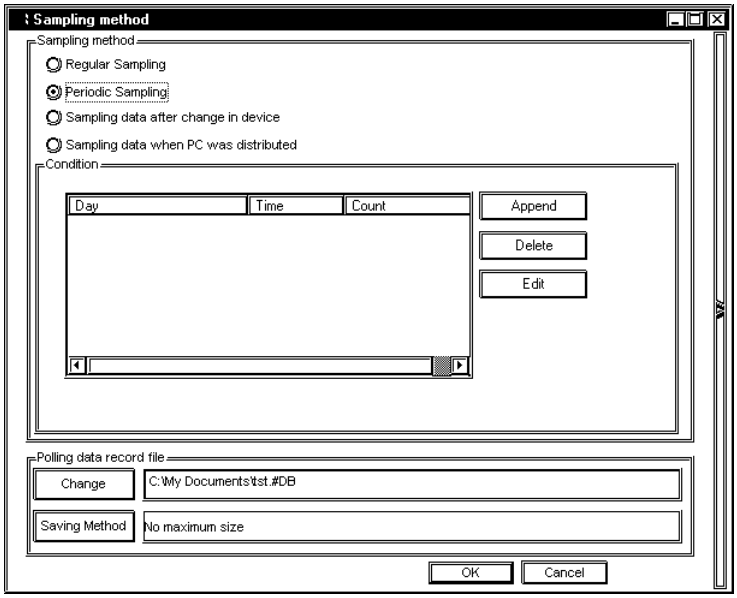
This field designates the device data capturing interval in seconds. The is default is “1 second”.

[Sampling using cache]

Check this option when you use a cache to capture device data. If you do not use a cache, data will be read directly. For details about cache read and direct read, refer to “9.1.1 Simple DLL Classification” of “Pro-Server with Pro-Studio for Windows Operation Manual”.

When You Selected “Periodic Sampling” :

Create the periodical sampling schedule using the [Append], the [Delete], and the [Edit].



[Delete]

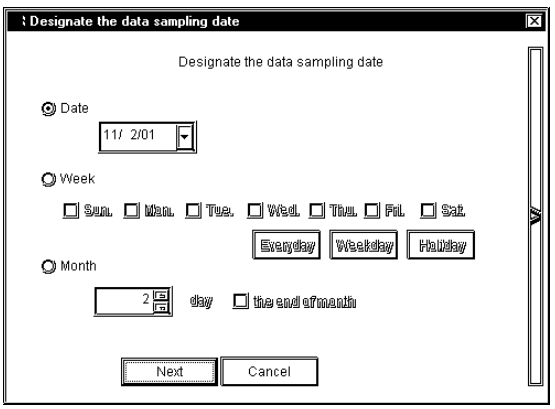
Click [Delete] to delete the selected schedules.

[Append], [Edit]

Click these buttons to append or to edit the sampling schedule.

After you click either the [Append] button, the [Designate the data sampling date] dialog appears.

Designate each item in the [Designate the data sampling date] dialog, and click [Next].



[Date]

Designate the date to sample device data.

[Week]

Designate a day of a week to sample device data. Select the day that you wish to sample device data. You can also use the boxes to select [Everyday] (Fri), [Weekday] (Mon, Tue, Wed, Thu, Fri) or [Weekend] (Sat, Sun).

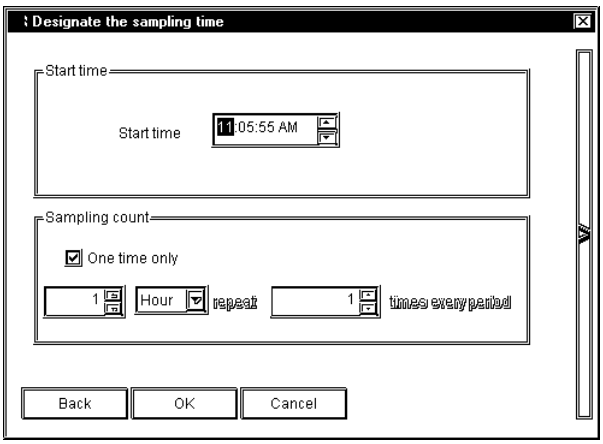
[Month]

Designate the day of the month to sample device data. You can designate either a particular day (one day) or the last day of every month. Device data is sampled according to the day designated here.

If you click [Next], the [Designate the sampling time] dialog appears. Designate each item in the [Designate the sampling time] dialog, and then click [OK].

[Append] allows you to create a new sampling schedule that is displayed in the schedule field.

[Edit] allows you to change the contents of the selected schedule.



[Start Time]

Designate the time to start capturing device data. The sampling will start at the time designated here.

[Sampling count]

If you wish to sample device data only once, check [One time only].

If you wish to repeat device data sampling, use the other settings to designate the sampling frequency. You should designate the sampling interval and the number of sampling.

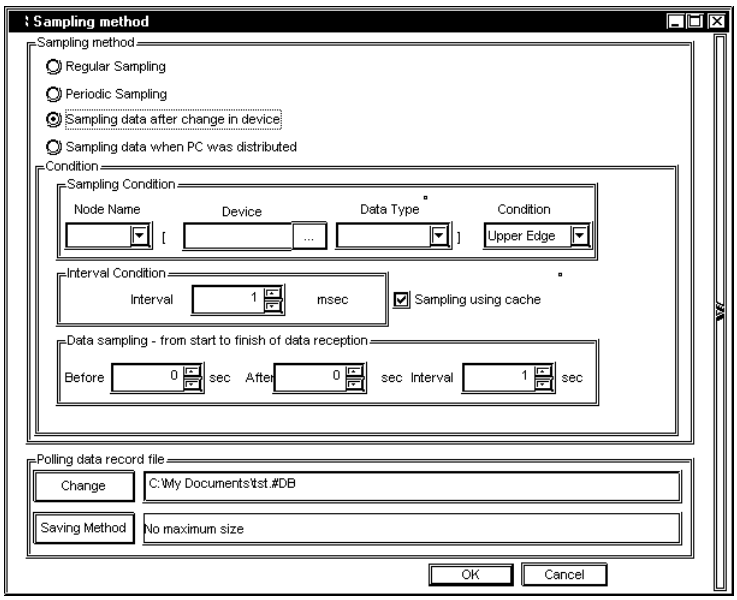
[Edit]

Click this button to change the contents of the selected schedule.

The default is [10].

When You Selected “Sampling data after change in device” :

The contents of the “Condition” field are as the following. You should designate [Sampling Condition], [Interval Condition], and [Data sampling - from start to finish of data reception] in the “Condition” field.



[Sampling Condition]

Designate the timing to sample device data. You should designate the node name that you wish to sample, the target device, the data type, and the condition.

[Interval Condition]

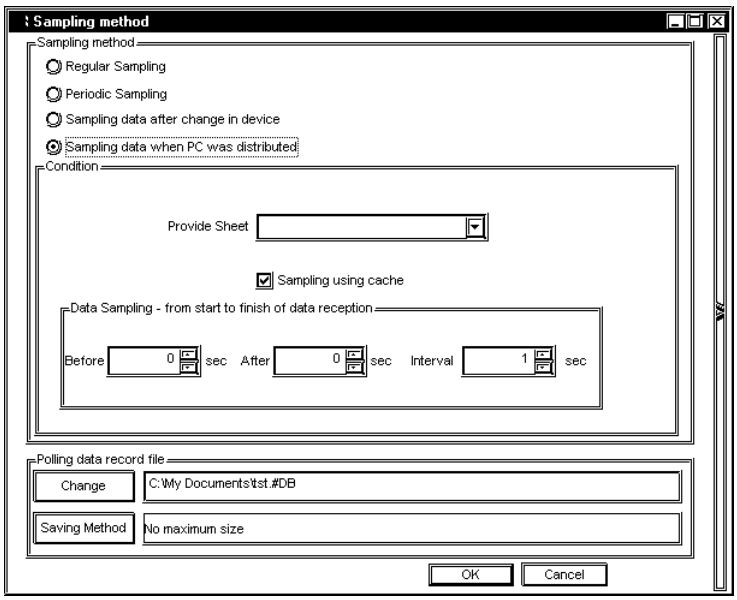
Designate intervals to check the device and to sample data when the status changed.

[Data sampling - from start to finish of data reception]

Designate the data save intervals used “before and after” the device change occurred and the sampling condition was satisfied. Intervals designated here should be longer than the sampling interval.

When You Selected “Sampling data when PC was distributed” :

You should enter the Provider information setup name in [Provider Sheet] of the “Condition” field, and then click [Provider Data Registration] to designate the new Provider information setup. If you have already designated Provider information, you can simply select it from the pull-down list.



[Provide Sheet]

If pre-defined Provider information exists, simply select it from the pull-down list. If it does not exist, please enter the name.

If you wish to sample data at 1 sec. intervals, be sure to set the [Provide Information] interval to 1000ms or longer.

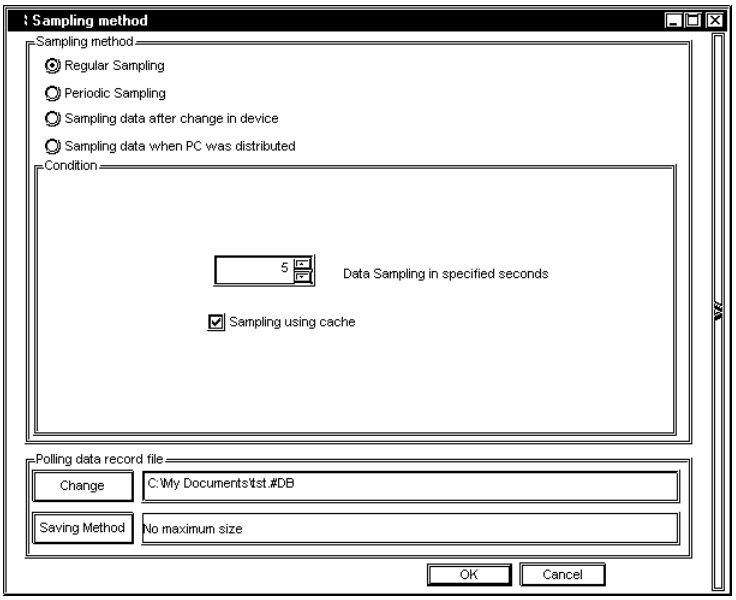
[Sampling using cache]

Check this option when you use cache to capture device data. If you do not use a cache, data will be read directly. For details about cache read and direct read, refer to “9.1.1 Simple DLL Classification” of “Pro-Server with Pro-Studio for Windows Operation Manual”.

[Data sampling - from start to finish of data reception]

Designate the sampling method “before and after” receiving the Provider information. You should designate sampling times “before” and “after” (in seconds), and the sampling interval (in seconds).

5. Designate each item in the “Polling data record file” field of the [Sampling method] dialog, and then click [OK].

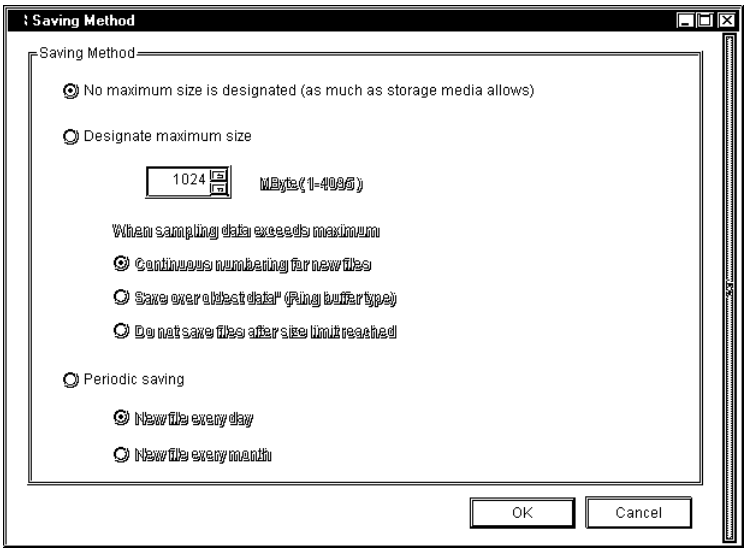


[Change]

Use this button to change the folder used to save sampled data.

[Saving Method]

After clicking this button, designate each item in the [Saving Method] dialog, and then click [OK].



[Designate the maximum size of data (file) to be stored]

Designate the folder to save sampled data. You should also designate the volume (amount) of data to save. Selections are “No maximum size is designated (as much as storage media allows)”, “Designate maximum size” and “Periodic saving”.

If you selected “Designate maximum size”, be sure to designate the maximum data size (in MB) and the sampling method.

- Selecting “Continuous numbering for new files”

  When the maximum allowed size is exceeded, the following new file is created:

  ****.[Sequence number]. #DT ABCD.0.#DT -> ABCD.1.#DT

- Selecting “Save over oldest data”

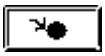
  The oldest Polling data is overwritten when the maximum allowed size is exceeded.

- Selecting “Do not save files after size limit reached”

  When the maximum allowed size is exceeded, Polling is stopped and an error message appears.

If you selected “Periodic saving”, be sure to designate the interval to upload the files.

6. Perform device data sampling.

To register for recording the GP screen currently displayed on GP-Viewer, click  (Record Registration Button) in the tool bar.

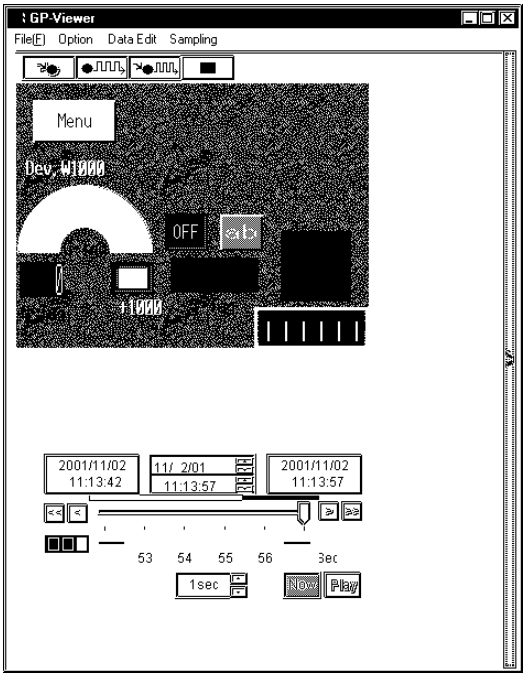
To start recording, click  (Record Start Button) in the tool bar.

To register recording and then to start it, click  (Record Registration/Start Button) in the tool bar. The data “Sample & Save” is executed according to the data sampling condition and the contents are displayed on GP-Viewer. The display contents are updated according to the data change.

When you start device data sampling, buttons for viewing sampled data will appear in GP-Viewer.

Refer to “2.4.4 Playback Feature” for how to view sampled device data.

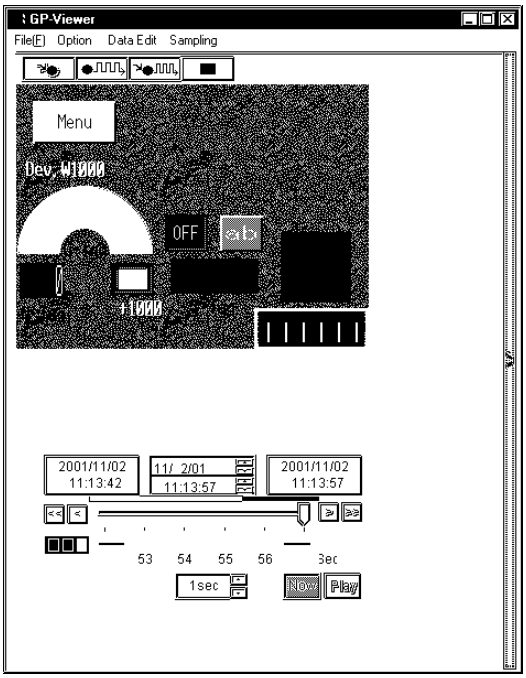
Reference → “2.4.4 Playback Feature”



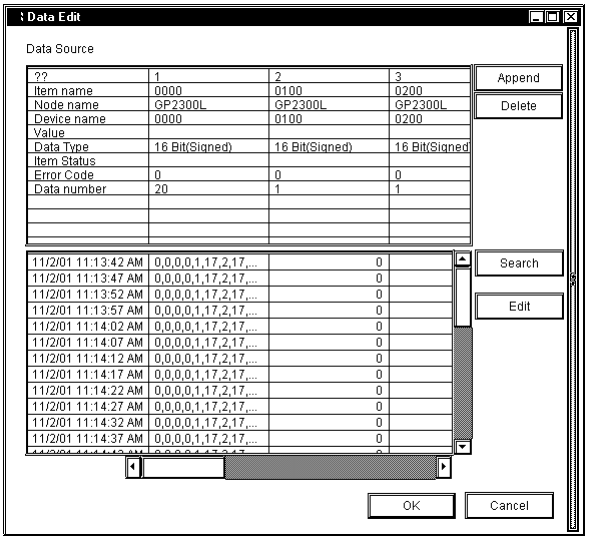
2.4.2 Editing Sampled Data

This feature allows you to edit sampled device data.

1. Click [Data Edit].

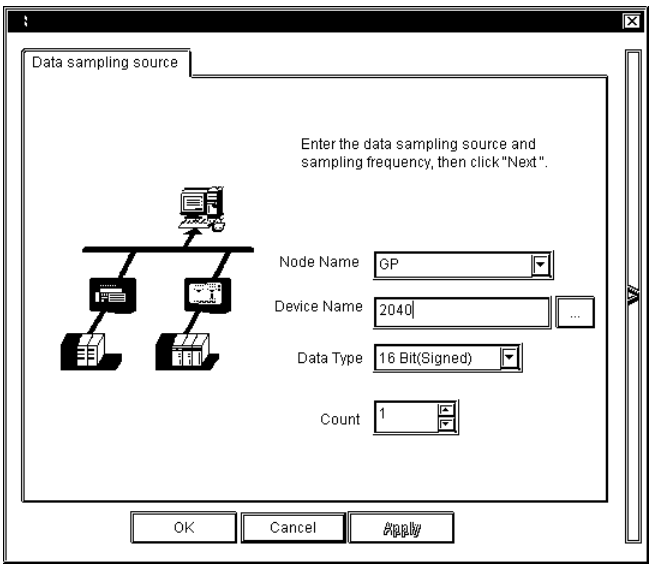


2. The [Data Edit] dialog appears. You can edit data in various methods. The following section describes operation steps after the [Data Edit] dialog appears.



Appending Sampled Data

1. Click [Append] of the [Data Edit] dialog.
2. The next dialog appears. Designate each item for the device that you wish to append, and then click [OK].



[Node Name]

Enter the node name used to sample data. Node names registered in the network project file are displayed.

[Device Name]

Enter the device name used to sample data. If you click […], the symbol entry window appears.

[Device Type]

Designate the device model used to sample data.

[Count]

Designate the number of sequential devices starting from the device used to sample. The maximum numbers to be designated are shown in the following table.

Device Type to Access	Format	Maximum Number of Devices When Designating Special Protocol Symbols	Maximum Number of Devices When Designating Other Devices
Bit Device	Bit	255	255
16-Bit Devices	Bit	255	255
	16 bits	255	255
	32 bits	127	255
	Single precision floating point	127	255
	Double precision floating point	63	255
	Character string	510	510
32-Bit Devices	16 bits	255	255
	32 bits	255	255
	Single precision floating point	255	255
	Double precision floating point	127	255
	Character string	1020	1020

If you designate values exceeding those maximum numbers or if all devices within the restricted range have not registered as Special Protocol symbols, the warning dialog will appear.

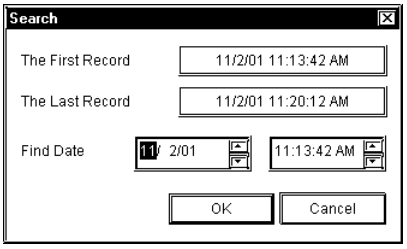
3. The device data that you wish to append are displayed in the [Data Edit] dialog.

Deleting Sampled Data

1. Select the data that you wish to delete in the [Data Edit] dialog.
2. Click [Delete]. The selected data will be deleted.

Searching Sampled Data

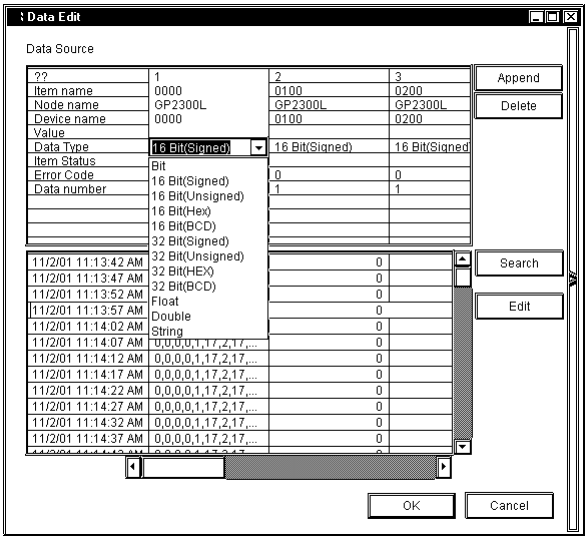
1. Click [Search] in the [Data Edit] dialog.
2. The [Search] dialog appears. Enter the date that you wish to search, and then click [OK].



3. The display contents are updated and data are displayed showing one closest to the date entered in the middle.

Editing Data Source

1. Click the data source field that you wish to edit. The column including the selected field is highlighted so that you can enter data from the keyboard in the selected field. The pull-down list may appear, depending on the item selected.

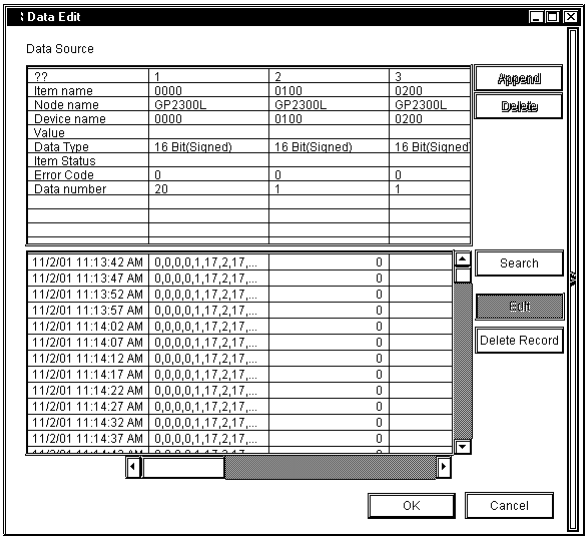


2. Enter the new data from the keyboard. The selected field will be updated.

MEMO Data cannot be edited during Polling.

Editing Saved Data

1. Click [Edit] of the [Data Edit] dialog.
2. The [Edit] button in the [Data Edit] dialog is highlighted, and the [Delete Record] button appears.



3. Select the data that you wish to delete, and then click [Delete Record]. The selected data will be deleted.

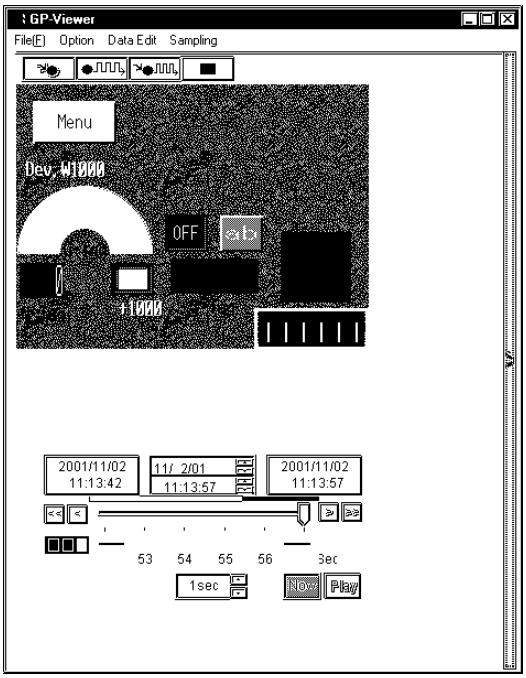
MEMO Click on [OK] to set the selections made in [Edit] and/or [Delete Record].

Click on [Cancel] to delete all current selections.

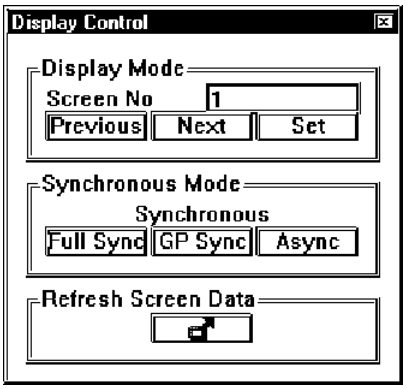
2.4.3 Setting Drawing

This feature allows you to change the display format of the data display area in GP-Viewer.

1. Click [Option] of GP-Viewer.



2. The [Wizard] dialog appears. Perform required settings, and then click [Option] to close the dialog.



[Synchronous Mode]

You can designate the synchronization style between GP screens and GP-Viewer. There are 3 synchronous modes available, Full Synchronous, GP Synchronous and Asynchronous. The following describes each type.

Asynchronous (Async)	Screens can be switched using GP-Viewer. Switching a screen on GP-Viewer does not synchronize with a screen on the GP system.
GP Synchronous (GP Sync)	Screens cannot be switched on GP-Viewer. Switching a screen on the GP system synchronizes with a screen on GP-Viewer. (This is the default setting.)
Full Synchronous (Full Sync)	Screens can be switched using GP-Viewer. Switching a screen on GP-Viewer synchronizes with a screen on the GP system and vice versa.

[Screen No]

This feature allows you to change the displayed screen of GP-Viewer according to screen numbers pre-defined on the GP unit.

If you click [Previous], the previous screen from the currently displayed screen is displayed and the value in the “Screen No” field is reduced by one.

If you click [Next], the next screen from the currently displayed screen is displayed and the value in the “Screen No” field is increased by one.

If you enter the screen number that you wish to display in the “Screen No” field and click [Set], the corresponding screen to the number entered is displayed.

MEMO

- The screen switching feature is effective only when the synchronous mode is either “Asynchronous” or “Full Synchronous”.
- You cannot normally switch screens by GP-Viewer from a host-level PC. You should set bit “4” of GP’s LS2076 to “ON (1)” to switch screens in the “Full Synchronous” mode when using a host-level PCs.

[Refresh Screen Data]

If you changed the GP screen contents, click [Refresh Screen Data]. GP-Viewer will re-capture the setup contents of the GP.

Synchronization Method When Using GP-Viewer with Factory Gateway

When using GP-Viewer with GP/GLC, because GP-Viewer normally starts in the synchronous mode, GP-Viewer can acquire screen No.s from the LS area.

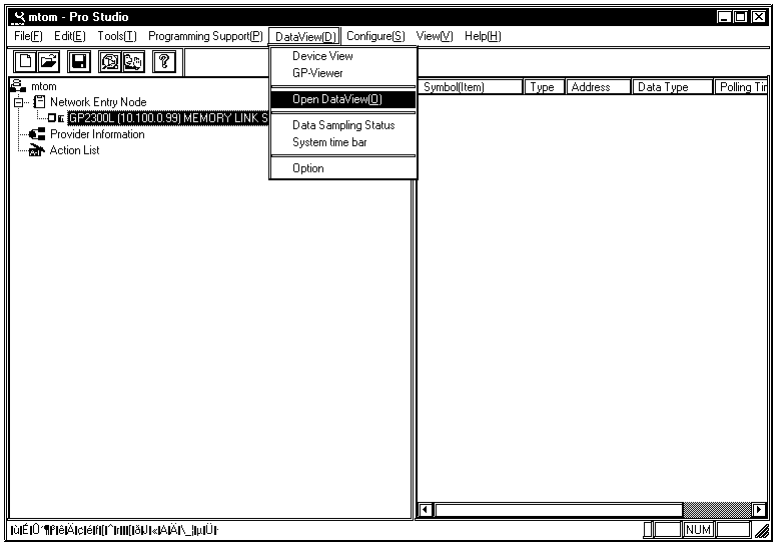
While Factory Gateway does not have screens to display (The concept of the currently displayed screen No. does not exist.), GP-Viewer starts in asynchronous mode.

When uploading data from Factory Gateway, the number displayed in the [Screen No] field of [Display Mode] is equal to the initial screen No. existing in system information of the GP-PRO/PB III for Windows project file (*.prw) within Factory Gateway.

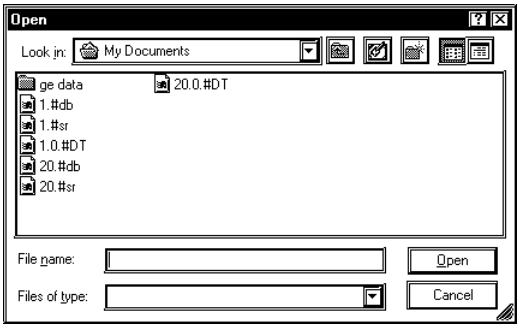
2.4.4 Playback Feature

This feature allows you to playback sampled device data on GP-Viewer.

1. Select [Open Data View (O)] on [Data View (D)].

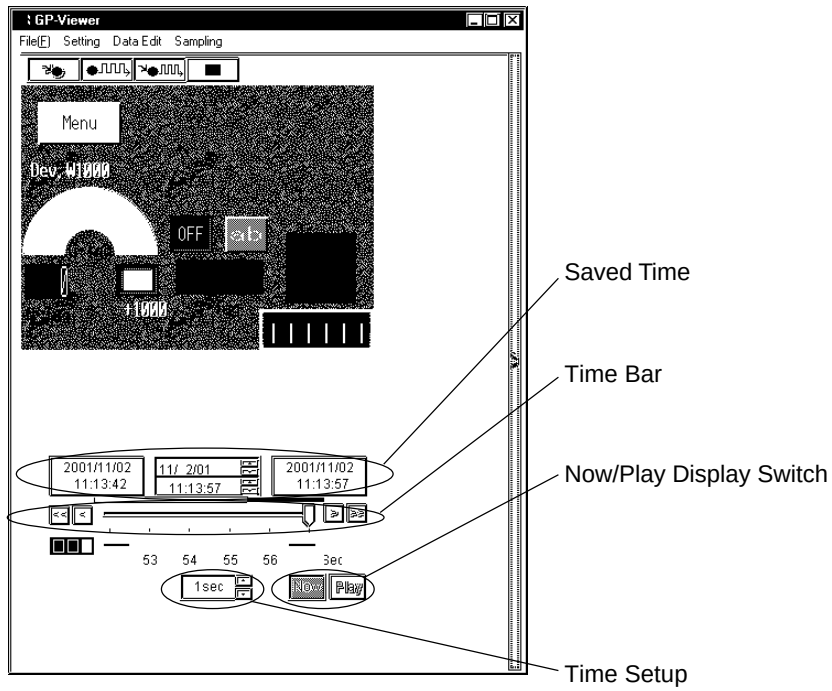


2. The [Open] dialog appears. Select the device data (.#DV) that you wish to playback, and click [Open].



MEMO You can also playback data in the saving process.The following reserved replacement marks are used.

3. The contents of sampled data are displayed on GP-Viewer. You can playback saved data using GP-Viewer's control buttons.



[Saved Time]

This field shows the saved time of saved device data.

The field shows, from the left, the saving start time, the time for currently displayed data and the last saved time. When the current status is displayed, the time for currently displayed data is identical to the last saved time.

[Time Bar]

Saved data can be displayed by sliding the time bar control to either side. The data saving process continues even while you operate the control.

[Time Setup]

You can designate the time unit using the time bar.

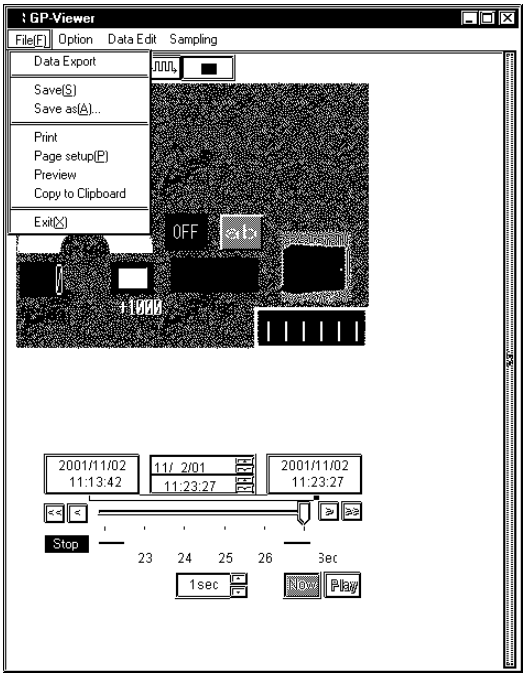
[Now/Play Display Switch]

[Now] and [Play] buttons are available. You can playback the saved data from the designated time either by sliding the time bar control to the time that you wish to start the playback or by clicking the [Play] button after clicking the time for currently displayed data (the center field of [Saved Time]) and then entering the time to start the playback.

2.4.5 Other Features

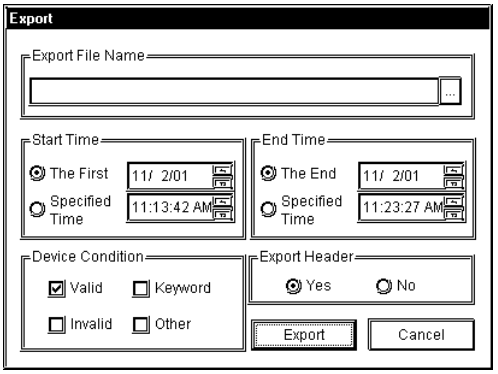
This section describes the File menu and options of GP-Viewer.

1. If you click [File (F)], 8 options are available. The following describes each option.



Exporting Data

1. Select [Data Export] on the [File (F)] menu.
2. The [Export] dialog appears. Designate each item, and then click [Export].



[Export File Name]

Designate the location and the file name to save exported data. The file extension is (.CSV).

[Start Time]

Designate the time to start exporting data. If you wish to start exporting immediately after you clicked [Export], check “The First”. If you wish to start exporting at the designated time, check “Specified Time”. If you checked “Specified Time”, you should also designate the start time to export.

[End Time]

Designate the time to end exporting data. If you wish to export the entire sampled data, check “The End”. If you wish to export until the designated time, check “Specified Time”. If you checked “Specified Time”, you should also designate the end time to export.

[Device Condition]

This is the reserved data. You should not change the designated value.

[Export Header]

If you wish to include the header information in exported data, check “Yes”. If not, check “No”.

[Export]

Executes the data export.

[Cancel]

The process is stopped and goes back to GP-Viewer.

MEMO

- Although you can start multiple GP-Viewer programs, you cannot export data simultaneously.
- You can export data even while storing data. However, if you checked [Designate maximum size/Save over oldest data] in the [Saving Method] dialog, you cannot export while storing data.

Saving Data

1. If you wish to save displayed data to GP-Viewer, click [Save (S)] on the [File (F)] menu. Data will be overwritten.

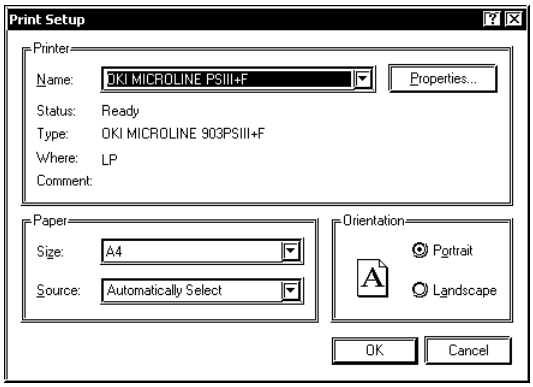
   If you wish to save displayed data to GP-Viewer using a separate file name, click [Save As (A)] in the [File (F)] menu. The [Save As] dialog appears. Enter the file name, and then click [Save (S)].

Print

1. Click [Print] on the [File (F)] menu, to print data.

Page Setup

1. Click [Page Setup(P)] in the [File (F)] menu.
2. The [Print Setup] dialog appears. Designate each item, and then click [OK].



MEMO The contents of the [Page Setup] dialog differ depending on your printer. Refer to the user manual of your printer for details.

Preview

1. Click [Preview] in the [File (F)] menu.
2. The print preview appears.

Copy to Clipboard

1. Click [Copy to Clipboard] in the [File (F)] menu.
2. The data value displayed on GP-Viewer is copied into the clipboard.
3. Paste the data value onto the application used.

MEMO You can only copy data in the data display area of GP-Viewer into the clipboard. You cannot copy data such as a title.

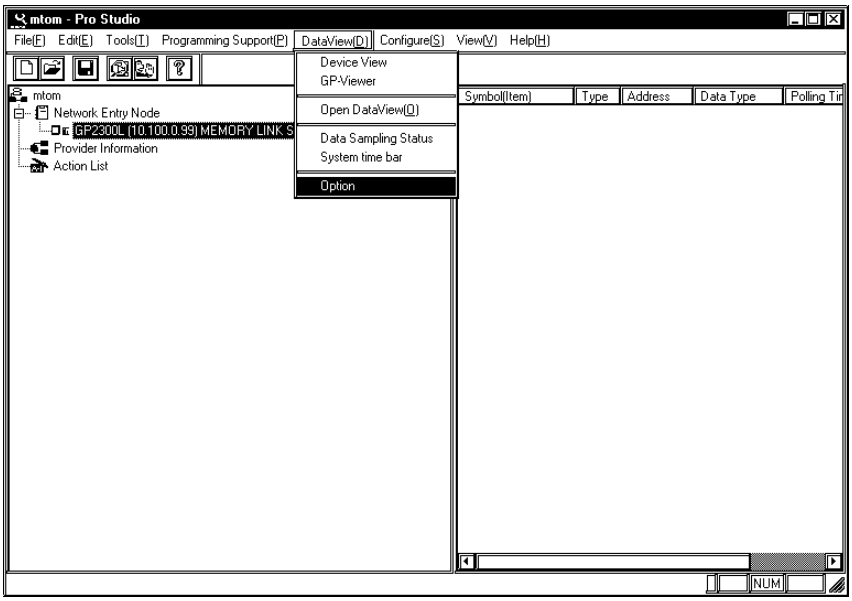
Exit

1. Click [Exit(X)] in the [File (F)] menu. Exits GP-Viewer.

Options

This is selected via [Data View (D)].

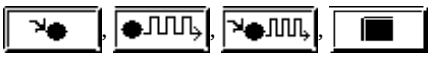
1. Select [Option] on [Data View (D)] of the menu bar.

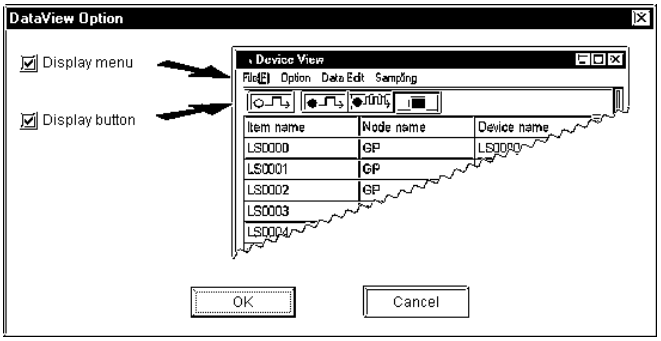


2. The [DataView Option] dialog appears.

You can select “Show/Hide” of the setup menu and the save button.

If you uncheck “Display menu”, the [Option], the [Data Edit], and the [Sampling] menus are hidden.

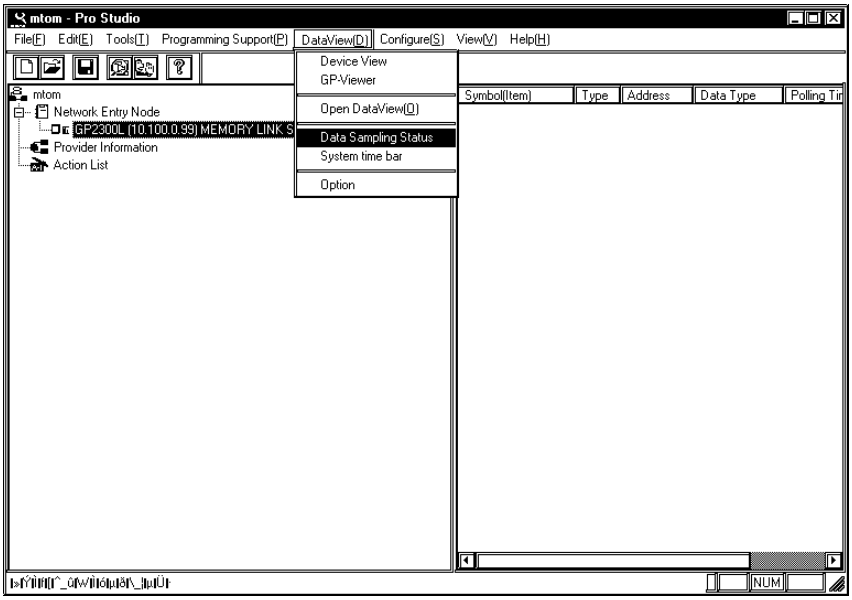
If you uncheck “Display button”,  buttons are hidden.



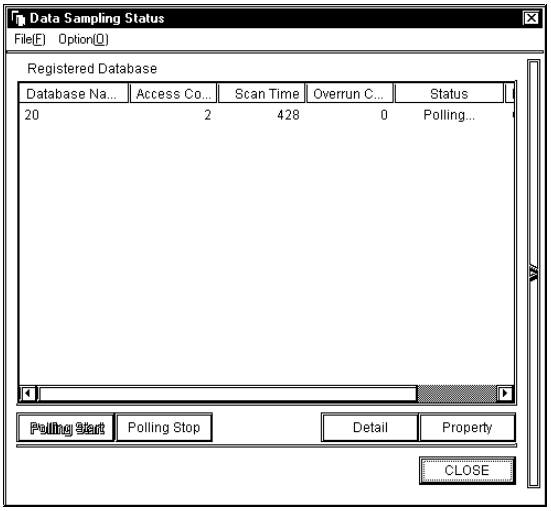
2.5 Checking the Data Sampling Status

This section describes the procedure to check the sampling status of device data. This operation is performed from Pro-Studio.

1. Select [Data Sampling Status] on [Data View (D)] of the menu bar.



2. The [Data Sampling Status] dialog appears. The sampling status of each registered database is displayed so that you can check the contents.



[File (F)]

You can open a database not currently displayed, or close the [Data Sampling Status] dialog.

[Option (O)]

You can set the [Data Sampling Status] dialog to be “displayed on the front always”.

[Registered Database]

Database Name	Database name currently registered.
Access Count	Number of data view (e.g. GP-Viewer, Device View for Pro-Server) displaying database.
Scan Time	Time for one sampling.
Overrun Count	Number of times that sampling failed at the designated timing.
Status	Database status.

[Polling Start]

If you select a database which is not being currently sampled, this button becomes active.

If you click this button, the data save is started.

[Polling Stop]

If you select the database that is currently being sampled, this button becomes active.

If you click this button, data save is stopped.

[Detail]

After selecting the database that you wish to check the detail, click the [Detail] button.

If you click it, the [Detail] dialog appears. The detailed contents of the selected database are displayed.

[Property]

After selecting the database that you wish to change the data sampling condition, click the [Set] button.

If you click it, the [Sampling method] dialog appears so that you can change the data sampling condition of the selected database. The operation procedure is equal to the procedure after step 4 in "2.4.1 Setting the Data Sampling Condition".

2.6 GP Alarm Display Application

If you upload a GP screen where a Q tag (alarm display) has been set for GP-Viewer via Pro-Server, the button will be displayed on the part where alarm is displayed on GP according to the alarm type. If you click this button on GP-Viewer, the GP alarm display application will start and you will be able to check the contents of the alarm.

This alarm display feature does not support “2.4.1 Data Sampling Feature” or “2.4.4 Playback Feature”.

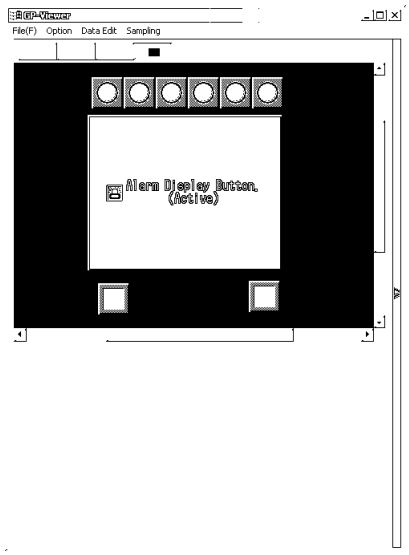
2.6.1 Starting and Exiting GP Alarm Display

Starting GP Alarm Display

1. If you upload the GP screen that the Q tag has been set, the button will be displayed in the data display area of GP-Viewer according to the alarm type. Click the displayed button.

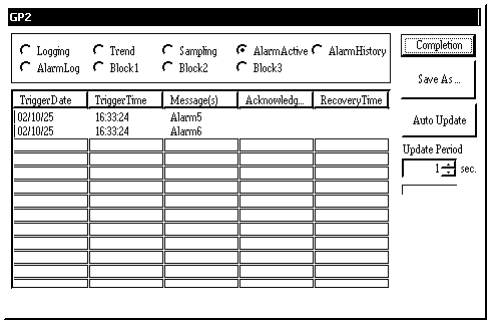
When GP is in the Alarm Active Display Mode:

[Alarm Display Button (Active)] is displayed. Click [Alarm Display Button (Active)].



MEMO If the width of the Q tag set on GP is narrower than that of the character strings of “Alarm Display Button”, only the icon “  ” will be displayed on the button (in red). The button will function the same as the normal “Alarm Display Button(Active)”.

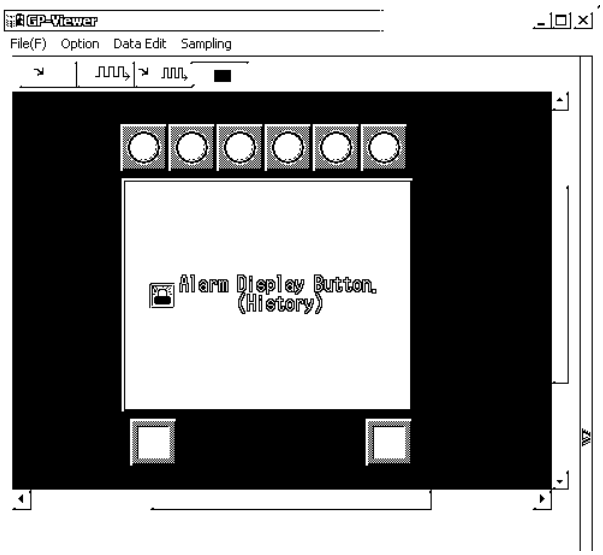
The [GP] window appears to show the contents of Alarm Active.



Every time you click the [Alarm Display Button(Active)], the alarm display application will start and the alarm current contents will appear. Remember that you need to exit these alarm display applications manually.

When GP is in the Alarm History Display Mode:

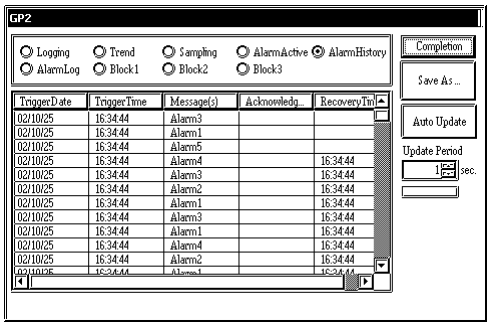
[Alarm Display Button (History)] is displayed. Click [Alarm Display Button (History)].



MEMO

If the width of the Q tag set on GP is narrower than that of the character strings of “Alarm Display Button”, only the icon “  ” will be displayed on the button (in yellow). The button will function as same as the normal “Alarm Display Button(History)”.

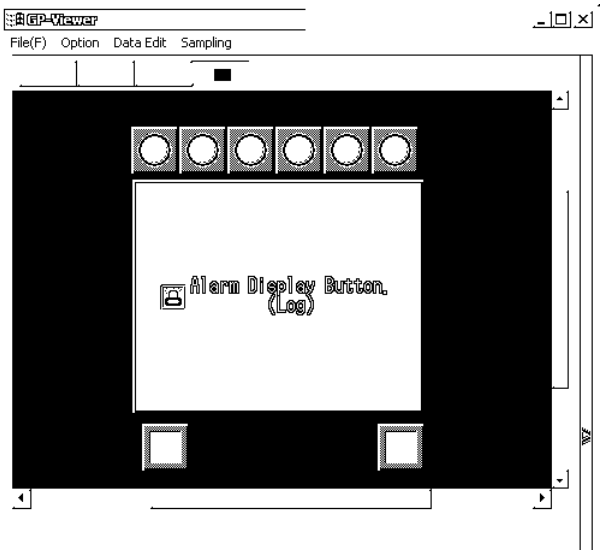
The [GP] window appears to show the contents of Alarm History.



Every time you click the [Alarm Display Button(History)], the alarm display application will start and the alarm history contents will appear. Remember that you need to exit these alarm display applications manually.

When GP is in the Alarm Log Display Mode:

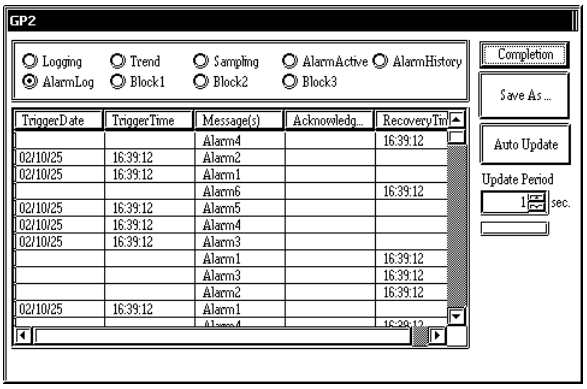
[Alarm Display Button (Log)] is displayed. Click [Alarm Display Button (Log)].



MEMO

If the width of the Q tag set on GP is narrower than that of the character strings of “Alarm Display Button”, only the icon “  ” will be displayed on the button (in green). The button will function as same as the normal “Alarm Display Button(Log)”.

The [GP Alarm Display] window appears.



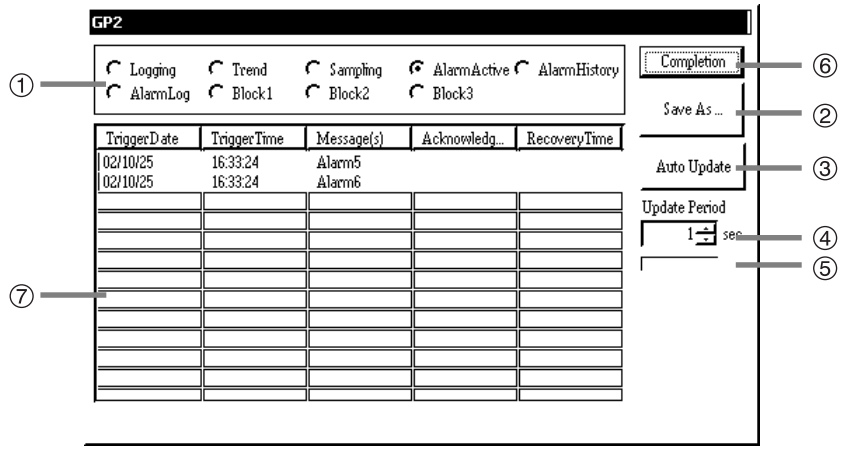
Every time you click the [Alarm Display Button (Log)], the alarm display application will start newly and the alarm log contents will appear. Remember that you need to exit these alarm display applications manually.

Exiting GP Alarm Display

1. Click the [Exit] button in the [GP Alarm Display] window.

2.6.2 Feature of GP Alarm Display Application

The following describes the feature of the GP alarm display application.



① Select the data type to upload from 9 data types. If you click the data type name that you want to display, the data contents will be displayed in the area ⑦. You can display following 9 types of data.

- Logging
- Trend (For details, refer to “2.7 Displaying Trend Graph on Excel”.
- Sampling
- Alarm Active
- Alarm History
- Alarm Log
- Block1
- Block2
- Block3

Every time you click a data type name, new data will be uploaded from GP's SRAM. Here, logging/sampling data that you can display are the contents that you can secondarily display on the GP alarm display application. There are no start triggers like those for displaying Alarm Active/Alarm History/Alarm Log.

② If you click the [Save As...] button, the [Save As] dialog will appear so that you can save currently displayed alarm data in the CSV format.

Because the GP alarm display application overwrites the CSV file every time you upload data, if you do not save currently displayed alarm data, the currently displayed contents are lost when data is updated.

③ If you click the [Auto Update] button, the automatic update will become effective and the [Auto Update] button will stay pushed (the button looks like being pushed). Alarm data are automatically updated every time the time designated in [Update Period] (④) passes. The approximate time until the next update can be known from the ⑤ bar. When the bar is filled to the right edge, alarm data is updated. If you change the setting of [Update Period] (④), the bar will be reset.

Furthermore, you cannot use the [Save As...] button (②) and the [Auto Update] button (③) while alarm data are being updated.

Alarm data saved in GP SRAM are read during the automatic update.

The setting range of [Update Period] is from 1 to 32767 (unit : second).

④ Alarm data are automatically updated every time the period designated here passes.

⑤ The approximate time until the next update is displayed.

⑥ If you click the [Completion] button, the GP alarm display application will exit.

⑦ Data display area.

If you exit GP-Viewer leaving the GP alarm display application displayed, the data type name selection and the automatic alarm data update will not be executed.

However, even in this status, you can save currently displayed alarm data

2.7 Displaying Trend Graph on Excel

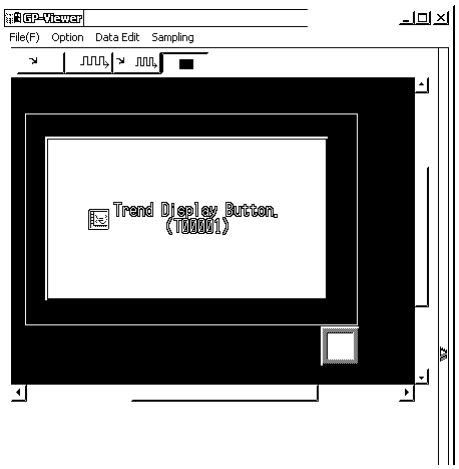
If you upload the GP screen showing a trend graph to GP-Viewer via Pro-Server, the [Trend Display] button will be displayed in the part where a trend graph is displayed on the GP. If you click this button on GP-Viewer, Microsoft Excel will start to display a trend graph.

If you have set the collective display feature on GP-PRO/PB III for Windows, you will not be able to use this feature because the trend graph here is displayed by uploading backup data (CSV file) in GP's SRAM and data cannot be created in the CSV format.

Furthermore, because it is displayed on Microsoft Excel, the display contents may differ (e.g. graduation on a scale, length and breadth ratio of a trend graph) from the actual trend graph displayed on GP.

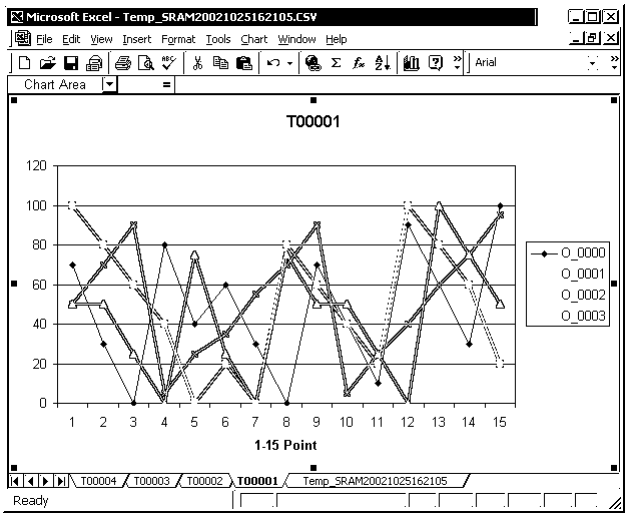
This trend graph display feature does not support "2.4.1 Data Sampling Feature" or "2.4.4 Playback Feature".

1. If you upload the GP screen showing a trend graph, the [Trend Display Button] will be displayed on the GP-Viewer screen. Click the [Trend Display Button].



MEMO If the width of the trend graph on GP is narrower than that of the character strings of "Trend Display Button", only the "  " icon will be displayed on the button (in gray). The button will function as same as the normal "Trend Display Button".

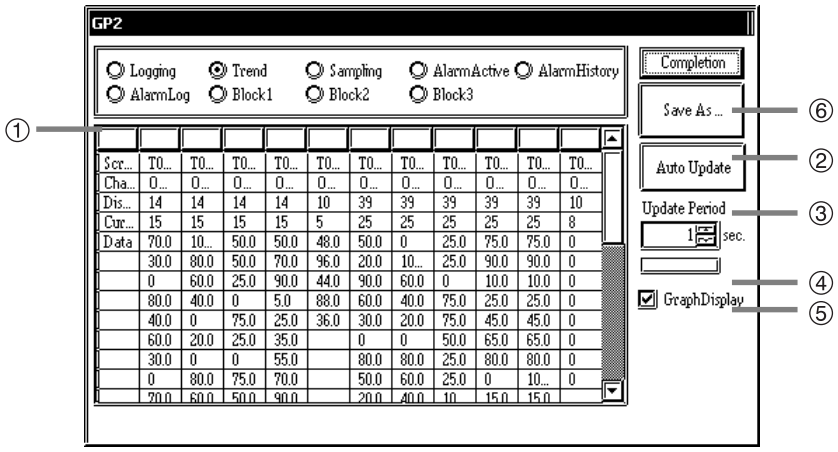
Microsoft Excel starts automatically and a trend graph is displayed.



The sheet with the same name as that of the trend graph screen (“T00001” in the screen in the previous page) described to the clicked [Trend Display] button starts as the active sheet (refer to the parts circled in the above screen).

One Excel sheet is created per one trend graph on the GP screen. However, if data count exceeds 10,000 within one graph, a new sheet will be created to display each graph separately. Sheet numbers are added according to the order that trend graphs are created.

The GP alarm display application starts the moment a trend graph is displayed on Microsoft Excel. You can change features, such as updating conditions of trend graph data, with the GP alarm display application.



① While a trend graph is displayed, [Trend] has been selected in the ① field.

② If you click the [Save As...] button, the [Save As] dialog will appear so that you can save currently displayed trend graph data in the CSV format.

Because the GP alarm display application overwrites the CSV file every time you upload data, if you do not save currently displayed trend graph data, the currently displayed contents are lost when data are updated.

③ If you click the [Auto Update] button, the automatic update will become effective and the [Auto Update] button will stay pushed (the button looks like being pushed). Trend graph data are automatically updated every time the time designated in [Update Period] (④) passes. The approximate time until the next update can be known from the ⑤ bar. When the bar is filled to the right edge, trend graph data is updated. If you change the setting of [Update Period] (④), the bar will be reset.

While the automatic update is executed, the sheet with the same name as that of the trend graph screen described on the [Trend Display] button becomes the active sheet. Even while you made other sheet active, the original sheet becomes active when new data are displayed.

You cannot use the [Save As...] button (②) and the [Auto Update] button (③) while trend graph data are being updated.

Trend graph data saved in GP SRAM are read during the automatic update.

The setting range of [Update Period] is from 1 to 32767 (unit : second).

④ Trend graph data are automatically updated every time the period designated here passes.

⑤ The approximate time until the next trend data update is displayed.

⑥ If you uncheck the [Graph Display] checkbox, Microsoft Excel will exit and a graph will be closed. However, even while a graph is not displayed, the automatic update (trend graph data update) is continued. If you check [Graph Display] (⑥), Microsoft Excel will start to display the latest trend graph data already updated.

⑦ If you click the [Completion] button, the GP alarm display application will exit.

Every time you click the [Trend Display] button, Microsoft Excel and the GP alarm display application will start, and a trend graph and trend graph data history will appear. Remember that you need to exit these programs manually.

Furthermore, if more than one Microsoft Excel has been started, Microsoft Excel that you can exit by unchecking [Graph Display] is the last started one.

While displaying the GP alarm display application, if you exit GP-Viewer, trend graph data will not be updated automatically.

However, even in this status, you can save currently displayed trend graph data.

2.8 Special Protocol

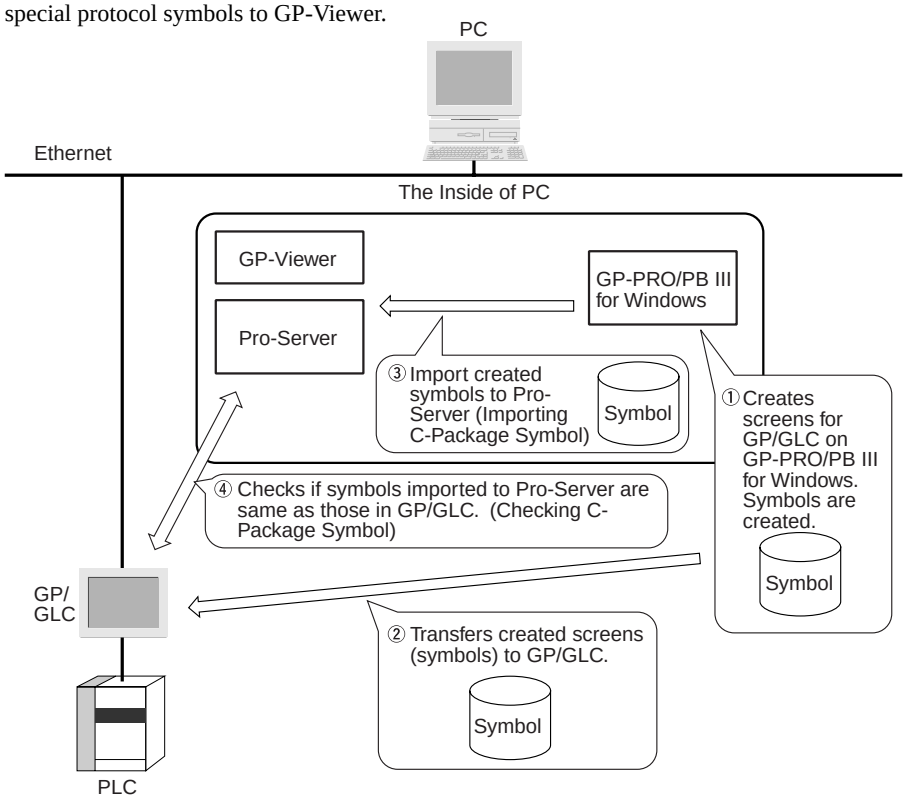
GP-Viewer recognizes following 4 kinds of protocol as “Special Protocol”.

- OMRON SYSMAC-CS1 (ETHER)
- Mitsubishi Electric MELSEC NET/10
- SIEMENS S7-200MPI
- Allen Bradley SLC500 DH485

You must import special protocol symbols (screen creation definition symbols) to the corresponding GP with Pro-Server before you upload GP screen data using special protocol symbols with GP-Viewer. For details, refer to “Pro-Server with Pro-Studio for Windows Operation Manual” and “3.13 Other Important Matters”.

The following figure shows the operation flow related to special protocol symbols.

If ①, ② and ③ in the figure below are not the same symbols, you cannot upload the GP screen using special protocol symbols to GP-Viewer.



If symbol information shown as ② is different from that shown as ③ in the above figure, the following dialog will appear when uploading screen data from GP.

If you upload the GP screen that the special protocol symbol setting has been changed or deleted on the way to GP-Viewer, the data will not be displayed correctly.

Appendix

A.1 Supported Drawing Commands

Among GP-PRO/PBIII drawing commands, the following commands are supported by GP-Viewer.

Only the following drawing features can be used.

- line/poly-line command
- rectangle command
- circle/ellipse command
- arc/sector command
- polygon fill command
- ruler command
- text string command
- mark call-up command

Among these drawing commands, there are some functions not available with GP-Viewer. Functions available and not available with GP-Viewer are listed below for each drawing command.
The display may differ between GP and GP-Viewer even if drawing commands are supported.

		Ver. 1.0	Ver. 1.1
Line/Poly-line Command			
	specifying a display color	Yes	Yes
	blinking a display color	Yes	Yes
	specifying a background color	No	No
	blinking a background color	No	No
	drawing an arrow	Yes	Yes
	drawing a solid line	Yes	Yes
	drawing a dotted line	No	No
Rectangle Command			
	specifying a display color	Yes	Yes
	blinking a display color	Yes	Yes
	specifying a background color	No	No
	blinking a background color	No	No
	drawing a solid line	Yes	Yes
	drawing a dotted line	No	No
	chamfering	Yes	Yes
	specifying the number of dots in chamfering	Yes	Yes
	solid fill pattern	Yes	Yes
	fill patterns except for a solid fill	No	No

		Ver. 1.0	Ver. 1.1
Circle/Ellipse Command			
	specifying a display color	Yes	Yes
	blinking a display color	Yes	Yes
	specifying a background color	No	No
	blinking a background color	No	No
	drawing a solid line	Yes	Yes
	drawing a dotted line	No	No
	solid fill pattern	Yes	Yes
	fill patterns except for a solid fill	No	No
Arc/Sector Command			
	specifying a display color	Yes	Yes
	blinking a display color	Yes	Yes
	specifying a background color	No	No
	blinking a background color	No	No
	drawing a solid line	Yes	Yes
	drawing a dotted line	No	No
Polygon Fill Command			
	specifying a display color	Yes	Yes
	blinking a display color	Yes	Yes
	specifying a background color	No	No
	blinking a background color	No	No
	drawing a solid line	Yes	Yes
	drawing a dotted line	No	No
	solid fill pattern	Yes	Yes
	fill patterns except for a solid fill	No	No
Ruler Command			
	specifying a display color	Yes	Yes
	blinking a display color	Yes	Yes
	specifying a background color	No	No
	blinking a background color	No	No
	drawing a solid line	Yes	Yes
	drawing a dotted line	No	No
	ruler type	Yes	Yes
	number of graduations to be divided	Yes	Yes

		Ver. 1.0	Ver. 1.1
Text String Command			
	specifying a display color	Yes	Yes
	blinking a display color	Yes	Yes
	specifying a background color	Yes	Yes
	blinking a background color	Yes	Yes
	specifying a shade color of a carving style	Yes	Yes
	blinking a shade color of a carving style	Yes	Yes
	text direction	Yes	Yes
	text style	Yes	Yes
	text size	Yes	Yes
	text rotation angle	Yes	Yes
	text font	No	No
Mark Call-up Command			
	specifying a display color	Yes	Yes
	blinking a display color	Yes	Yes
	specifying a background color	Yes	Yes
	blinking a background color	Yes	Yes
	specifying a mark size	Yes	Yes

A.2 Supported Tag Commands

The following GP-PRO/PBIII tag commands are supported by GP-Viewer.

Only the following tags are supported.

- C tag
- E tag
- F tag
- G tag
- K tag
- L tag
- M tag (newly supported from Ver.1.1)
- N tag
- S tag
- T tag
- U tag

Among these tag commands, there are some features not available with GP-Viewer. Refer to the following list for each tag command.

The display may differ for GP and for your GP-Viewer even if drawing commands are supported.

		Ver. 1.0	Ver. 1.1
C Tag			
	character size	Yes	Yes
	specifying a display color	Yes	Yes
	blinking a display color	Yes	Yes
	specifying display rotation	Yes	Yes
	specifying a tiling pattern	Yes	Yes
	specifying a background color	Yes	Yes
	character size (full/half)	Yes	Yes
	specifying a background color at tiling	Yes	Yes
E Tag			
	specifying data (absolute/relative)	Yes	Yes
	specifying a sign	Yes	Yes
	rounding off numbers	Yes	Yes
	specifying a display data form	Yes	Yes
	specifying display address (indirect)	No	No
	bit length when [relative] is selected	Yes	Yes
	input sign when [relative] is selected	Yes	Yes
	input display when [relative] is selected	Yes	Yes
	input range when [relative] is selected	Yes	Yes
	display range when [relative] is selected	Yes	Yes
	character size	Yes	Yes
	the number of digits to be displayed	Yes	Yes
	the number of decimals	Yes	Yes
	display style	Yes	Yes

		Ver. 1.0	Ver. 1.1
E Tag			
	specifying a range	Yes	Yes
	the number of ranges	Yes	Yes
	setting a range	Yes	Yes
	specifying a number color	Yes	Yes
	blinking a number color	Yes	Yes
	specifying a background pattern	Yes	Yes
	specifying a background color	Yes	Yes
	blinking a background color	Yes	Yes
	operation	Yes	Yes
	specifying display rotation	Yes	Yes
F Tag			
	specifying a display (direct/indirect)	Yes	Yes
	type of screen (base screen/image screen)	Yes	Yes
	type of screen (CF card image screen)	No	No
	screen number	Yes	Yes
	specifying a word address	Yes	Yes
	specifying a display data form when [relative] is selected	Yes	Yes
	operation mode (area move/move between 2 points)	Yes	Yes
	displaying a display data form	Yes	Yes
G Tag			
	specifying data (absolute/relative)	Yes	Yes
	display mode	Yes	Yes
	display a data form when [absolute] is selected (BIN/BCD)	Yes	Yes
	input range when [relative] is selected	Yes	Yes
	chart type (bar chart/pie chart/half-pie chart)	Yes	Yes
	fill patterns for a bar chart	Yes	Yes
	chart fill patterns except for a bar chart	No	No
	indicating a starting point of a meter-type pie or half-pie chart	Yes	Yes
	specifying a display color	Yes	Yes
	specifying a background color	No	No
	blinking a background color	No	No
	displaying alarm	Yes	Yes
	specifying alarm background color	No	No
	blinking alarm background color	No	No
	specifying display rotation	Yes	Yes

		Ver. 1.0	Ver. 1.1
K Tag			
	specifying a data (absolute/relative/character string)	Yes	Yes
	specifying a word address	Yes	Yes
	specifying a starting bit address	No	No
	specifying a display address (indirect)	No	No
	specifying a sign	Yes	Yes
	rounding off numbers	Yes	Yes
	specifying display/write data form	Yes	Yes
	bit length when [relative] is selected	Yes	Yes
	input sign when [relative] is selected	Yes	Yes
	input range when [relative] is selected	Yes	Yes
	display range when [relative] is selected	Yes	Yes
	the number of characters to be displayed when [character string] is selected	Yes	Yes
	character size	Yes	Yes
	the number of digits to be displayed	Yes	Yes
	the number of decimals (direct/indirect)	Yes	Yes
	specifying display style	Yes	Yes
	automatic clear	No	No
	checking the number of digits to be input	No	No
	bar code input	No	No
	alarm (direct/indirect/color change)	Yes	Yes
	specifying an alarm display color	Yes	Yes
	blinking an alarm display color	Yes	Yes
	specifying an alarm background color	Yes	Yes
	blinking an alarm background color	Yes	Yes
	operation	Yes	Yes
	specifying display rotation	Yes	Yes
L Tag			
	screen number (direct/indirect/state)	Yes	Yes
	starting method	Yes	Yes
	calling the base screen and the image screen	Yes	Yes
	delete action (enable/unable)	Yes	Yes
	display a data form when [indirect] is selected (BIN/BCD)	Yes	Yes
	calling image screens in the CF Card	No	No

		Ver. 1.0	Ver. 1.1
M Tag *			
	screen number (direct/indirect)	Yes	Yes
	starting method	Yes	Yes
	display data form when [indirect] is selected (BIN/BCD)	Yes	Yes
	offset value	Yes	Yes
	specifying a display size	Yes	Yes
	display color (0) foreground color	Yes	Yes
	display color (0) blinking a foreground color	Yes	Yes
	display color (0) background color	Yes	Yes
	display color (0) blinking a background color	Yes	Yes
	display color (1) foreground color	Yes	Yes
	display color (1) blinking a foreground color	Yes	Yes
	display color (1) background color	Yes	Yes
	display color (1) blinking a background color	Yes	Yes
N Tag			
	specifying data (absolute/relative)	Yes	Yes
	specifying if to show a negative number	Yes	Yes
	specifying a display data form	Yes	Yes
	access a data length	Yes	Yes
	input range when [relative] is selected	Yes	Yes
	text size	Yes	Yes
	text font	No	No
	number of digits to be displayed	Yes	Yes
	specifying a display color	Yes	Yes
	blinking a display color	Yes	Yes
	specifying a background color	Yes	Yes
	blinking a background color	No	No
	alarm process	Yes	Yes
	specifying an alarm color	Yes	Yes
	blinking an alarm color	Yes	Yes
	specifying an alarm background color	Yes	Yes
	blinking an alarm background color	No	No
	operator process	Yes	Yes
	specifying display rotation	Yes	Yes

*: M tag is newly supported from Ver.1.1.

		Ver. 1.1
S Tag		
	starting method	Yes
	post-start read	Yes
	text size	Yes
	text font	No
	number of texts to be displayed	Yes
	specifying a text color	Yes
	blinking a text color	Yes
	specifying a background color	Yes
	blinking a background color	Yes
	display location	Yes
	clearing display	Yes
	specifying display angle	Yes
T Tag		
	write action mode (bit/word/special)	Yes
	specifying an operator	Yes
	hierarchical screen switching	Yes
	special actions except for T tag extension	No
	Q tag extended action	No
	function key process	No
	interlock capability	Yes
	grouping with the automatic disable capability	Yes
	addition/subtraction on/from a specified digit	Yes
	GP reset	Yes
	AUX output	No
	buzzer sound	Yes
	reverse display	Yes
U Tag		
	specifying method of the window registration screen (direct/ indirect)	Yes
	display a data form when [indirect] is selected (BIN/BCD)	Yes
	action mode	Yes
	reshuffling of overlapped screens	Yes

A.3 Error Messages

GP-Viewer displays the following messages if an error occurs.

Error code is displayed in Error Message window or Web browser. GP-Viewer also displays Pro-Server error massages. If you find such messages, refer to the Pro-Server manual.

For GP Screen JPEG Display:

Code	Message
18000	Cannot find Screen File Number XXXX.
18001	Cannot find Screen File XXXX.
18002	Applet cannot be started, because Communication method has not been designated.
18003	XML Analysis error
18004	Primary node name does not exist in browser.(DEFNODE parameter is not designated in the HTML file.)
18005	Polling start-up failure error
18006	Read Error: Image File
18007	Read Error: Mark File
18008	Cannot start the GP Log Data Display program.
18010	Unable to locate Bit Map Screen Data file.
18021	Data transfer has been interrupted (Transmission Time Out)
18023	Pro-Server returned error after analyzing device name. Also, when using a special protocol, Screen Creation Definition Symbol(s) may not import correctly.
18024	Pro-Server returned error after attempting device read.
18025	Pro-Server returned error after attempting device write.
18026	Pro-Server returned error after attempting GP reset.
18027	Due to network error, unable to send data
18028	Response communication data packet contains illegal data
18029	Response communication data packet header is illegal
18030	Illegal code in communication data packet :
18031	System Error
18032	User Name data entry has been cancelled. This is because the current user does not have the access privilege.
18033	Cannot find File : XXXX
18034	JAVA Error : XXXX
18036	Incorrect version of protocol format.

For GP-Viewer Compiler:

Code	Message
20601	Start this program from GP-Viewer.
20602	Unable to read the screen size. (Pro-Server error code:%d)
20603	Unable to access to the selected IP Address. (Pro-Server error code:%d)
20604	Unable to obtain the Port Number. (Pro-Server error code:%d)
20605	Since the designated node is a PC, not a GP, GP-Viewer cannot be started.
20606	The designated GP is not compatible with GP-Viewer. (Pro-Server error code:%d)
20607	No IP address can be found.
20608	There is no output folder for the screen data.
20609	Failed to create socket.
20610	Failed to disconnect the connection with the other end.
20611	Failed to open the file.
20612	Screen data upload aborted.
20613	Unable to connect to the designated station.
20614	Unable to begin communication with the designated station.
20615	Failed to terminate communication with the designated station.
20616	Incorrect shut down upon password authentication.
20617	File read error.
20618	Do not have designated node's upload data. Will use that unit's default screen size.

For GP Alarm Display:

Code	Message
21201	CSV file read has failed
21203	Designated file does not exist, or read in of file failed
21206	Select Alarm Item before you push the "UpLoad" button
21207	CF CARD file(s) does not exist
21208	ProEasy.dll is not correctly installed
21209	Unable to get ProServer handle
21210	No data to save
21211	This operation/feature is not supported (Your current ProEasy.dll version may be old.)
21212	Unable to save data. Possibly no access privilege for designated file
21213	Be sure to select an Alarm Item before clicking [Auto Update]
21214	Be sure to select an Alarm Item before selecting [Save as...]
21215	TrandDataCSVToXLS.exe is not correctly installed
21216	No data to display in the graph
21217	The File Name is too long

A.4 Installing “Java Virtual Machine” (Java VM) When Using Windows XP

When using Windows XP, you should use Windows Update to install “Java Virtual Machine”. Install it using the following procedure.

If you use Windows XP SP1 (Service Pack 1), “Java Virtual Machine” will be also installed during the OS installation, so you do not have to perform the following setup.

1. Start Internet Explorer and select [Tool]-[Windows Update].
2. Select [Windows Update Customize].
3. Select [Display the link to the Windows Update catalog under related items].
4. Save the setting by selecting [Save Setting].
5. Confirm if [Windows Update Catalog] has been added in related items, and then select it.
6. Select [Search Microsoft Windows operating system update].
7. Select either [Windows XP Professional] or [Windows XP Home Edition].
8. Select [Detailed setting of search options], and then enter [java] as the search key word.
9. Execute search by [Search].
10. After one [Important Update and Service Pack] is found, select the found contents.
11. After selecting the [Add] button, select [Move to the download basket].
12. Designate the download destination of the module in [Enter or browse the download destination], and then select [Download now].
    The download process starts.
13. Confirm if [Software\ja\com_microsoft.WindowsXP\x86WinXP\com_microsoft.javavm_3319_MIL_4275\MSJava86.exe] exists in the designated download destination directory.

That is all for the “Java Virtual Machine” installation procedure.

The above procedure is as of November, 2002. The installation procedure may be changed due to specification change. For details, visit the Microsoft homepage.

A.5 New and Enhanced Features of GP-Viewer Ver.1.1

The following describes the outline of newly added features and the enhanced features of GP-Viewer Ver.1.1 when compared with GP-Viewer Ver.1.0.

1. Improved screen switching speed

   The screen switching speed has been improved by taking precedence over the input process due to screen switching.

2. Trend graph display button ([Trend Display] button) support

   By supporting the trend graph display button ([Trend Display] button) at the location corresponding to the trend graph display part in the GP screen, trend graph data can be displayed now on GP-Viewer using Excel.

3. Q tag display button support

   By supporting the button to call the GP alarm display feature, the contents displayed by the Q tag on GP can be easily displayed at the Q tag location of the GP screen.

4. Special protocol support

   4 types of special protocol (refer to page 1-9) can be used on GP-Viewer.

5. M tag support

   Supports the M tag of GP-PRO/PB III for Windows.

6. Factory Gateway's Screen No. display support

   When using GP-Viewer for Factory Gateway, GP-Viewer starts in the asynchronous mode because Factory Gateway does not have screens to display (The concept of the currently displayed screen No. does not exist.). Also, when uploading data from Factory Gateway, the number can be displayed now in the [Screen No.] field of [Display Mode] using the initial screen No. existing in system information of the GP-PRO/PB III for Windows project file (*.prw) within Factory Gateway.

7. Factory Gateway's screen size read support

   When using GP-Viewer for Factory Gateway, data can be displayed now in the screen size of the GP type set by GP-PRO/PB III for Windows.