GP-Viewer EX

Operation Manual

06/2023

Pro-face™

by Schneider Electric

Preface

Please read the manuals carefully for correct use of this product. Please be sure to keep the manuals handy so that you can refer to them at any time.

NOTES

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The following terms differ from the formal trade names and trademarks indicated in this document.

Term used in this manual	Formal Trade Name or Trademark
Windows XP	Microsoft® Windows® XP Operating System
Windows Vista	Microsoft® Windows Vista® Operating System
Windows 7	Microsoft® Windows® 7 Operating System
Windows 8	Microsoft® Windows® 8 Operating System
Windows 8.1	Microsoft® Windows® 8.1 Operating System
Windows 10	Microsoft® Windows® 10 Operating System
Windows 11	Microsoft® Windows® 11 Operating System
Windows Embedded Standard 2009	Microsoft® Windows® Embedded Standard Runtime
Windows Embedded Standard 7	Windows® Embedded Standard 7 Runtime (WS7P)(ESD)
Windows 10 IoT	Microsoft® Windows® 10 IoT Enterprise 2019 LTSC
Windows Server 2003	Microsoft® Windows Server® 2003 Operating System
Internet Explorer	Microsoft® Internet Explorer®
Pentium	Intel® Pentium® Prosessors

Manual Symbols and Terminology

Safety Symbols and Terms

This manual uses the following symbols to identify important information related to the correct operation of GP-Viewer EX. The symbols used here also identify important safety-related information.
Symbols and meaning are as follows.

The addition of this symbol to a "Danger" or "Warning" safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

> ### ⚠ DANGER
> **DANGER** indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

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

> ### ⚠ CAUTION
> **CAUTION** indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

> ### *NOTICE*
> ***NOTICE*** is used to address practices not related to physical injury.

General Information Symbols and Terms

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

Symbols	Description
IMPORTANT	States precautions and restrictions that must be followed.
NOTE	Provides tips on correct product use or supplementary information.
*	Indicates an item with an explanatory footnote.
☞	Indicates an item's related information.
1, 2	Indicates an operation procedure. Follow the numbered steps.

Terminology

This manual uses the following terms and acronyms in its descriptions.

Symbols	Description
Screen Editor & Logic Program Software	Indicates GP-Pro EX.
Display Unit	Indicates a touch panel display unit manufactured by Pro-face for displaying the screen interface designed in GP-Pro EX.
Device/PLC	Indicates a device, such as a PLC, that connects to a display unit.
PLC	Indicates Programmable Logic Controllers.
GP	Indicates GP3000 Series and GP4000 Series display units.
IPC	Indicates PS Series, PL Series and PC/AT compatible machines.

This manual describes operations with an emphasis on the GP3000 Series. If you use models other than the GP3000 series, references to "display unit" and "GP" apply to the model you use. For models that support an SD card or CFast card, references to "CF"/"CF Card" apply to the memory card you are using.

Global Code

A global code is assigned to every Pro-face product as a universal model number.
For more information on product models and their matching global codes, please refer to the following URL.
http://www.pro-face.com/trans/en/manual/1003.html

Precautions

This manual describes safety symbols and terms for the correct and safe operation of GP-Viewer EX. Please read this manual and all related manuals carefully to understand the correct operation and features of GP-Viewer EX.

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

- Touch panel switches should NOT be used to make a switch that could result in human injury or equipment damage. Trouble with the GP main unit, units, and cables which keep the output ON or OFF could result in a serious accident. An output signal that could result in a serious accident must be equipped with a monitoring circuit such as a limiter. Also, the system must be designed for important actions to be conducted from a device other than the GP main unit. This will prevent an accident due to false output or malfunction.
- Touch panel switches should NOT be used for a device's Emergency Stop Switch. The Ministry of Health, Labor and Welfare requires all industrial machinery/systems must be equipped with a mechanical, manually operate emergency stop switch. Also, for other kinds of systems, similar mechanical switches must be provided to ensure safe operation of those systems.
- When operating the display unit from GP-Viewer EX, unexpected actions may occur in the equipment resulting in damage and physical injury. Before you run any operations, confirm and get acknowledgment from the work site. Additionally, use a Special Switch (Operation Lock) with the Do Not Automatically Unlock check box selected when designing your system so that equipment does not move on its own.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠ CAUTION

HEARING DAMAGE

- The GP-Pro EX install disk is a CD-ROM or DVD-ROM. Never play the CD-ROM/DVD-ROM on an audio CD/DVD player. Unexpected volume can cause hearing problems or speaker damage.

Failure to follow these instructions can result in injury or equipment damage.

NOTICE

LOSS OF DATA

- Do not turn off your personal computer's power switch during the execution of a program. The project files could be damaged as a result.
- Do not change the contents of this product's project files using Text Editor software. It might destroy the project files.
- Do not turn off or reset the display unit while using features that update the stored project files. Doing so could damage the project files.

Failure to follow these instructions can result in equipment damage.

Cybersecurity

Cybersecurity Guideline

Use this product inside a secure industrial automation and control system. Total protection of components (equipment/devices), systems, organizations, and networks from cyber attack threats requires multi-layered cyber risk mitigation measures, early detection of incidents, and appropriate response and recovery plans when incidents occur. For more information about cybersecurity, refer to the Pro-face HMI/IPC Cybersecurity Guide. .https://www.proface.com/en/download/manual/cybersecurity_guide

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⚠ WARNING

POTENTIAL COMPROMISE OF SYSTEM AVAILABILITY, INTEGRITY, AND CONFIDENTIALITY

- Change default passwords at first use to help prevent unauthorized access to device settings, controls and information.
- Disable unused ports/services and default accounts, where possible, to minimize pathways for malicious attacks.
- Place networked devices behind multiple layers of cyber defenses (such as firewalls, network segmentation, and network intrusion detection and protection).
- Apply the latest updates and hotfixes to your Operating System and software.
- Use cybersecurity best practices (for example: least privilege, separation of duties) to help prevent unauthorized exposure, loss, modification of data and logs, interruption of services, or unintended operation.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

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Chapter 5   Troubleshooting

1 | Summary

1.1 GP-Viewer EX

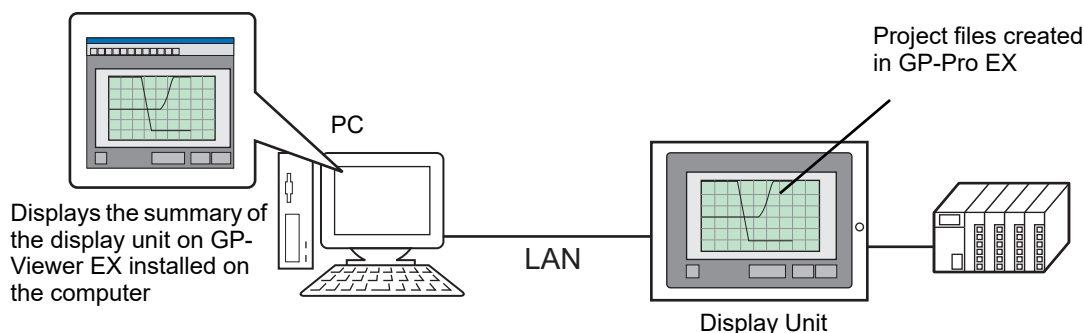| ⚠ **WARNING** |
| --- |
| **UNINTENDED EQUIPMENT OPERATION** |
| • When operating the display unit from GP-Viewer EX, unexpected actions may occur in the equipment resulting in damage and physical injury. Before you run any operations, confirm and get acknowledgment from the work site. Additionally, use a Special Switch (Operation Lock) with the Do Not Automatically Unlock check box selected when designing your system so that equipment does not move on its own. |
| **Failure to follow these instructions can result in death, serious injury, or equipment damage.** |

GP-Viewer EX is an application that displays and operates remotely located display screens. It enables you to recover and monitor activities for troubleshooting and perform daily maintenance.

To use this feature, the computer and display unit must be placed on the same network. GP-Viewer EX must be installed on the computer and the license must be set for the display unit. You can install GP-Viewer EX from your GP-Pro EX Ver2.10 or later CD/DVD-ROM, or downloaded from the Home page.

Project files created in GP-Pro EX

PC

Displays the summary of the display unit on GP-Viewer EX installed on the computer

LAN

Display Unit

License

Key code

To use GP-Viewer EX, you must purchase a separately sold license. (Model: EX-VIEWER-LICENSE). With the license, a document with a [Key code] will be issued.

IMPORTANT	• To enter key codes, please refer to the following. ☞ Maintenance/Troubleshooting: "M5.3 GP-Viewer EX and RPA license settings" • The key code cannot be re-issued if lost. Please store it securely.

Application

GP-Viewer EX is installed from the following location.
• For installations using a CD/DVD-ROM of GP-Pro EX (Ver2.10 or later)

Insert the CD-ROM/DVD-ROM in your computer's CD/DVD drive, and in the setup screen click [GP-Viewer EX].

If the setup screen does not appear, open the CD-ROM/DVD-ROM's [GPViewerEX] folder and double-click "setup.exe".

• For downloading from the home page
You can also download the setup file from the home page "Otasuke Pro!"
http://www.proface.com/trans/en/manual/1001.htm

NOTE   • For installation procedures, refer to the following.
☞ GP-Pro EX Reference Manual, "Installing and Uninstalling GP-Viewer EX"
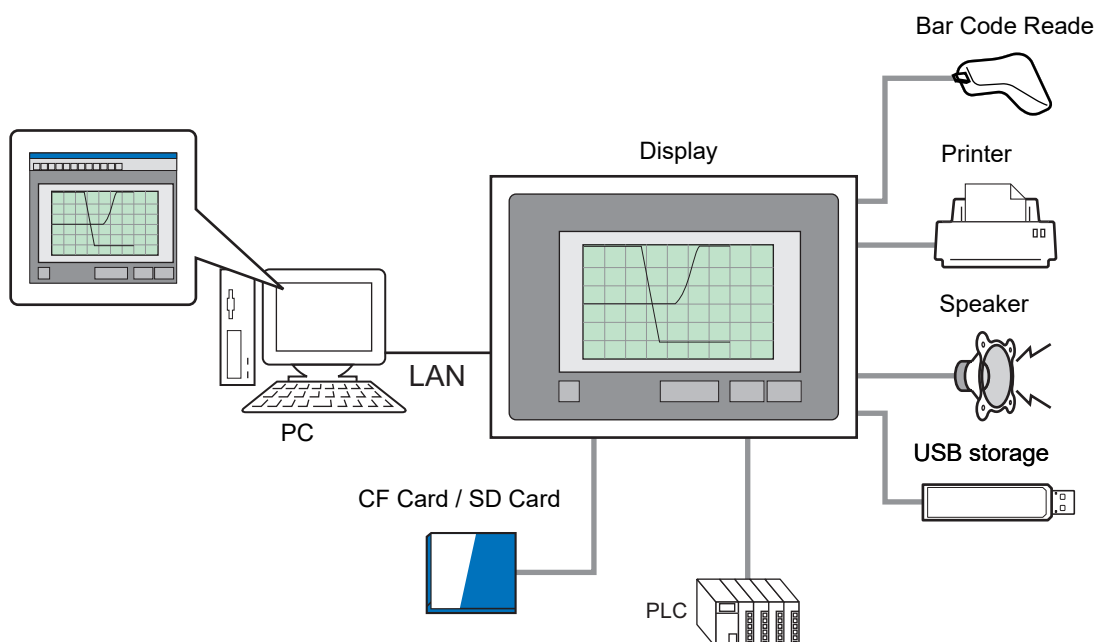
Target Models

For the display unit models that support GP-Viewer EX, please see below.
☞ GP-Pro EX Reference Manual, "Supported Features"

Full Configuration

Connection or option environment when using GP-Viewer EX is as follows.

1.2 Operation Environment

You can install GP-Viewer EX to the following environments.

> IMPORTANT • To install GP-Viewer EX or save changes to GP-Viewer settings on Windows Embedded models, turn off the write filter.

PC	Windows® PC/AT compatible machine

Operating System	• Windows 11
	  64-bit versions of Home, Pro, and Enterprise
	• Windows 10
	  32-bit/64-bit versions of Home, Pro, and Enterprise
	• Windows Embedded Standard 7 (ML)[*1]

Memory	Follows the above operating system requirements.
CPU	Follows the above operating system requirements.
Hard Disk Space[*2]	150 MB or more
Resolution	1024 x 768 or higher

Language	• Display Language of Software Menu
	  English, Japanese
	• Language that can be displayed on GP-Viewer EX
	  ASCII supported languages, Japanese, Korean, Chinese (Traditional), Chinese (Simplified), Russian (Cyrillic) and Thai.

Requirements equipment	• Mouse (Those supported by the above operating systems)
	  Required.
	• DVD drive
	  Use during installation.
	• LAN port
	  Required for LAN connections.

*1   PS/PE-4000 or SP5000 Series Open Box only.

*2   Free space required for installation.

1.3 Difference between GP-Viewer EX and Display Units

Features available in GP-Viewer EX are different than those used with the display unit.

Device

- When writing to the following addresses in GP-Viewer EX, the value is written to GP-Viewer EX's #H_ChangeScreenNo system variable, regardless of the screen mode.
  - [#INTERNAL]LS0008 (Direct Access Method)
  - [#MEMLINK]0015 (Memory Link Method)
  - System Data Area's [Change-To Screen] address
- In synchronous mode, GP-Viewer EX writes to and reads from the display unit address. However, writes to and reads from GP-Viewer EX addresses for system variables and clock data.
- In asynchronous mode, GP-Viewer EX writes to and reads from GP-Viewer EX addresses. However, writes to and reads from the display unit for the following addresses.
  - In the [System Settings] window's [Device/PLC] page, when Indirect Devices are set up, internal device addresses (LS area/USR area) other than the [Device ID Address]
  - Device/PLC addresses other than the System Data Area's [Change-To Screen] address

Features differences from Diplay Unit

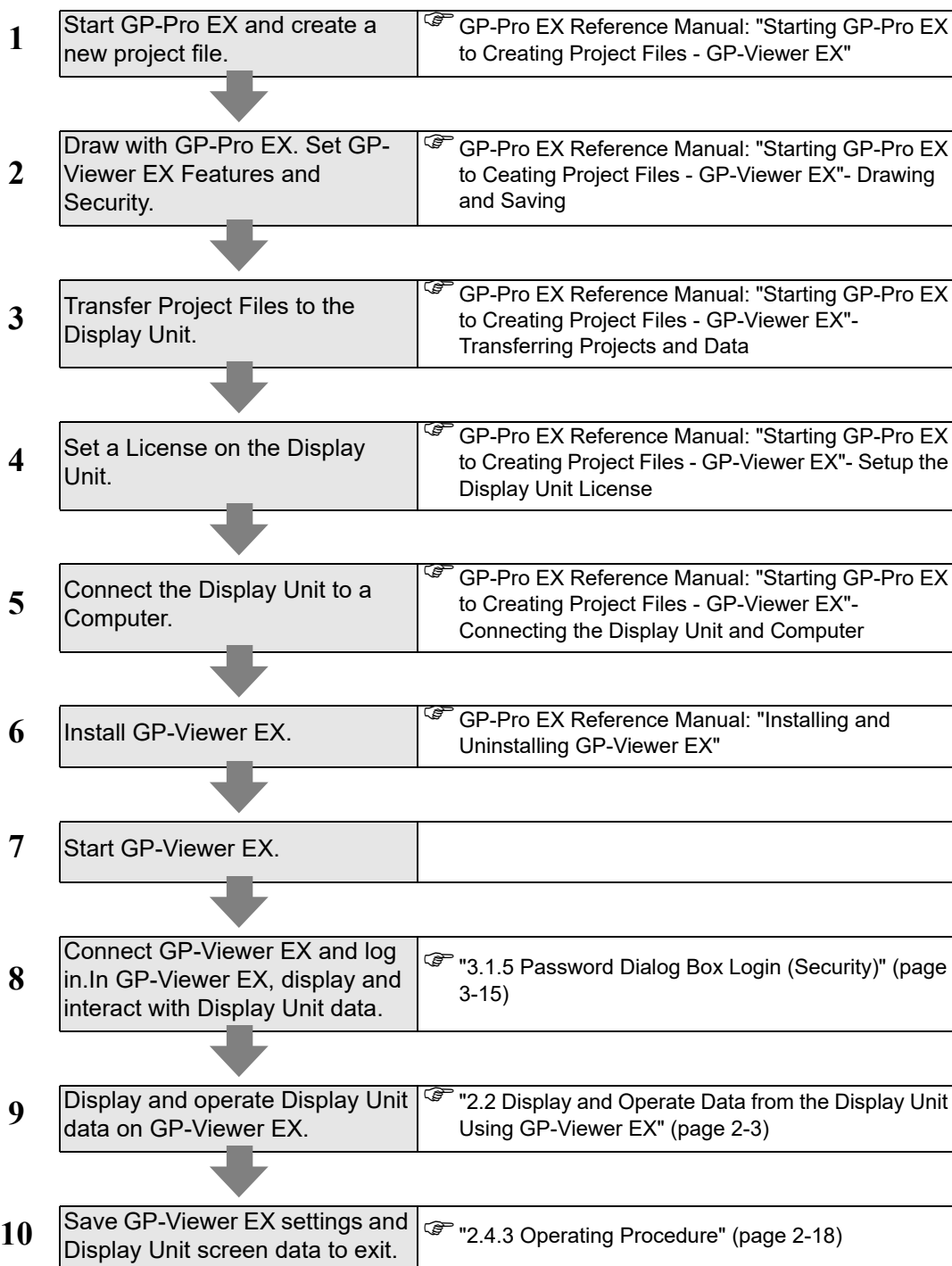| Feature	Details
Switches	• AUX Output cannot be used. • Special switches related to security, resetting, offline or other unsupported features cannot be used. • If switches overlap, or multiple switch functions are set up, operations may differ from the display unit.
Sampling Data Display	• You cannot edit data. • First gets all sampling information, and then updates at the frequency specified in GP-Viewer EX. From the [Tool] menu click [Settings] and note the [Update Cycle] field. • Refine Search/Sort is available, but it does not synchronize with the display unit.

Feature	Details
Alarm feature	• The Sub Display feature may be executed at an unexpected time by operation on the display unit even when the Alarm part is not displayed. • Alarm information cannot be cleared by external operation. • Display content may be displayed differently than the display unit (time information, active alarm status, and so on). Touching the [Screen Update] button will update the contents by re-acquiring the alarm information. • You cannot save alarm information. • You cannot perform [Acknowledged] or [Clear] operation. • You cannot perform [Alarm Number Acquisition] operation. • If alarm analysis is used, the analysis list is not shown on the operation log. • Refine Search/Sort is available, but it does not synchronize with the display unit.
Logic Programming Global D-Script Extended Script	• You can review the results processed on the display unit, but the results of drawing are not reflected.
D-Script	• This feature is enabled in Synchronous Mode. However, drawing results are not reflected. This feature may be executed even in Asynchronous Mode when the same screen is displayed.
Trigger Action	• This feature is executed in Asynchronous Mode when the same screen is displayed. In this case, changing screens on the display unit does not change screens in GP-Viewer EX. Therefore, execution of [Start Application] or [Exit WinGP] cannot be confirmed by GP-Viewer EX, so do not perform such operations from GP-Viewer EX. • This feature is enabled in Synchronous Mode. However, the results of drawing are not reflected.
Screen Capture	• The screen of the display unit cannot be captured with Screen Capture Settings. This should be performed from [Screen Capture] in the [Tools] menu.
Error	• Displays errors on both the display unit and GP-Viewer EX. • All errors are acquired at first and then the information is updated at the frequency specified in GP-Viewer EX. Click [Change setting] and select [Information of Automatic update frequency]. • Errors that are restored will not disappear. Such errors disappear only when the screen is changed.
Data Display	• In Numeric Display or Text Display, when [Device Type Address] is specified for Address Type and a device (PLC) is used for Monitor Word Address, an error occurs.
Historical Trend Graph	• You cannot review Cursor Information Storage Address, Status Address and Search Status of the Viewer.

Feature	Details
Data Block Display Graph	• In Asynchronous Mode, select [Block Display Graph] from the [Update (U)] menu to clear or redisplay the graph. Follow the same procedure when update does not happen in Synchronous Mode.
XY Historical Scatter Graph	• Immediately after changing screens, all the data in the buffer is displayed on a graph, including the previously sampled data.
XY Block Display Scatter Graph XY Historical Scatter Graph Normalization	• When quickly changing the control word using D-Script or a PLC with ladder logic on the display unit, server operations may not be detected. • In Asynchronous Mode, when updating the graph, its Display Completion bit does not turn ON. Therefore, the control word cannot be returned to 0 on the display unit. Prior to updating, create a switch that returns the control word to 0.
Bulletin Message	• When you perform a display/hide operation continuously, display contents may not be synchronized with the display unit. • In order to update the message, clear the message and display it again. • Display Completion bit cannot be used.
Recipe feature	• The Recipe feature does not work. Special Data Displays (Data Transmission, Filing and Show CSV) is not displayed.
File Manager	• Status Address and Select Movie cannot be set. • Files in the GP-Viewer EX computer are displayed.
Internal Devices (LS Area, Memory Link)	• You cannot write data in the Special Relay Area (LS2071 to LS2074, LS2078 to LS2095) from the Viewer. • Write operation into Special Relay Area and Extend System Area is not supported.
Security feature	• To change or clear the security level, from the Menu, point to Feature, and select "Change Security Level" or "Change User ID". You can set the security level to 0 if you leave the user ID/password field blank and press the OK button. (This cannot be completed when the security is set for reading Viewer data.)
Operation Log	• An operation log file is not saved.
Web Server and FTP Features	• Web Server and FTP Features do not work.
RPA Function	• RPA feature cannot be used.
Printing feature	• The printing feature does not work.
Transfer Project File	• Project files cannot be transferred.
Monitor Features	• Device Monitor, Address Monitor, Ladder Monitor and Logic Monitor cannot be used.
2-color Backlight Switching	• 2-color Backlight Switching cannot be used.

Feature	Details
Function Keys	• Hand-held GP function keys will not operate.
Playing Movies	• You cannot record or play movies. • The Movie Player and the Image Unit Display will not display. • Image Sensor Display will not show video images.
Japanese FEP (Help)	• Dictionary information registered on the display unit cannot be used.
EZ Tower Light	• For system variables that begin with #H_Signal***, when performing read/write, EZ Tower Light operations and status confirmations cannot be made.
Others	• The status address of each part/function, search status address, and cursor information storage address information cannot be obtained. • Even if [Reverse Display] is enabled in System Settings [Display Unit]-[Display Settings], reverse display is not possible. • The screen does not change to standby mode.The display unit will enter standby mode, but the screen will not change so long as the viewer is connected. • You cannot adjust the brightness and contrast. • Cannot change to offline mode. • A bar code reader cannot be connected. • Cannot connect a modem. • You cannot check tag consistency. • Does not support Pro-Server EX's node search. • The time displayed on GP-Viewer EX is based on the time settings of your computer.

1.4　Development Process

The following describes the procedural flow of starting GP-Pro EX, creating a new screen, displaying screen data from a display unit on a computer, installing GP-Viewer EX for operation and operating GP-Viewer EX.

1	Start GP-Pro EX and create a new project file.	☞ GP-Pro EX Reference Manual: "Starting GP-Pro EX to Creating Project Files - GP-Viewer EX"
2	Draw with GP-Pro EX. Set GP-Viewer EX Features and Security.	☞ GP-Pro EX Reference Manual: "Starting GP-Pro EX to Ceating Project Files - GP-Viewer EX"- Drawing and Saving
3	Transfer Project Files to the Display Unit.	☞ GP-Pro EX Reference Manual: "Starting GP-Pro EX to Creating Project Files - GP-Viewer EX"- Transferring Projects and Data
4	Set a License on the Display Unit.	☞ GP-Pro EX Reference Manual: "Starting GP-Pro EX to Creating Project Files - GP-Viewer EX"- Setup the Display Unit License
5	Connect the Display Unit to a Computer.	☞ GP-Pro EX Reference Manual: "Starting GP-Pro EX to Creating Project Files - GP-Viewer EX"- Connecting the Display Unit and Computer
6	Install GP-Viewer EX.	☞ GP-Pro EX Reference Manual: "Installing and Uninstalling GP-Viewer EX"
7	Start GP-Viewer EX.	
8	Connect GP-Viewer EX and log in.In GP-Viewer EX, display and interact with Display Unit data.	☞ "3.1.5 Password Dialog Box Login (Security)" (page 3-15)
9	Display and operate Display Unit data on GP-Viewer EX.	☞ "2.2 Display and Operate Data from the Display Unit Using GP-Viewer EX" (page 2-3)
10	Save GP-Viewer EX settings and Display Unit screen data to exit.	☞ "2.4.3 Operating Procedure" (page 2-18)

2 | Learning GP-Viewer EX

2.1   Settings Menu

Only certain models can use the features introduced in this chapter. Check whether your model supports the features before changing any settings.
☞   GP-Pro EX Reference Manual, "Supported Features"

Display and Operate Data on the Display Unit Using GP-Viewer EX

Display the Screen of a Display Unit

LAN

Operate the Screen of a Display Unit

LAN

☞ Display procedure(page 2-4)
☞ Details(page 2-3)

Change Settings on GP-Viewer EX

LAN

☞ Changing the display position when starting GP-Viewer EX(page 2-10)
☞ Details(page 2-9)

Restricting Users Who Can Display/Operate GP-Viewer (Security)

Enter a password

☞ Display procedure(page 2-14)
☞ Details(page 2-13)

2.2 Display and Operate Data from the Display Unit Using GP-Viewer EX

2.2.1 Details

You can connect the display unit as a server to a computer by LAN, show and operate data from the display unit on a computer using GP-Viewer EX, and check the contents of the display.

Display the Screen of a Display Unit

LAN

Operate the Screen of a Display Unit

LAN
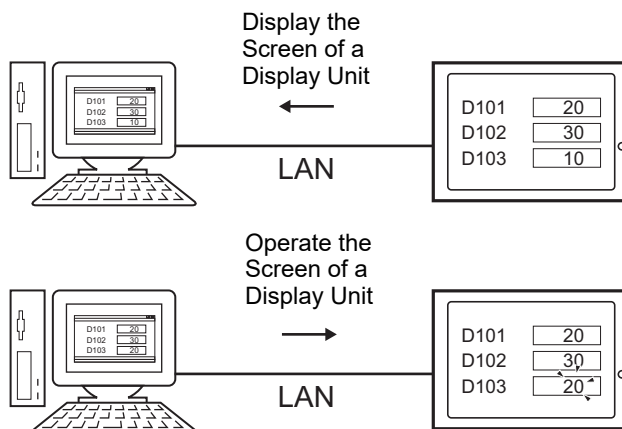
NOTE	• Please refer to the Settings Guide for details. ☞ "3.1.1 Parts Name of Main Screen" (page 3-2) • To display and operate data of the display unit on GP-Viewer EX, you need to set project files on GP-Pro EX. For a detailed procedure, refer to the following. ☞ GP-Pro EX Reference Manual: "Display and Operate Data on the Display Unit Using GP-Viewer EX "

2.2.2　Display Procedure

1 From the [Start] menu, point to [All Programs], [Pro-face], [GP-Viewer EX] and then click [GP-Viewer EX].

2 GP-Viewer EX starts. [Server (Display Unit) connecting to] area's [IP Address] field, set the IP address of the display unit to connect.
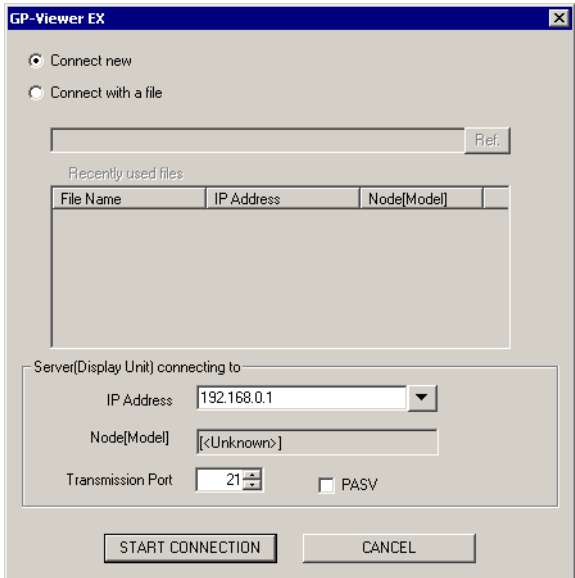
NOTE	• Before you set the IP address, contact your network administrator. • ☑ Click to search for display units you can connect. • The display unit can be set with a domain name. When using the IPC series, you can also enter a computer name. Names can be up to 500 single-byte characters long.

3 [START CONNECTION] shows the following screen when the display unit is set up with a connection key. If during set up of the connection key you clear the [Authenticate connection key when transferring] check box in the [Connection key settings] dialog box, proceed to the next step.

NOTE	• If you enter an invalid password, it will return to the server connection screen. • Click the icon [◉] to show the password.

4 When the display unit is set up with a password for sending and receiving, the following screen appears. If a password for sending and receiving has not been set, proceed to the next step.

NOTE • If you enter an invalid password, the prompt screen appears. If you enter an invalid password more than three times, the screen returns to the server connection screen.

5 The screen of the display unit appears on GP-Viewer EX.
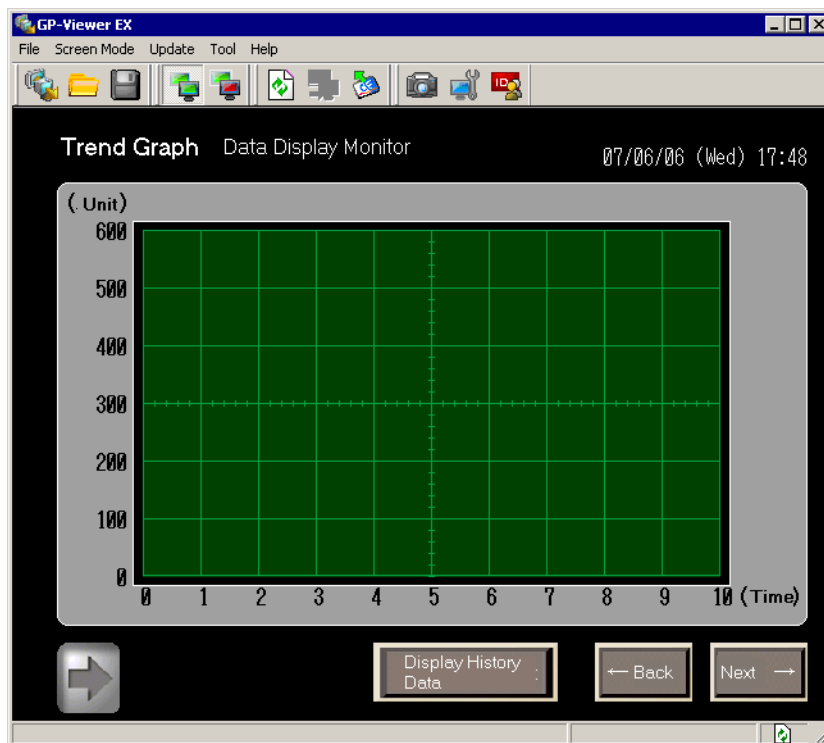
NOTE	• If a security level is set on the display screen, you must enter the password for the security level.

☞ "2.4 Restricting users who can display/operate GP-Viewer (Security)" (page 2-13)
- For details regarding security level, synchronization, and asynchronization when starting GP-Viewer EX, refer to the following.

☞ GP-Pro EX Reference Manual, "On GP-Viewer EX Startup".
- When multiple GP-Viewers are connected, it is possible to disable touch operations in GP-Viewer when starting operations from another viewer. For more details, refer to the following.

☞ GP-Pro EX Reference Manual, "Preventing Operations from Other Display Units (Ethernet Multilink)".

2.2.3 Operating Procedure

1 Run operations on the same screen as the display unit and change the value of the device address. The change result also appears on the display unit.
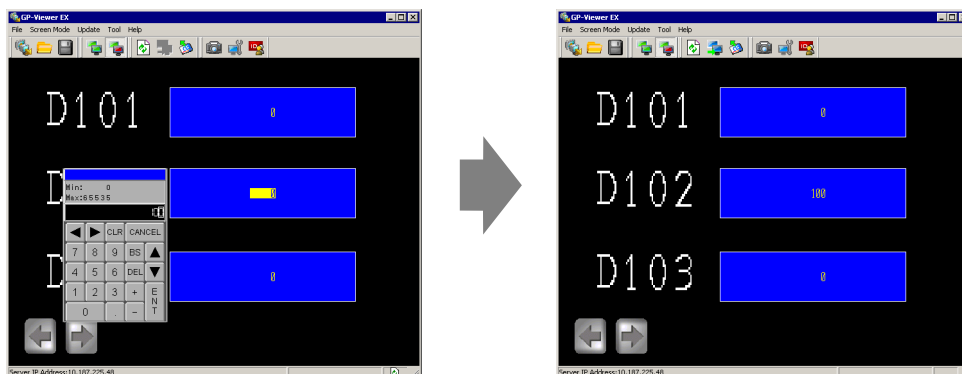
NOTE
• If the display unit changes to offline mode while you view the display unit screen, GP-Viewer EX will be disconnected. The connection must be re-established after the display unit returns online.

2 You can switch display screens after you right-click [Server screen] on GP-Viewer EX.
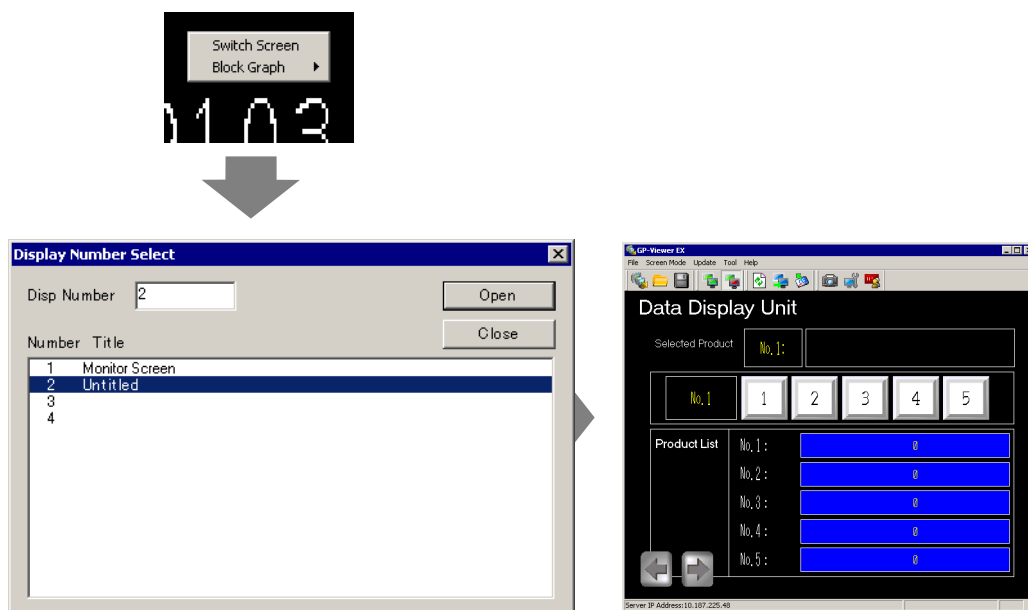
NOTE
• To change display screens, you must log in with a security level of 15 or higher.
• When the display unit is set up to prevent screen changes, you cannot change screens from GP-Viewer EX.

3 [File (F)] menu's [Save as (S)] command displays the [Save As] dialog box.[Location to save (I)] and [File name (N)] should be defined, and then click [Save (S)]. (Example: test.GPVE).
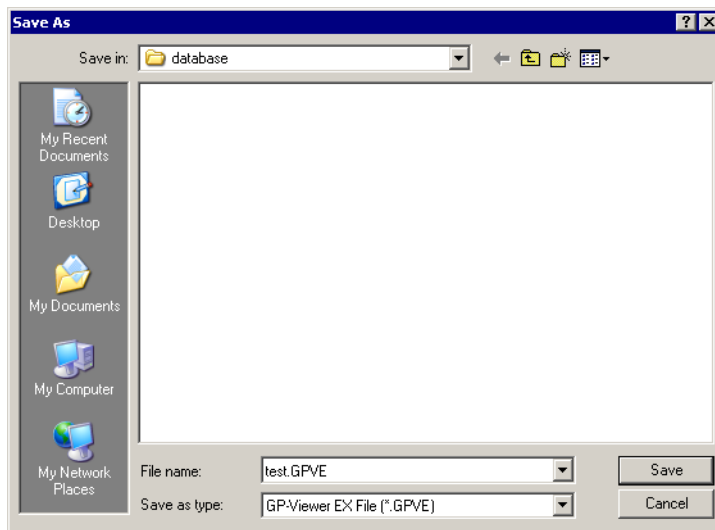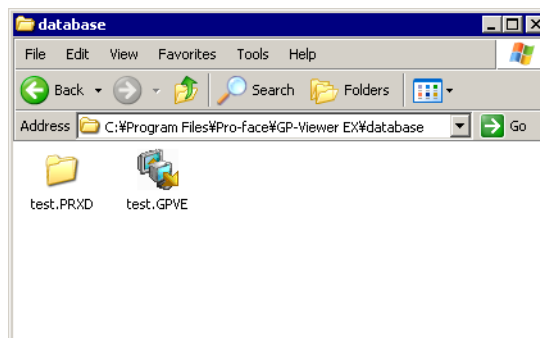
4 [File (F)] menu's [Exit (X)] command exits GP-Viewer EX.

NOTE
• Enter up to 200 single-byte characters for the location of the setup files.
• When there are changes in the setup file, a save prompt appears.

5 The "test.GPVE" file and "test.PRXD" folder are saved to the destination.

6 To start using the same condition again, double-click the setup file (∗∗∗.GPVE) to start the server connection.

NOTE
• As another option, from the [File menu (F)] select [Open setup file (O)] to display the server connection screen dialog box. In [Connect using existing file], select the saved file.
• If the location for saving the setup file exceeds 200 single-byte characters, an error message appears and the setup file cannot be opened. Move the setup file to a path that contains 200 characters or less.
• When you [Save] a new file or change a save location for project file information using [Save as], a message appears and the screen display is reset and saved. The display of the Data Block Display Graph is cleared. The sub-display of alarm history may change how it displays.

# 2.3 Changing settings on GP-Viewer EX

2.3.1 Details

Set the frequency to specify the display position when starting GP-Viewer EX; change the CPU capacity of the computer occupied by GP-Viewer EX, or to regularly track changes in errors and sampling data from the display unit using GP-Viewer EX.

Changing the window position or size

Setting the automatic update frequency

30 minutes

LAN
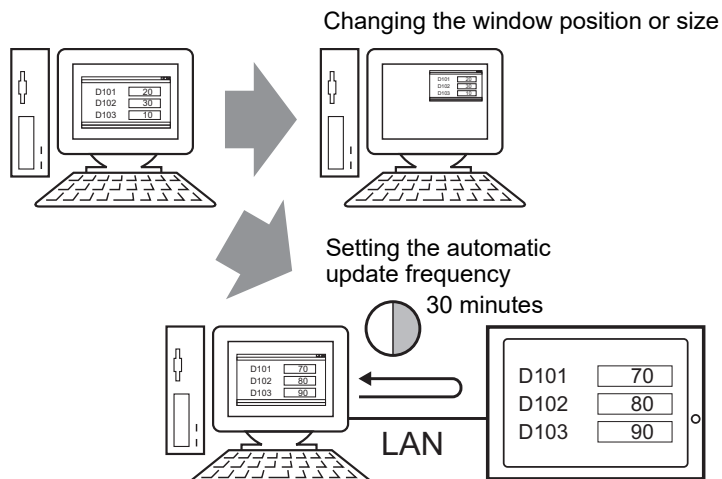
2.3.2 Changing the display position when starting GP-Viewer EX

Set the display position of GP-Viewer EX.

1 [Feature (T)] menu's [Change settings (S)] command displays the [Viewer Settings] dialog box.
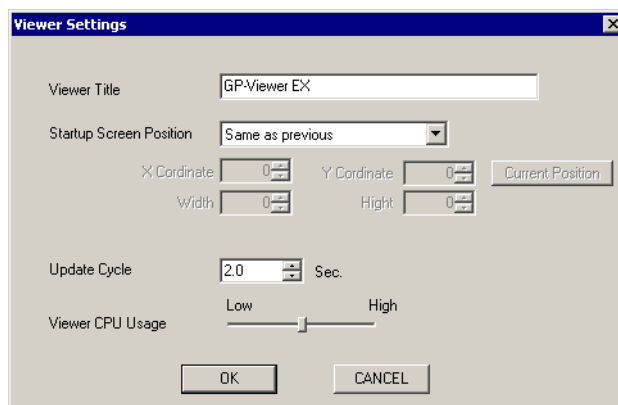
2 [Startup Screen Position] list has includes the [Specified location] option. Use this option to specify the size in the [X Coordinate], [Y Coordinate], [Width], and [Height] fields.

| NOTE | • [Current Position] button enables you to see the current window display position. |

3 The window displays with the set size after restarting GP-Viewer EX.

2.3.3 Adjusting CPU utilization of GP-Viewer EX

The following procedure adjusts the CPU utilization of the computer occupied by GP-Viewer EX. When you want to start and use GP-Viewer EX and other software, or change information from the display unit in a short time, you can adjust the CPU utilization.

1 [Feature (T)] menu's [Change settings (S)] command displays the [Viewer Settings] dialog box.
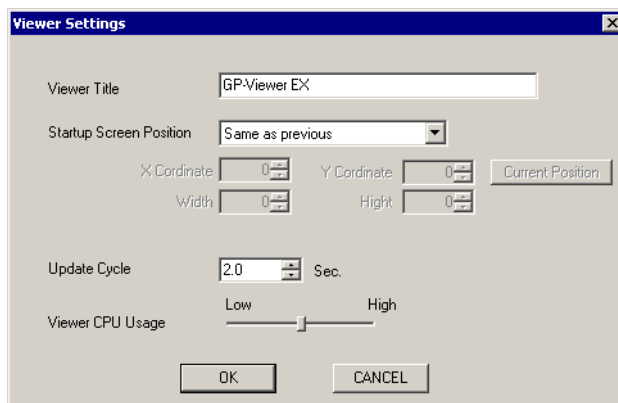

2 [Viewer CPU Usage] controls the CPU usage level.

NOTE • Note: Lowering CPU utilization reduces the load on the computer; however, this may not be made apparent due to display screen updates.

2.3.4   Changing the information update frequency of GP-Viewer EX

The following procedure specifies how frequently information is collected to track changes, such as new errors and sampling data, from the GP-Viewer EX to the display unit. Lowering the update frequency can improve the speed of operations when action on the display unit slows down.

1 [Feature (T)] menu's [Change settings (S)] command displays the [Viewer Settings] dialog box.
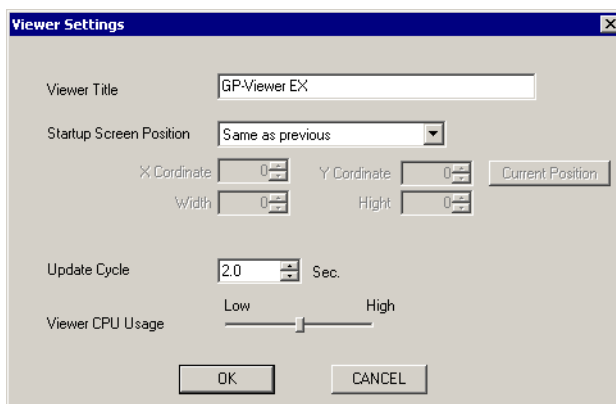
2 [Update Cycle] can be adjusted in increments of 0.1 seconds. (Example: 10 seconds).

2.4 Restricting users who can display/operate GP-Viewer (Security)

2.4.1 Details

The following procedure adjusts the security levels on GP-Viewer EX to determine which users can display and operate data on the display unit. Here, the security level switches between level 15, which is for maintenance staff and has a password ("5555"), and level 1, which is for status monitoring staff and also has a password ("1111"). There are two methods for setting security: level mode setup and user ID mode setup.
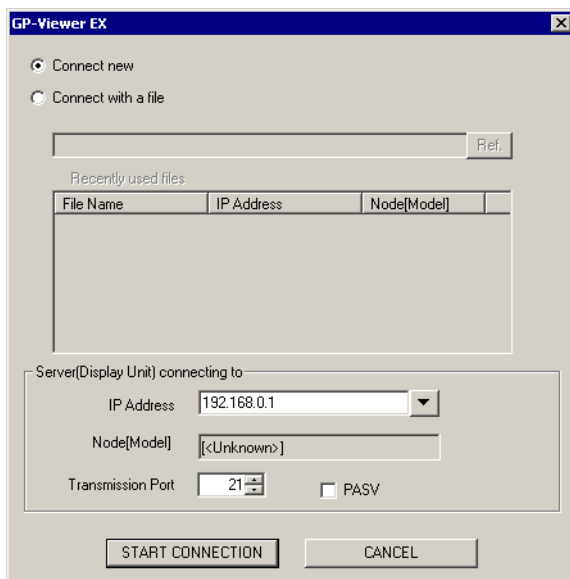

Enter a password

D101	20	
D102	30	
D103	20	
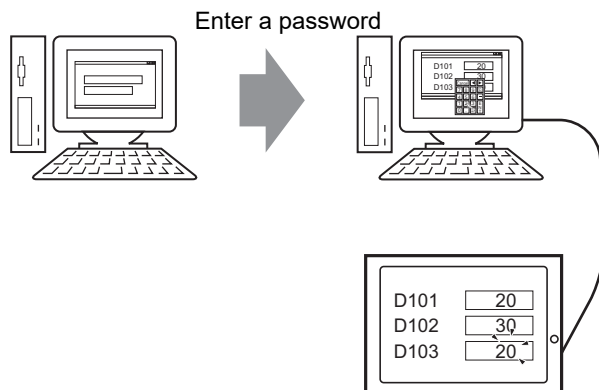
NOTE	• Please refer to the Settings Guide for details.

☞ "3.1 GP-Viewer EX Settings Guide" (page 3-2)

• To limit which users can display and operate on GP-Viewer EX, you must transfer project files that have had their security set in GP-Pro EX to the display unit. For a detailed procedure, refer to the following.

☞ GP-Pro EX Reference Manual, "Restricting Access to GP-Viewer EX (Security)"
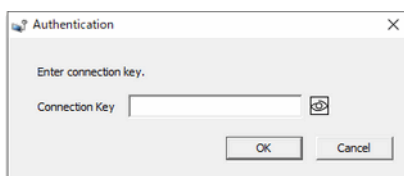

2.4.2 Display procedure

1 From the [Start] menu, point to [All Programs], [Pro-face], [GP-Viewer EX] and then click [GP-Viewer EX].

2 GP-Viewer EX starts. [Server (Display Unit) connecting to] area's [IP Address] field, set the IP address of the display unit to connect.

NOTE
- Before you set the IP address, contact your network administrator.
- [icon] Click to search for display units you can connect.
- The display unit can be set with a domain name. When using the IPC series, you can also enter a computer name. Names can be up to 500 single-byte characters long.
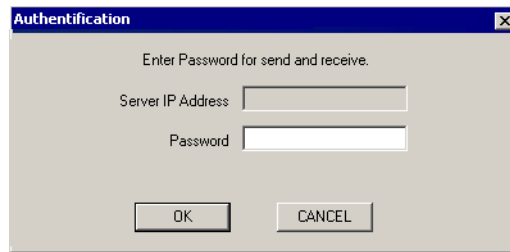
3 [START CONNECTION] shows the following screen when the display unit is set up with a connection key. If during set up of the connection key you clear the [Authenticate connection key when transferring] check box in the [Connection key settings] dialog box, proceed to the next step.

NOTE
- If you enter an invalid password, it will return to the server connection screen.
- Click the icon [👁] to show the password.

4 When the display unit is set up with a password for sending and receiving, the following screen appears. If a password for sending and receiving has not been set, proceed to the next step.

| NOTE | • If you enter an invalid password, the prompt screen appears. If you enter an invalid password more than three times, the screen returns to the server connection screen. |

5 The following input dialog box appears showing the security level of the screen. Enter a password up to 8 single-byte characters long. (For example, when security level 1 is set to [Read GP-Viewer data], enter the default password "1111".)
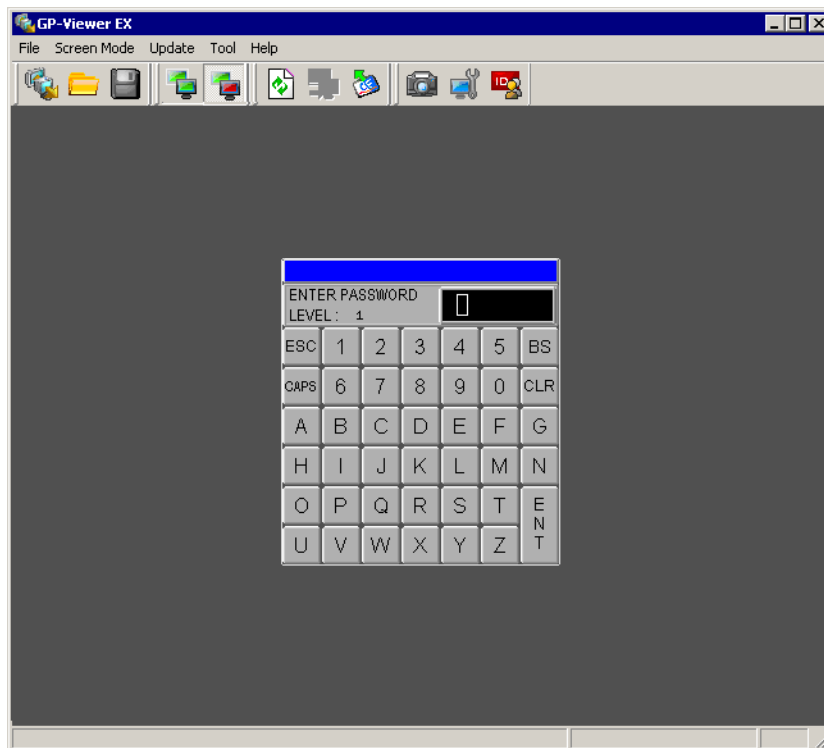

NOTE	• If a user ID is set rather than a security level, enter the user ID.

   For setup procedures, please refer to the following:

   ☞ GP-Pro EX Reference Manual, "Procedure - Restricting Access to GP-Viewer EX (Security) User ID Mode"

   • For details regarding security level, synchronization, and asynchronization when starting GP-Viewer EX, refer to the following.

   ☞ GP-Pro EX Reference Manual, "Viewing and Operating Display Unit Data and Video Images from GP-Viewer EX, Web Server, and Camera-Viewer EX".

6 This displays the screen of the display unit.

NOTE • If the display unit changes to offline mode while you view the display unit screen, GP-Viewer EX will be disconnected. The connection must be re-established after the display unit returns online.
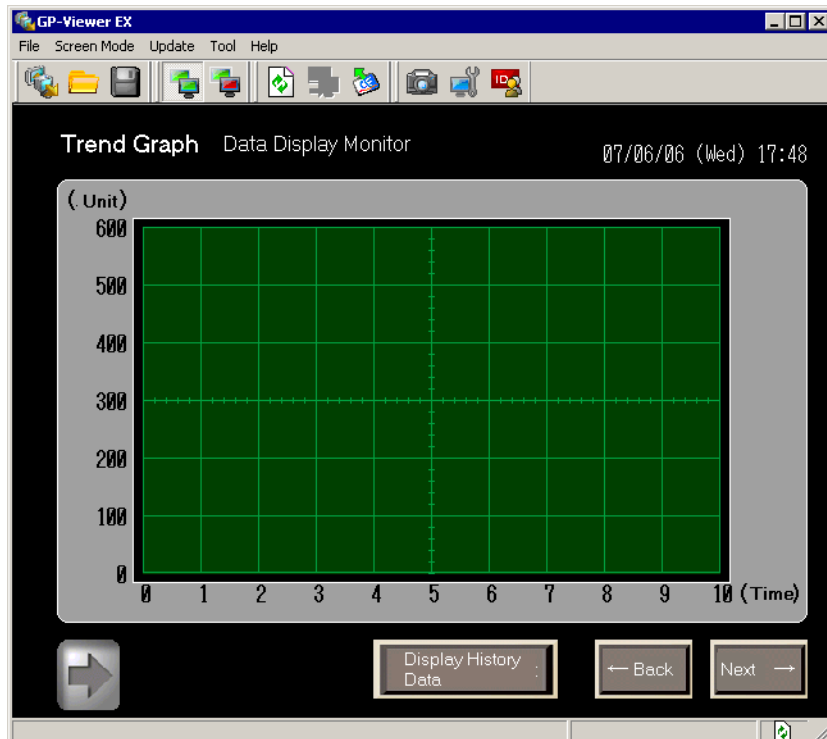
2.4.3　Operating Procedure

1 [Feature (T)] menu's [Change security level (L)] command displays the following dialog box. In the [Change Security Level] dialog box, enter the password for security level maintenance. (Example, Security level for maintenance: 15, Password: 5555)
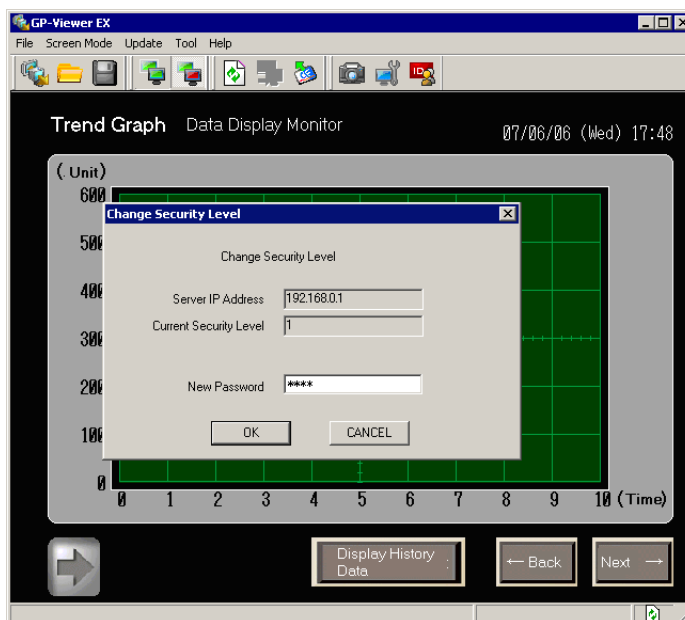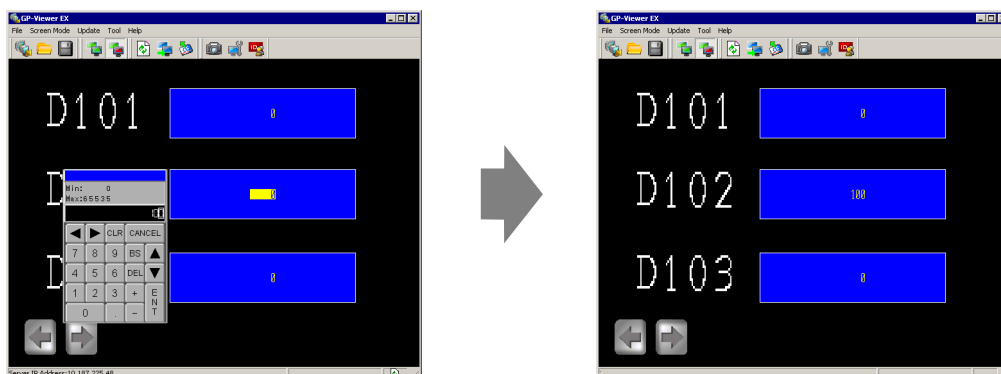

| NOTE | • For details regarding security level, synchronization, and asynchronization when switching screens, please refer to the following. |

☞ GP-Pro EX Reference Manual, "When Changing Screens".

2 [Server screen] area, right-click and select [Switch screens] to display the [Display Number Select] dialog box. Select the screen to display then click [Open]. Example: [Maintenance screen]
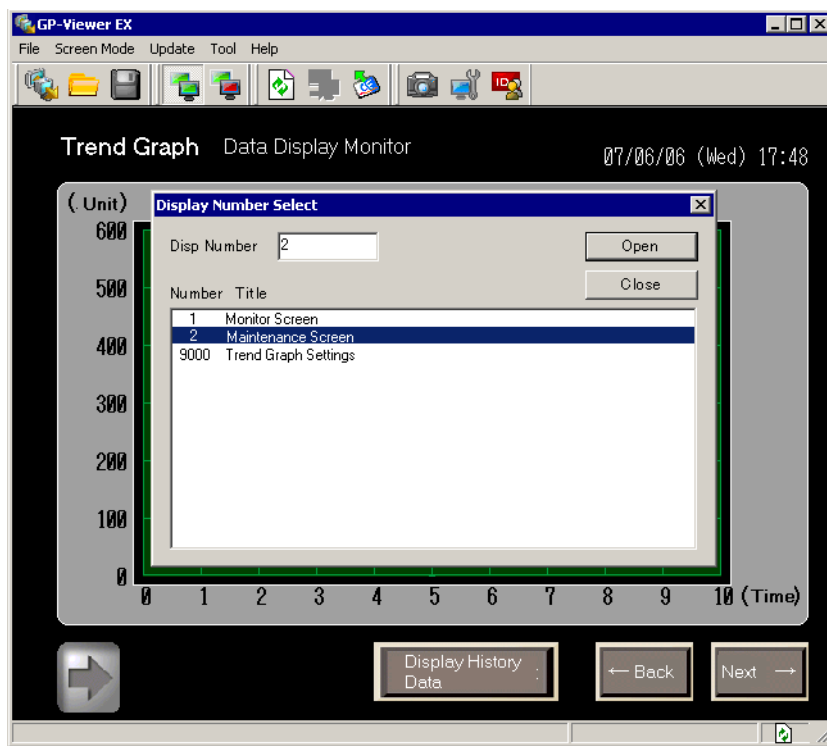
| NOTE	• To change display screens, you must log in with a security level of 15 or higher.
	• You can change security levels by using the [Feature (T)] menu's [Change Security Level (L)] command.

3 This operates the screen that displays on the switch destination and changes the value of the device address. The change result also appears on the display unit.
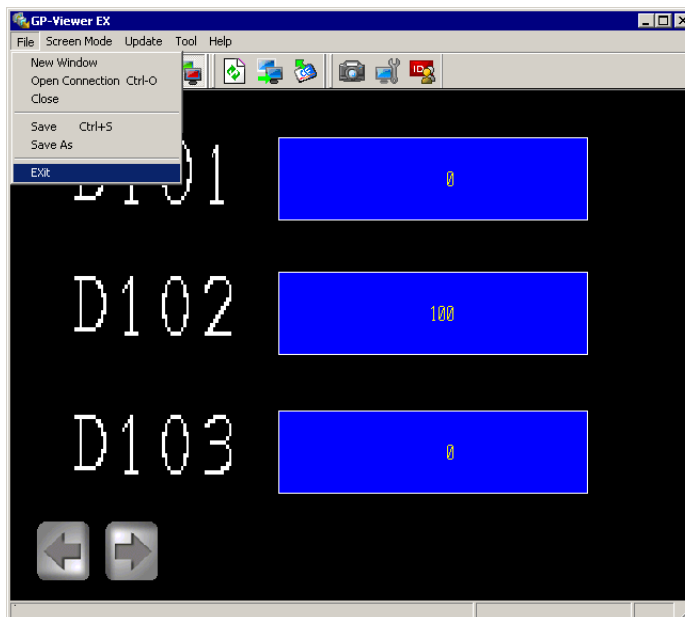

NOTE

- If the display unit changes to offline mode while you view the display unit screen, GP-Viewer EX will be disconnected. The connection must be re-established after the display unit returns online.
- For details regarding security level, synchronization, and asynchronization when operating the screen of GP-Viewer EX, please refer to the following.

☞ GP-Pro EX Reference Manual, 37.6.4 "When Running Screen Operations".

4 [File (F)] menu's [Save as (S)] command displays the [Save As] dialog box. Specify the [Save in] folder and [File Name] then click [Save].
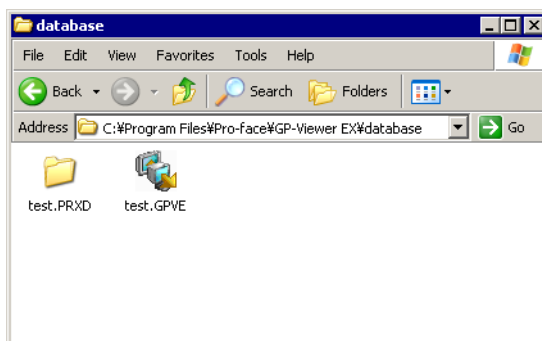(Example: test.GPVE)
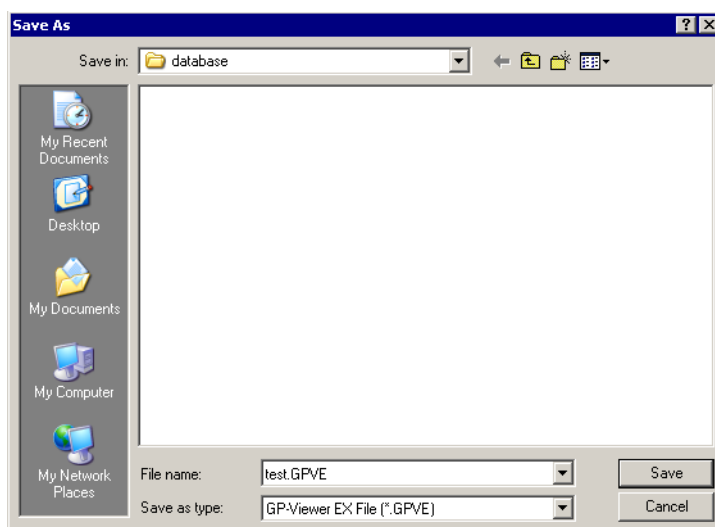
5 [File (F)] menu's [Exit (X)] command exits GP-Viewer EX.

NOTE • When there are changes in the setup file, a save prompt appears.

6 In the destination, a "test.GPVE" file and a "test.PRXD" folder are saved.

7 To start using the same condition again, double-click the setup file (∗∗∗.GPVE) to start the server connection.

NOTE • As another option, from the [File menu (F)], select [Open setup file (O)] to display the server connection screen dialog box. From [Connect using existing file], select the saved file.
• For details regarding screen mode, synchronization, and asynchronization when starting GP-Viewer EX, please refer to the following:
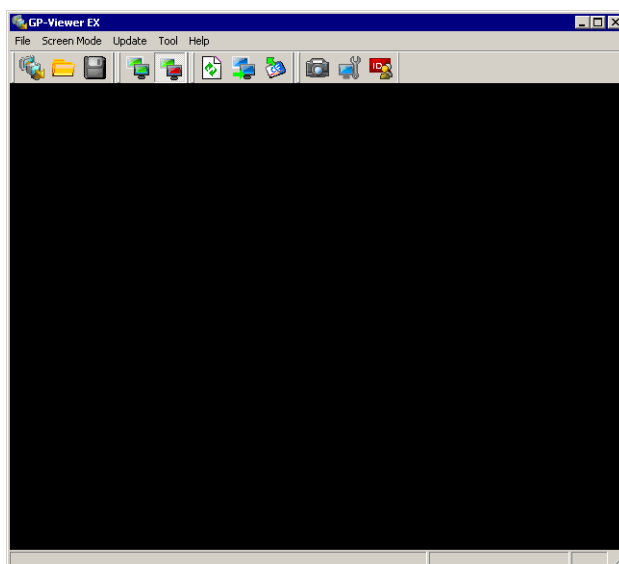☞ GP-Pro EX Reference Manual, "On GP-Viewer EX Startup".

3　Settings Guide

3.1 GP-Viewer EX Settings Guide
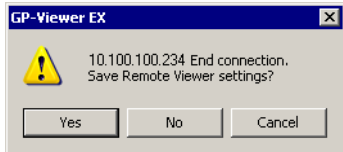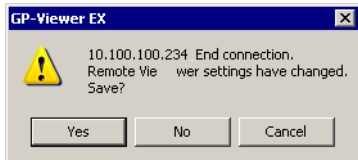
3.1.1 Parts Name of Main Screen
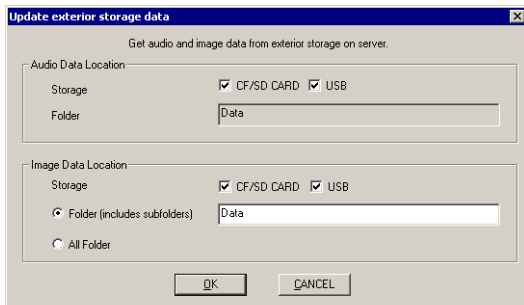
Setting			Description
Title Bar			Displays the Window Title of GP-Viewer EX.[From the [Tool (T)] menu, click [Change settings] and enter a title up to 63 characters in [Title of GP-Viewer EX] of [Window Settings].
Tool Bar			Commands such as Screen mode switch, Update, and Feature are represented by icons. Click the icons to perform each operation.
	[File (F)] menu	New Connection (N) (Start new)	A [Server connection screen] displays when GP-Viewer EX is first started. If already started, a new window appears. **NOTE** • You can open a maximum of three new windows.
		Open setup file (O) (Connect to another server)	[Use existing file] option in the server connection screen is the same state as when this command is run and opens a dialog box. If you are already connected to a display unit, this command does the same thing as the [Close (C)] command.

Continued

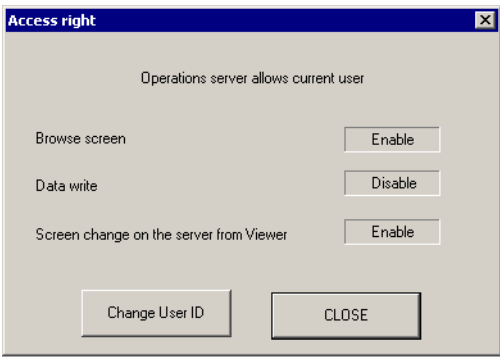| Setting			Description
Tool Bar	[File (F)]	Close (C)	If there are any changes in the settings of GP-Viewer EX, a save prompt message appears. You can close GP-Viewer EX after you save the settings. New file Existing file
		Save (S)	Saves the file over the existing setup file (∗.GPVE).
		Save As (A)	Saves the setup file by specifying a location for saving. **NOTE** • Although the password for sending/receiving project is saved in the setup file, the user name and password entered in the security settings is not saved. • The screen mode is also saved in the setup file.
		Exit (X)	When the setup file is opened, runs the [Close (C)] operation to close the setup file, and then closes GP-Viewer EX.
	Screen Mode (M)	Synchronous Mode (S)	Switches from screen asynchronous mode to screen synchronous mode.
		Asynchronous Mode (A)	GP-Viewer EX can display a different screen from the display unit without being affected by screen switch. **NOTE** • For details on the screen synchronous and asynchronous mode, please refer to the following: ☞ GP-Pro EX Reference Manual: "Using Synchronous and Asynchronous modes with GP-Viewer EX"

Continued

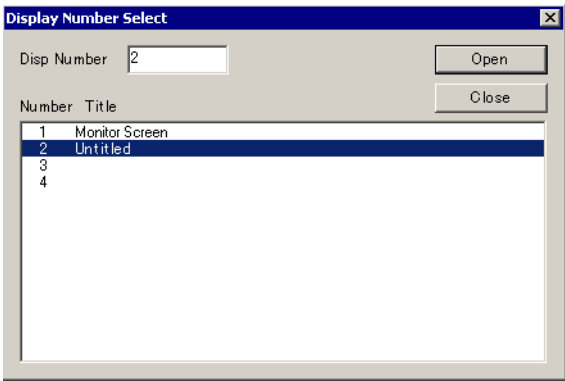| Setting				Description
Tool Bar	[Update (U)]		Screen Update (U)	Obtains alarm information from the display and then uses that information to initialize the alarm that displays on the GP-Viewer EX screen. Also obtains sampling data and errors shown on the display unit and updates the Block Display Graph.
			Switch to the Server display screen (S)	If the information update frequency takes a long time with asynchronization screen, the screen of the GP-Viewer EX switches to the screen of the display unit.
			Update exterior storage data (D)	Obtains image files and sound data that's different from the information which exists in the external memory of the display unit.
		Audio data Location	Storage	Select the target storage from [CF/SD CARD] or [USB] where the sound data to be updated will be saved.
			Folder	Displays the path of folders where the sound data to be updated will be saved.
		Image Data Location	Storage	Select the target storage from [CF/SD CARD] or [USB], where the image data will be saved.
			Folder (includes subfolders)	Enter a folder path up to 80 single-byte characters long where the image data will be saved.
			All Folders	Update all data in the target storage where the image data will be saved.
		Block Display Graph (B)	Display	This is used when the display change notice is not detected on GP-Viewer EX.
			Clear	This is used when the clear change notice is not detected on GP-Viewer EX.
			Clear and Display	This is used when the clear and re-display notices are not detected on GP-Viewer EX.

Continued

Setting			Description
Tool Bar	Feature (T)		
		Screen Capture (C)	When you click, it will capture the screen that displays on GP-Viewer EX. The browse application for JPEGs opens and the captured image is displayed.[File (F)] menu's [Save as (A)] command enables you to save the file in JPEG format.
		Access right	
		Browse screen	Indicates whether the screen shown on the display unit is permitted. **NOTE** • If security is not set up, the [Change User ID] button is displayed, but you cannot make any changes.
		Data write	Indicates whether writing of the display unit's device value from GP-Viewer EX is permitted with the current log-in security level.
		Screen change on the server from Viewer	Indicates whether changing screens on the display unit from GP-Viewer EX is allowed with the current log-in security level. **NOTE** • To be able to use the change screen operation, in GP-Pro EX open the [System Settings] window. Click [Display Unit] to display its page, click the [Remote Viewer] tab and select the [Enable Screen Changes from Client] check box. You need to also log in with security level 15. • When [Data Write] is [Disabled], this setting will also be [Disabled]. • Even when [Enable Screen Changes from Client] is set up in GP-Pro EX, in the [Display Unit] page's [Remote Viewer] tab, if [Write GP-Viewer Data] is disabled in security settings, [Change Screen on Server from Viewer] will be [Disabled].

Continued

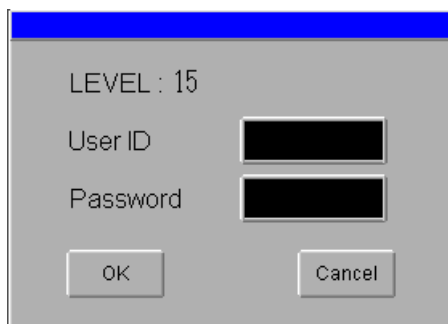| Setting			Description
Tool Bar	Feature (T)	Change User ID	Changes to a different user or security level.
		Close	Closes the [Access Rights] dialog box.
		Change settings (S)	[Change settings] dialog box appears where you can set up the window position, automatic update frequency information, and CPU utilization. **NOTE** • For details on each setting, please refer to the following. ☞ "2.3 Changing settings on GP-Viewer EX" (page 2-9)
		Change User ID (U)/ Change Security Level (U)	Changes the currently logged in security level. If the User ID was set in the security setup, the [Change User ID] dialog box appears. If the security level was set, the [Change Security Level] dialog box appears. **NOTE** • For details on each setting, please refer to the following. ☞ "3.1.5 Password Dialog Box Change User ID" (page 3-16) ☞ "3.1.5 Password Dialog Box Change Security Level" (page 3-16)
Help (H)	Operation Manual (M)		Opens the GP-Viewer EX Operation Manual.
	Online Update (U)		Updates GP-Viewer EX.
	Version Information		Show the GP-Viewer EX version number. Slect to display the [Version Information] dialog box.
		Product Version	Displays the version information of GP-Viewer EX.
		User Name	Displays the user name entered during installation of GP-Viewer EX.
		Company Name	Displays the organization name entered during installation of GP-Viewer EX.
		Obtain version of configuration files	[Save as] dialog box appears to save configuration files.
		OK	Close the dialog box.

Continued

Setting			Description
Server screen			Displays the screens of the connected display unit.
Right-click menu			[Server Screen] right-click menu.[Change screen] command displays the following dialog box, which you can use to change screens on the display unit. **NOTE** • To enable the change screen operation from the right-click menu, the security level must be set up on the display unit and the user must log into GP-Viewer EX with security level 15.
	Screen Change		You can scroll screen areas that cannot display in GP-Viewer EX with a scroll bar.
	Block Display Graph	Display	This is used when the display change notice is not detected on GP-Viewer EX.
		Clear	This is used when the clear change notice is not detected on GP-Viewer EX.
		Clear and Display	This is used when the clear and re-display notices are not detected on GP-Viewer EX.
Scroll Bar			You can scroll screen areas that cannot display in GP-Viewer EX with a scroll bar.
Status Bar			A progress bar displays when you receive screen data.
	Stop button		Stops the connection process.

3.1.2 Screen authentication

When you switch screens, if the security level for the screen in the destination is higher than the log-in security level, the following [Screen authentication] dialog box appears.
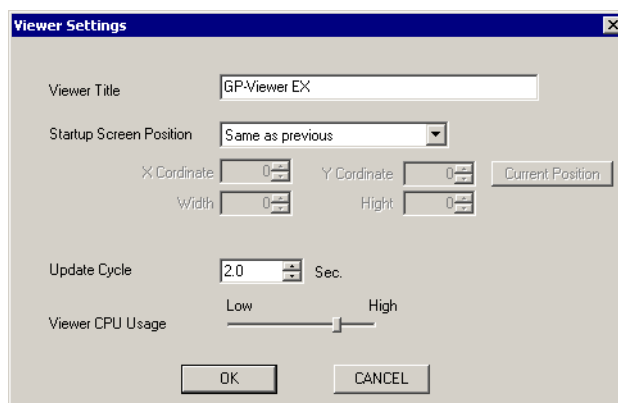
User ID Settings

Setting	Description
LEVEL	Displays the security level of the currently logged in user.
User ID	Enter up to eight single-byte characters to set up the security level user ID for the destination screen.
Password	Enter up to eight single-byte characters to set up the security level password for the destination screen.

Security Settings

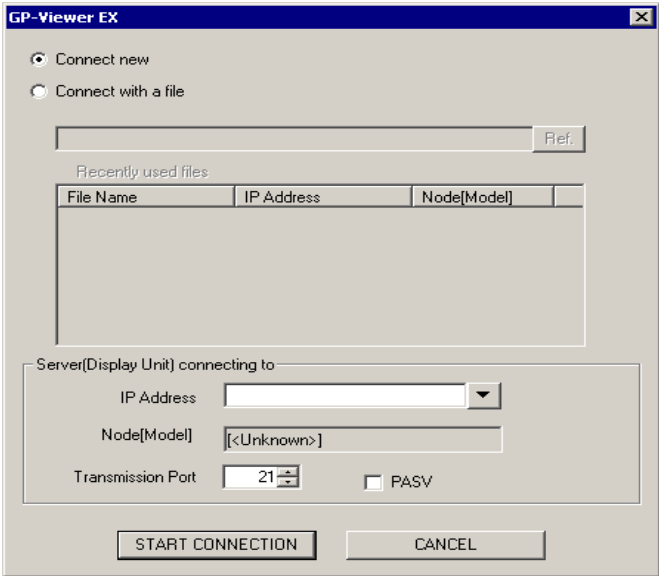| Setting	Description
New Password	Enter up to eight single-byte characters to set up the security level password for the destination screen.

3.1.3 Change settings

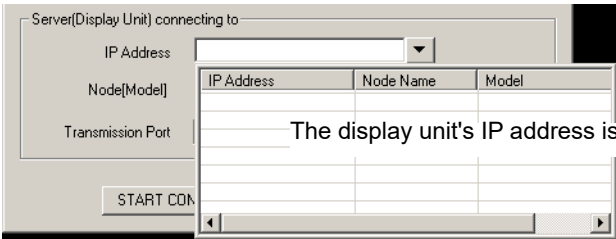| Setting	Description
Viewer Title	Enter up to 63 characters for GP-Viewer EX title.

Startup Screen Position	When starting GP-Viewer EX, select the window position from [Same position as previous exit], [Specified position] and [Center of Desktop].
	• Same position as before closing
	  Displays in the same position as the previous display position of GP-Viewer EX.
	• Specified position
	  Displays in the specified size and in the specified coordinate position.
	• Center of Desktop
	  Displays in the size adjusted to the display screen size in the center of the desktop.
	  For example, if the display screen is VGA (640x480), the horizontal width also includes the window border and the scroll bar (approximately 650).
	  Vertical width includes the title, menu, toolbar and status bar (approximately 530).
	
	NOTE
	• When you create a new file, enter a 600x400 display in the center of the desktop. If disconnected, a display size recommended by the operating system is entered in the center of the desktop.(1024x768) area begets (600x400). When the connection is established, the size is adjusted to the screen size of the connected display unit.

X Coordinate, Y Coordinate	When you select [Specified position] as the [Startup Screen Position], when starting GP-Viewer EX the window position is set based on X and Y coordinates. • X coordinates from 0 to the maximum resolution of the selected model (horizontal) – 1 • Y coordinates from 0 to the maximum resolution of the selected model (vertical) – 1
Width, Height	Specifies the window size width and height. [Set a value from zero to the maximum resolution of the selected model.

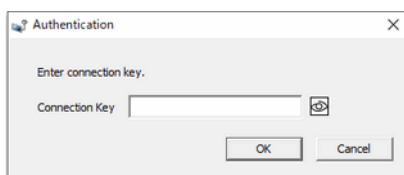| Setting	Description
Current Position	Sets the current GP-Viewer EX position as defined in the [X Coordinate], [Y Coordinate], [Width] and [Height] fields.
Update Cycle	Sets the frequency for checking information updates, such as GP errors and sampling data on GP-Viewer EX, from 1 second to 3600 seconds (1 hour). You can set this in increments of 0.1 seconds. NOTE • When an alarm occurs, information gets updated regardless of set frequency.
Viewer CPU Usage	To ensure GP-Viewer EX does not occupy too much of the computer's CPU, select CPU usage from [Level 1:10%], [Level 2:20%], [Level 3:30%], [Level 4:40%] and [Level 5: No limit].

3.1.4 Server Connection Screen

Setting		Description
Connect new		Connects to the display unit without using information from the previously saved setup file (∗.GPVE).
Connect with a file		Connects to the display unit based on information from the previously saved setup file. **NOTE** • If there is no recently used file, an error message appears and the connection fails.
	Existing file path	Displays the most recently set file path.
	Recently used files	Displays a list of the 10 most recently saved files. When you select the setup file, the save to location is shown under [Existing file path]. If there are more than 10 files, the oldest file is deleted first. If the setup file was not saved, a blank space displays. This area displays the setup file name, IP address of the display unit (computer name or domain name), and node and model name.

Continued

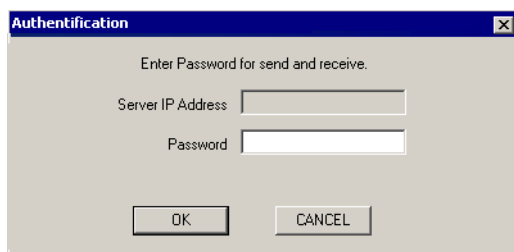| Setting	Description
Server (Display Unit) connecting to	Set the display unit to be connected.
IP Address	Enter the IP address of the display unit to be connected. The display unit can be set with a domain name. When using the IPC series, you can also enter a computer name. Names can be up to 500 single-byte characters long.
Search	Searches for displays that the GP-Viewer can connect to. In the screen that appears after searching, choose the IP address of the display unit you want to connect. Server(Display Unit) connecting to IP Address Node[Model] Transmission Port START CON IP Address Node Name Model The display unit's IP address is
Node (Model)	If a node name is defined on the display unit, that name and the display's model information are shown.
Transmission port	Enter the port, between 1 to 65535, used for transferring data.
PASV	Select when connection problems occur due to network security.

3.1.5 Password Dialog Box

Connection key
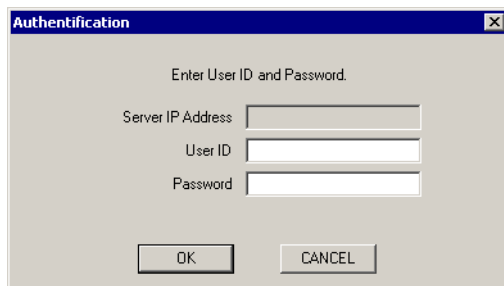
Setting	Description
Password	When the display unit is set with a connection key, enter the connection key. **NOTE** • If you enter an invalid password, the connection is canceled. • Click the icon [👁] to show the password.

Password for Sending/Receiving Project Files

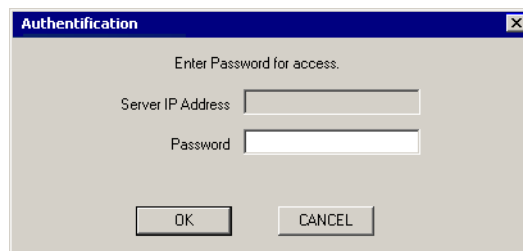| Setting	Description
Server IP Address	Displays the IP address (or machine and domain name) of the display unit that requires a password for sending/receiving project files.
Password	If a password for sending/receiving project files has been set for the display unit, it can contain up to 24 characters. **NOTE** • If an incorrect password is entered three times, the connection is canceled. • When a password is saved in the setup file and connections that follow are made based on the setup file, the saved password is used.

Authentication (User ID)

Setting	Description
Server IP Address	Displays the IP address (or machine and domain name) of the display unit that requires [User ID] and [Password] settings.
User ID	You can add up to eight characters for the user ID when security settings are set up in GP-Pro EX.
Password	Enter up to eight single-byte characters for the user ID password.

Login (Security)

Setting	Description
Server IP Address	Displays the IP address (or machine and domain name) of the display unit to be connected.
Password	Enter up to eight single-byte characters for the GP-Pro EX security password.

Change User ID

Setting	Description
Server IP Address	Displays the IP address of the display unit to be connected.
Current User ID	Displays the [User ID] of the currently logged in user.
Current Security Level	Displays the security level of the currently logged in user.
New User ID	Enter up to eight single-byte characters for the [User ID] security level that you want to switch to.
Password	Enter up to eight characters for the destination's user ID password.

NOTE
• If the browsing feature on GP-Viewer EX is not permitted for the security level of the User ID at the switch destination, you cannot switch to that User.

Change Security Level

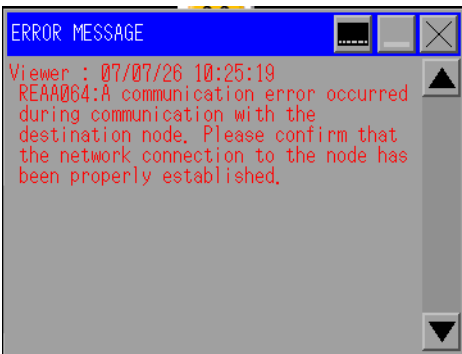| Setting	Description
Server IP Address	Displays the IP address of the display unit to be connected.
Current Security Level	Displays the security level of the currently logged in user.
New Password	Enter a password, up to eight single-byte characters long, for the security level of the screen that you want to switch to.

| NOTE | • If the browsing feature on GP-Viewer EX is not permitted with the access privileges for the security level of the switch destination, you cannot change to this security level. |

Error window

Errors generated on both the display unit and GP-Viewer EX displayed at the same time. Errors display in order of detection. You can set the update frequency of display unit errors in the [Viewer Settings] dialog box's [Update Cycle] and [Performance] fields.

Setting	Description
	Displays the system menu when it is not visible. **NOTE** • To display the system menu, touch or click the top-right corner and then within 0.5 seconds the bottom left, or the top-left corner and then the bottom right. Each corner is 40x40 dots.
	Switches the position of the system menu to either the upper or lower part of the screen.
	Displays the second level of system menus. If the the second level menu is already displayed, displays the first level menu.

Continued

Setting		Description
	Error	Always displays the latest error message on one line. If the error message cannot display on one line, it displays up to the maximum number of allowable characters. • Display Unit Error Errors generated on the display unit are shown as follows: === Server Error: \<Display Unit Time> \<Error Code>:\<Category>:\<Error Message> === **NOTE** • When errors display on the system menu, it is shown as follows. === Server: \<Error Code>:\<Category>:\<Error Message> === • The time that is shown with the display errors is based on the display unit time settings. When GP-Viewer EX is in a separate physical location, the displayed time may differ from the display unit. • GP-Viewer EX Error Errors generated on GP-Viewer EX appear in red, as shown below: === Viewer Error: \<Time on the Viewer PC> \<Error Code>:\<Category>:\<Error Message> === **NOTE** • Displays in black on monochrome models. • System menu errors appear in red, as shown below. === Viewer: \<Error Code>:\<Category>:\<Error Message> === • Times that appear in GP-Viewer EX errors are based on the time settings of the computer used to run GP-Viewer EX. When located in a separate physical location, the displayed time may differ from the display unit.
	Sound and volume control	This controls the sound volume of GP-Viewer EX.
		Changes how to display error messages (in error windows or one-line displays similar to the system menu).
		Closes an error window.

NOTE	• For errors that are automatically restored, such as communication errors with a connected device/PLC, the display unit may erase the error but the error remains in GP-Viewer EX. To remove the error, either change screens or click the Close button [x] in the system menu. ☒
	• When multiple errors are triggered at the same time, depending on the timing of when errors are received, all the errors may not display.

4 | Restrictions

4.1 View

In the case below, when [Synchronous Mode (S)] is enabled in [Screen Mode (D)], the display and GP-Viewer EX do not display identical items.

- About unsupported features for GP-Viewer EX that display on the display unit
- About scrolled or sorted data (e.g., alarm parts)

GP-Viewer EX does not have an offline mode. If the display unit moves to offline mode, communication with the GP-Viewer EX is disconnected and a communication error results.

- When you [Save] a new file or change a save location for project file information using [Save as], a message appears and the screen display is reset and saved. The display of the Data Block Display Graph is cleared. The sub-display of alarm history may change how it displays.

- When changing screens is prohibited on the server, you cannot change screens from GP-Viewer EX.
- Even when [Enable Screen Changes from Client] is set up in GP-Pro EX, in the [Display Unit] page's [Remote Viewer] tab, if [Write GP-Viewer Data] is disabled in security settings, [Change Screen on Server from Viewer] will be [Disabled].

4.2 SRAM process

The following features cannot be processed simultaneously because the SRAM save area is shared.
Therefore, if operation processes on the display overlap with requests from GP-Viewer EX, the processes may take a long time.

	Names of features
1	Sampling data CSV saving feature
2	Alarm history CSV saving feature
3	Filing data CSV saving feature
4	SRAM auto-backup feature
5	Logging data CSV saving feature (GP2000-compatible feature)
6	Line-plot Graph data CSV saving feature (GP2000-compatible feature)
7	CSV saving feature of data from data sampling (GP2000-compatible feature)
8	CSV saving of SRAM backup data from Pro-Server EX

4.3 Connection

- Regardless of the number of connected display units, you can display up to four windows of GP-Viewer EX on one computer. However, up to three units of GP-Viewer EX can access the display unit at the same time.
- If a project file is transferred to the display unit or the display unit enters offline mode while connected to GP-Viewer EX, the connection process will restart.
- After restoring the backed up SRAM data from the CF card, select [Use existing file] to connect to GP-Viewer EX. The project file is updated during connection.
- Be careful with the time spent for your tasks as you access data from the display unit from multiple computers.
- When connecting GP-Viewer EX to a display unit that is using Pro-Server EX's remote password feature, register the computer with GP-Viewer EX installed as a node in the Pro-Server EX network project and transfer it to the connected display unit. Communication is not possible with a display unit if GP-Viewer EX is not registered as a node. Select [Pro-Server EX] as the node type.
- If Operation Lock is enabled in the display unit, the connected GP-Viewer EX will display the IP address of the location of the Operation Lock source.
  If the display unit has multiple LAN ports as shown below, the IP address of any one of the multiple Ethernet settings is shown. Therefore, an IP address different from the actual IP address GP-Viewer EX communicates with may be shown.
  - When using SP5000 Series
  - When using EZ LAN Adapter with GP4000 Series models with a LAN port (excluding GP-410*)
  - To check which models support EZ LAN Adapter, refer to the following.
    ☞ GP-Pro EX Reference Manual, "Supported Features"

5 | Troubleshooting

5.1   Operations on the display unit is slow

Has the [Update Cycle] been set too high?

Cause

[Update Cycle] may be set too high. The display unit may be overloaded because GP-Viewer EX must be frequently updated with information from the display unit.

Solution

[Tool (T)] menu's [Change setting (P)] command, set the [Update Cycle] to a longer interval than the current setting.

Are there multiple connected GP-Viewer EXs?

Cause

Multiple GP-Viewer EXs are connected to one display unit, and therefore the display unit may be overloaded.

Solution

Reduce the number of connected GP-Viewer EXs or revise your system configuration.

5.2 Response of GP-Viewer EX is slow

The update cycle may be too long.

Cause

Drawing update frequency has been set too long which may cause the GP-Viewer EX to respond slowly.

Measures

[From the [Tool (T)] menu, select [Change setting (P)] and set a higher update frequency in the [Update Cycle] and a higher CPU utilization rate in the [Viewer CPU Usage].

Communication to or from the GP-Viewer EX may be overloading the network band.

Cause

Communication to or from the GP-Viewer EX may be overloading the network band.

Measures

From the [Tool (T)] menu, select [Change setting (P)] and set a longer update frequency under [Update Cycle].

NOTE	• With a longer information update frequency, you can reduce the CPU utilization as needed.

5.3 Action of other applications on a computer is slow

Is the GP-Viewer EX using too much CPU?

Cause

The GP-Viewer EX may be using too much of the computer's CPU.

Solution

From the [Tool (T)] menu, select [Change setting (P)] and lower the CPU utilization from its current value in [Viewer CPU Usage].

> **NOTE**
> • With a lower CPU utilization, the update cycle can be set longer as needed.

5.4   Error Messages

Errors generated on both the display unit and GP-Viewer EX are displayed on the system menu. Errors display in order of detection. You can set the update frequency of display unit errors in the [Viewer Settings] dialog box's [Update Cycle] and [Performance] fields.
For a summary of errors, refer to the following.
☞   Maintenance/Troubleshooting: "T.7 Display-related errors"