1 | PREFACE

Package Contents

CD-ROM 2

Installation
Guide

Installation
Guide
(Japanese/
English)

Supported Models

■ GP3000 Series

Series Name	Product Name	Model No.
GP3000H Series	AGP-3300HL	AGP3300H-L1-D24
	AGP-3300HS	AGP3300H-S1-D24
	AGP-3310HT	AGP3310H-T1-D24
GP-3200 Series	AGP-3200A	AGP3200-A1-D24
	AGP-3200T	AGP3200-T1-D24
GP-3300 Series	AGP-3300L	AGP3300-L1-D24
	AGP-3300L-D81	AGP3300-L1-D24-D81K
		AGP3300-L1-D24-D81C
	AGP-3300L-FN1M	AGP3300-L1-D24-FN1M
	AGP-3300L-CA1M	AGP3300-L1-D24-CA1M
	AGP-3300S	AGP3300-S1-D24
	AGP-3300S-D81	AGP3300-S1-D24-D81K
		AGP3300-S1-D24-D81C
	AGP-3300S-CA1M	AGP3300-S1-D24-CA1M
	AGP-3300T	AGP3300-T1-D24
	AGP-3300T-D81	AGP3300-T1-D24-D81K
		AGP3300-T1-D24-D81C
	AGP-3300T-FN1M	AGP3300-T1-D24-FN1M
	AGP-3300T-CA1M	AGP3300-T1-D24-CA1M
	AGP-3310T	AGP3310-T1-D24
	AGP-3360T	AGP3360-T1-D24
GP-3400 Series	AGP-3400S	AGP3400-S1-D24
	AGP-3400S-D81	AGP3400-S1-D24-D81K
		AGP3400-S1-D24-D81C
	AGP-3400S-CA1M	AGP3400-S1-D24-CA1M
	AGP-3400T	AGP3400-T1-D24
	AGP-3400T-D81	AGP3400-T1-D24-D81K
		AGP3400-T1-D24-D81C
	AGP-3400T-FN1M	AGP3400-T1-D24-FN1M
	AGP-3400T-CA1M	AGP3400-T1-D24-CA1M
	AGP-3450T	AGP3450-T1-D24

Series Name	Product Name	Model No.
GP-3500 Series	AGP-3500L	AGP3500-L1-D24
	AGP-3500L-D81	AGP3500-L1-D24-D81C
	AGP-3500S	AGP3500-S1-AF
		AGP3500-S1-D24
	AGP-3500S-D81	AGP3500-S1-AF-D81K
		AGP3500-S1-AF-D81C
		AGP3500-S1-D24-D81K
		AGP3500-S1-D24-D81C
	AGP-3500S-CA1M	AGP3500-S1-AF-CA1M
		AGP3500-S1-D24-CA1M
	AGP-3500T	AGP3500-T1-AF
		AGP3500-T1-D24
	AGP-3500T-D81	AGP3500-T1-AF-D81K
		AGP3500-T1-AF-D81C
		AGP3500-T1-D24-D81K
		AGP3500-T1-D24-D81C
	AGP-3500T-FN1M	AGP3500-T1-AF-FN1M
		AGP3500-T1-D24-FN1M
	AGP-3500T-CA1M	AGP3500-T1-AF-CA1M
		AGP3500-T1-D24-CA1M
	AGP-3510T	AGP3510-T1-AF
	AGP-3510T-CA1M	AGP3510-T1-AF-CA1M
	AGP-3550T	AGP3550-T1-AF
	AGP-3560T	AGP3560-T1-AF
GP-3600 Series	AGP-3600T	AGP3600-T1-AF
		AGP3600-T1-D24
	AGP-3600T-D81	AGP3600-T1-AF-D81K
		AGP3600-T1-AF-D81C
		AGP3600-T1-D24-D81K
		AGP3600-T1-D24-D81C
	AGP-3600T-FN1M	AGP3600-T1-AF-FN1M
		AGP3600-T1-D24-FN1M
	AGP-3600T-CA1M	AGP3600-T1-AF-CA1M
		AGP3600-T1-D24-CA1M
	AGP-3650T	AGP3650-T1-AF
GP-3700 Series	AGP-3750T	AGP3750-T1-AF
		AGP3750-T1-D24

■ WinGP

Series Name		Model No.
PS Series	PS-2000B Series	PS2000B-41
	PS-3000B Series	PS3000-BA
	PS-3001B Series	PS3001-BD
	PS-3450A Series	PS3450A-T41
		PS3450A-T41-24V
	PS-3451A Series	PS3451A-T41-24V
	PS-3650A Series	PS3650A-T41
	PS-3651A Series	PS3651A-T41
	PS-3700A Series	PS3700A-T41-ASU-P41
	PS-3710A Series	PS3710A-T41
		PS3710A-T42
		PS3710A-T41-24V
		PS3710A-T42-24V
	PS-3711A Series	PS3711A-T41
		PS3711A-T42
		PS3711A-T41-24V
		PS3711A-T42-24V
PL Series	PL-3000B Series	APL3000-BA
		APL3000-BD
	PL-3600T Series	APL3600-TA
		APL3600-TD
	PL-3600K Series	APL3600-KA
		APL3600-KD
	PL-3700T Series	APL3700-TA
		APL3700-TD
	PL-3700K Series	APL3700-KA
		APL3700-KD
	PL-3900T Series	APL3900-TA
		APL3900-TD

■ LT3000 Series

Series Name	Product Name	Model No.
LT3000 Series	LT-3300L	LT3300-L1-D24-K
		LT3300-L1-D24-C
	LT-3300S	LT3300-S1-D24-K
		LT3300-S1-D24-C

■ GP2000 Series/GP77R Series/GLC Series/Factory Gateway

Series Name	Product Name	Model No.	Built-in Ethernet	External Ethernet	Remarks
GP2300 Series	GP-2300L	GP2300-LG41-24V	Available	Not Available	-
	GP-2300T	GP2300-TC41-24V			
GP2400 Series	GP-2400T	GP2400-TC41-24V			
GP2500 Series	GP-2500T	GP2500-TC11		Available	*1
		GP2500-TC41-24V			
GP2501 Series	GP-2501S	GP2501-SC11	Not Available		*2
	GP-2501T	GP2501-TC11			
GP2600 Series	GP-2600T	GP2600-TC11	Available		*1
		GP2600-TC41-24V			
GP2601 Series	GP-2601	GP2601-TC11	Not Available		*2
GLC2300 Series	GLC2300L	GLC2300-LG41-24V	Available	Not Available	-
	GLC2300T	GLC2300-TC41-24V			
GLC2400 Series	GLC2400T	GLC2400-TC41-24V			
GLC2500 Series	GLC2500T	GLC2500-TC41-24V		Available	*1
		GLC2500-TC41-200V			
GLC2600 Series	GLC2600T	GLC2600-TC41-24V			
		GLC2600-TC41-200V			
GP77R Series	GP-377RT	GP377R-TC11-24V	Not Available	Available	*2
		GP377R-TC41-24V			
	GP-477RE	GP477R-EG11			
		GP477R-EG41-24VP			
	GP-577RS	GP577R-SC11			
		GP577R-SC41-24VP			
	GP-577RT	GP577R-TC11			
		GP577R-TC41-24VP			
IT2400 Series	IT2400 TypeA	IT2400-TC41-GP	Available	Not Available	-
		IT2400-TC41-GP200V			
	IT2400 TypeB	IT2400-TC41-GLC			
		IT2400-TC41-GLC200V			
Factory Gateway	Factory Gateway	FGW-SE41-24V	Available	-	-

*1   GP Ethernet I/F Unit or Multi Unit E is also applicable.

*2   GP Ethernet I/F Unit or Multi Unit E is necessary.

NOTE
- Using 'Pro-Server EX' with GP-2501 Series or GP-2601 Series requires an expansion Ethernet unit. Therefore, protocols that need expansion units cannot be used in this case.
- For GP-2501 Series and GP-2601 Series, 'Pro-Server EX' and Ethernet protocols cannot be used simultaneously.
- The IP addresses, port Nos., etc. are different when with only built-in Ethernet and when with an expansion Ethernet unit mounted.

OPERATING ENVIRONMENT

Confirm that the PC in which you will install this software meets the following operating requirements.

Item	Requirements	Remarks
PC	Windows$^{(R)}$ must operate normally	Pentium$^{(R)}$ III 500MHz or faster processor PC/AT compatible
Resolution	SVGA 800x600 or more is recommended 256 colors or more is required Only 96dpi font is supported.	
Hard Disk Space Requirements	Pro-Server EX Developer Operating Environment 1.1G byte (2.2G bytes recommended) Pro-Server EX Runtime Operating Environment 650M bytes (1.3G byte recommended)	
Memory Requirements	128 MB or more	256 MB or more is recommended
OS	Windows(R) 2000 (Service Pack3 or later)/ XP(Home Edition/Professional Edition)/Vista (Ultinate Edition/Home Premium Edition/Home Basic Edition/Business Edition/Enterprise Edition)/2003 Server (Standard Edition/Enterprise Edition)	64-bit OS (x64 Edition) is not supported.
Others	Microsoft$^{(R)}$ Excel 2000 to 2007(For Microsoft(R) Excel 2007, only Excel Form Action is supported) Microsoft$^{(R)}$ Access 2000 to 2003 Microsoft$^{(R)}$ Internet Explorer Ver. 5.0 or later* Microsoft$^{(R)}$ Visual Basic Ver.6.0 Microsoft$^{(R)}$ Visual C^{++} Ver.6.0 or Ver.7.0 Microsoft$^{(R)}$ Visual Studio .NET 2003 or later .NET Framework Ver.1.1(Service Pack1 or later) Acrobat$^{(R)}$ Reader$^{(R)}$ Ver.6.0.3 or later	Automatically installed in the PC without .NET Framework Ver.1.1 (Service Pack1 or later)
Supported Language	Japanese, English	
LAN Port	Commercially available LAN cable HUB	10BASE-T 100BASE-T
Disk Drive	CD-ROM drive compatible with Windows$^{(R)}$ 2000 (Service Pack3 or later)/ XP (Home Edition/ Professional Edition) /Vista (Ultinate Edition/ Home Premium Edition/Home Basic Edition/ Business Edition/Enterprise Edition)/ 2003 Server (Standard/Enterprise) indispensable	
Mouse	Windows(R) 2000 (Service Pack3 or later)/ XP (Home Edition/Professional Edition)/Vista (Ultinate Edition/Home Premium Edition/Home Basic Edition/Business Edition/Enterprise Edition) /2003 Server (Standard/Enterprise)	
Printer		

*Keep updating to the latest version.

1.1 What is 'Pro-Server EX'?

'Pro-Server EX' is PC software to collect displayed data from the GPs and measured data from the devices connected to the PC via a network (Ethernet) in the PC and execute various processing of the collected data. 'Pro-Server EX' is linked with various application software such as 'Microsoft Excel' (referred to as 'Excel'), and 'Microsoft Access' (referred to as 'Access'). This allows you to use the data as you desire utilizing various features of application software such as form creation and write of device data to the Device/PLC.
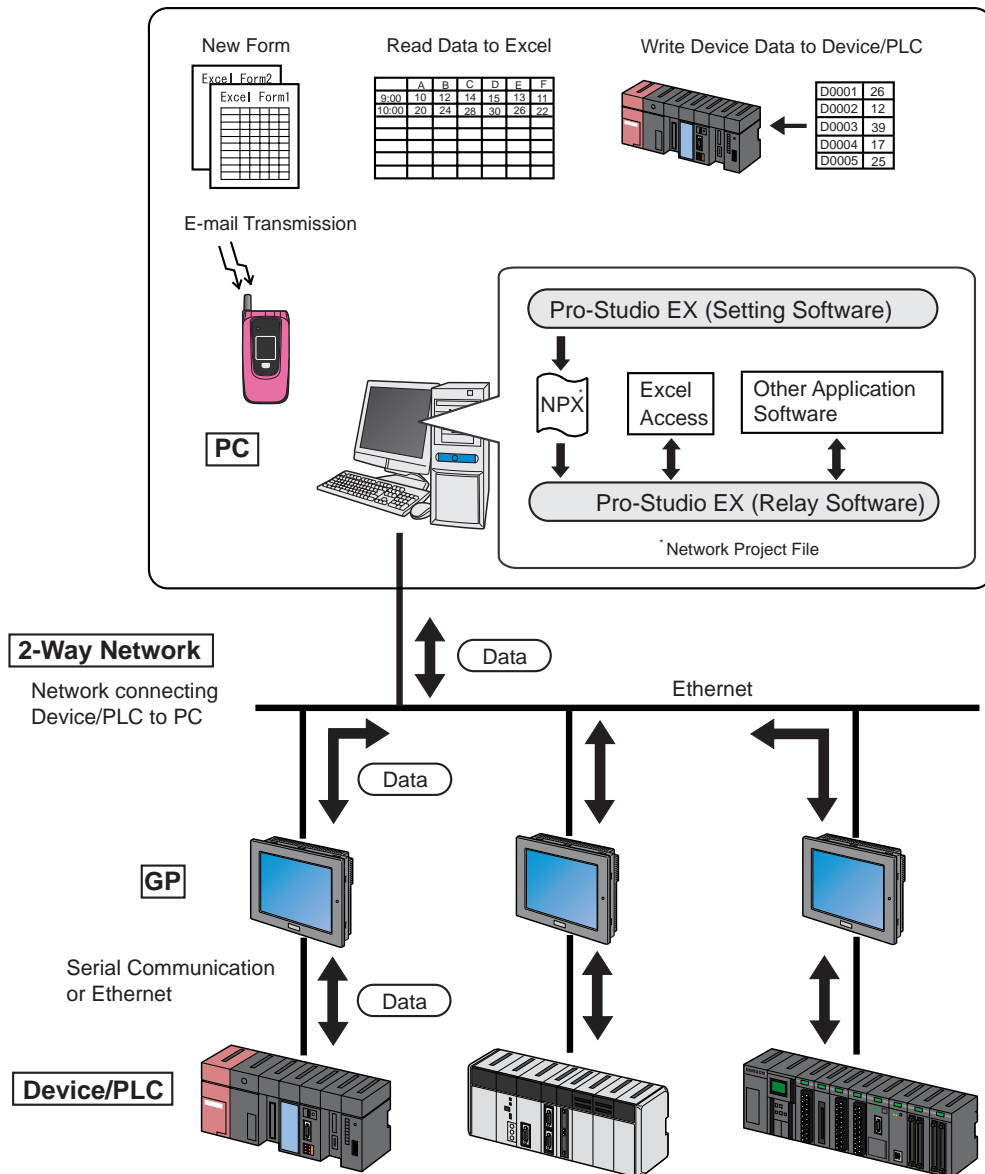
1.2   What You can Do with 'Pro-Server EX'

■ Form Creation

'Pro-Server EX' allows you to automatically create various forms such as control sheets and reports based on the data read from the GPs or Device/PLCs. 'Pro-Server EX' prepares a wide variety of templates that are applicable to the formats frequently used in production sites.

)☞ "5 Creating a Form Using Excel"
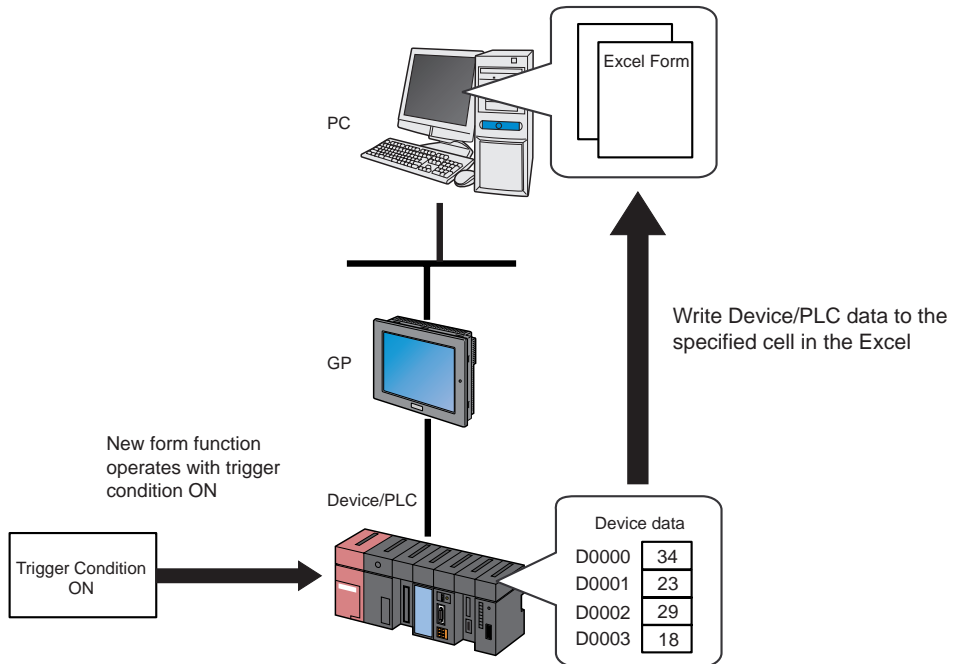
■ Data Input to Device/PLC

'Pro-Server EX' allows you to write plural data to the Device/PLCs at an arbitrary timing. This enables you to
input working instructions, various parameters, etc. in the office without going out to the production site.

)"12 Writing Excel Data in Device/PLC"

)"13 Writing CSV File Data in Device/PLC"
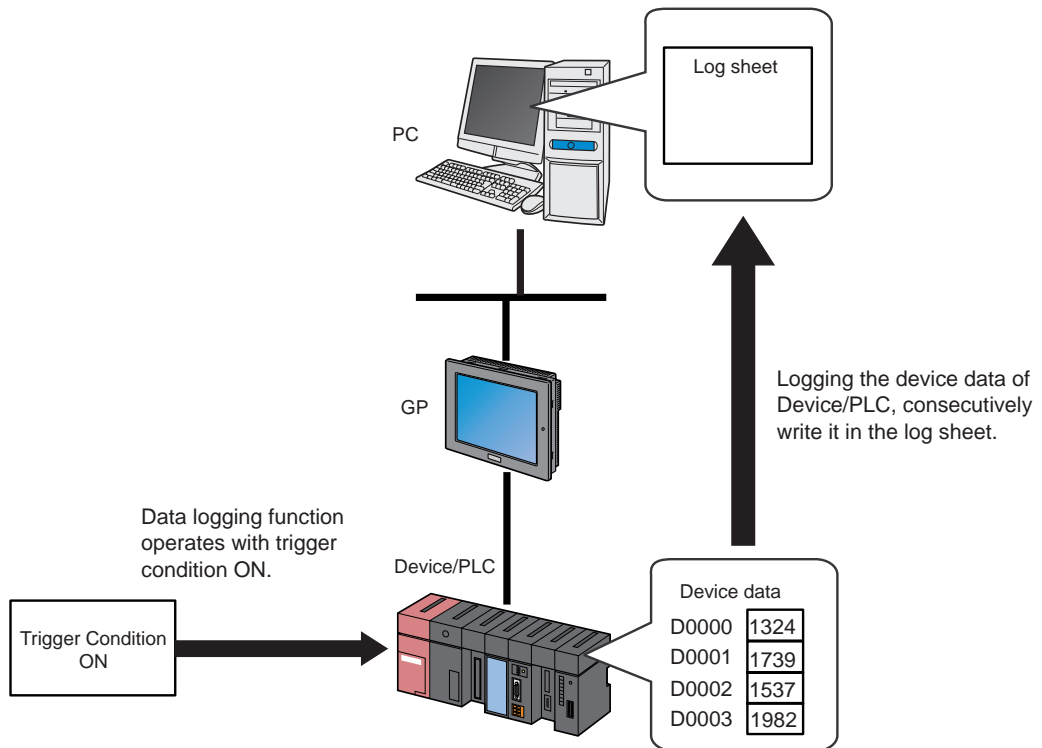
)"14 Reading Device/PLC from Database"
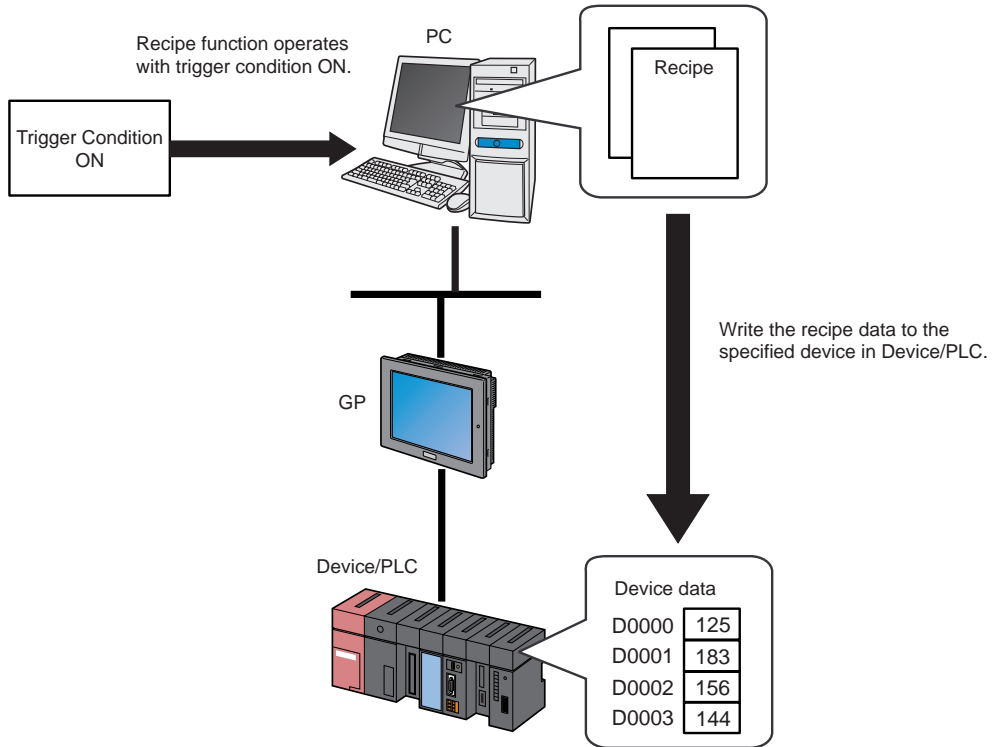
■ Logging of Device/PLC Data

'Pro-Server EX' allows periodic logging (continuous read) of plural data at an arbitrary interval. The logged data is written in application software such as 'Excel'. This feature enables you to easily edit or process the data.
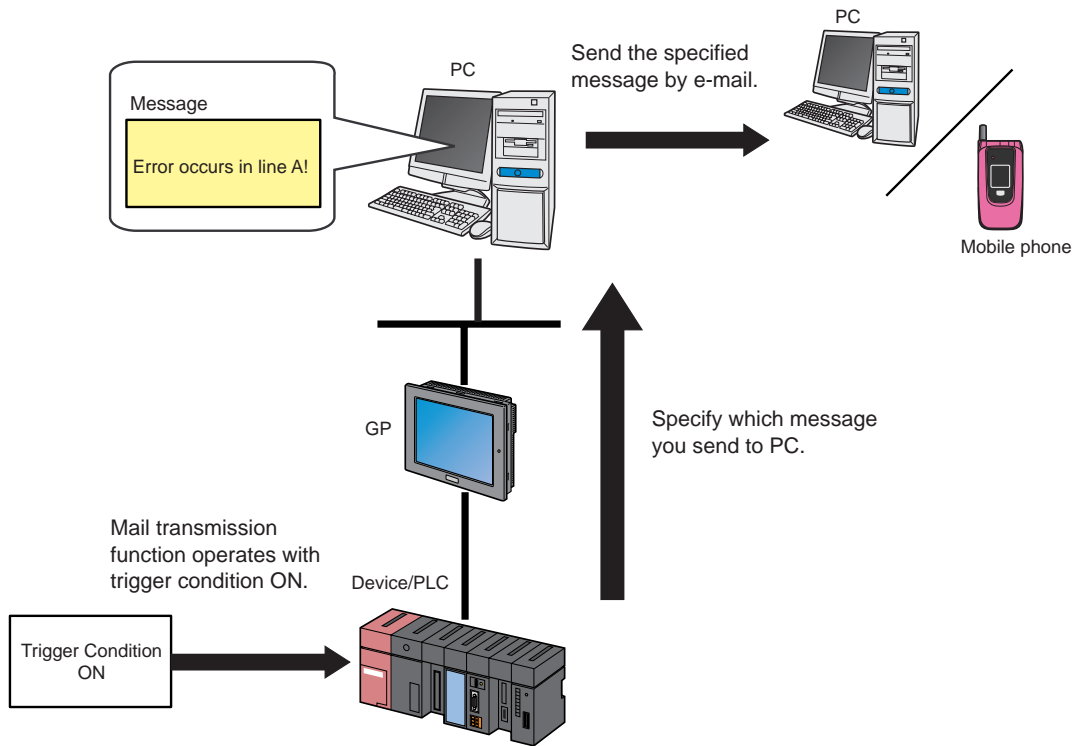
☞ "6 Writing Device/PLC Data in Excel File"

☞ "7 Writing Device/PLC Data in CSV File"

■ Sending Message via E-Mail

'Pro-Server EX' allows e-mailing preset messages when a preset event has occurred such as change in data or occurrence of trouble. This feature enables you to report to the manager immediately after a trouble occurred.
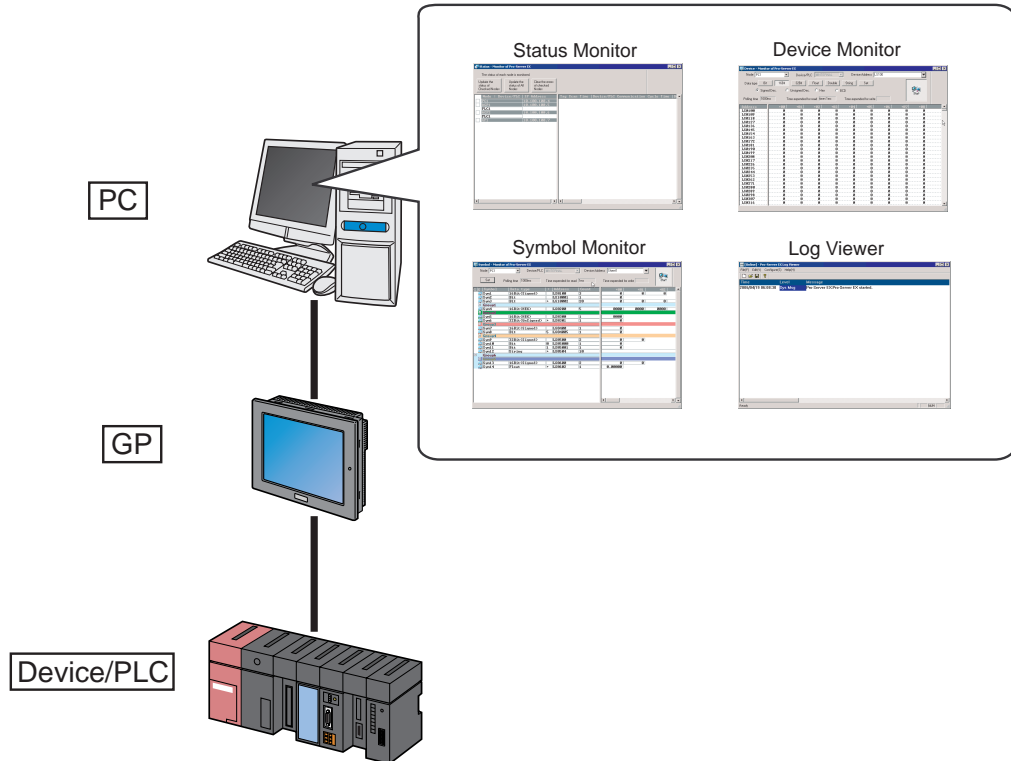
☞ "15 Reporting Alarm by E-mail"

■ Monitoring of Device/PLC Data

'Pro-Server EX' allows you to monitor device data of the GPs and Device/PLCs with simple operation. It also allows you to write the data to an arbitrary device address from the PC.

)"28 Simply Confirming On-site Status"

Status Monitor

Device Monitor

Symbol Monitor

Log Viewer

PC

GP

Device/PLC

The 'Pro-Server EX' has other features as follows:

■ Data Transfer between Device/PLCs

'Pro-Server EX' allows data transfer among the GPs and Device/PLCs without a PC. This feature enables data sharing even when the Device/PLCs are of different manufacturer.

☞ "19 Sending Data between Devices"

Company A's PLC   Company B's PLC   Company C's PLC
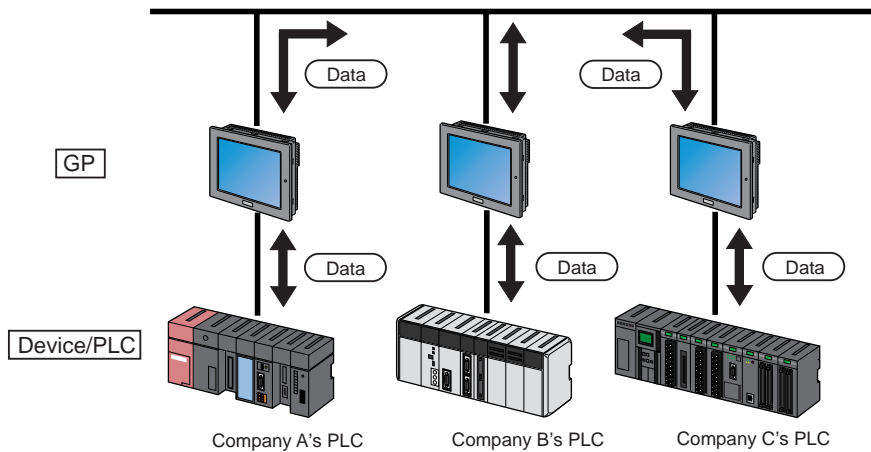
■ Data Processing using a User Application Program

'Pro-Server EX' allows access to the data of Device/PLCs using a user application program created in VB ('Visual Basic'), VC ('Visual C++'), VB .NET, or C# .NET format. This feature enables a variety of data processing depending on the contents of the program.

☞ "27 Designing Your Own Program"

The above features are only a part of the various features of 'Pro-Server EX'. Refer to each chapter of this manual for the other features of 'Pro-Server EX'.

1.3   How the Data Management System Operates

This section describes how the data management system using 'Pro-Server EX' operates.
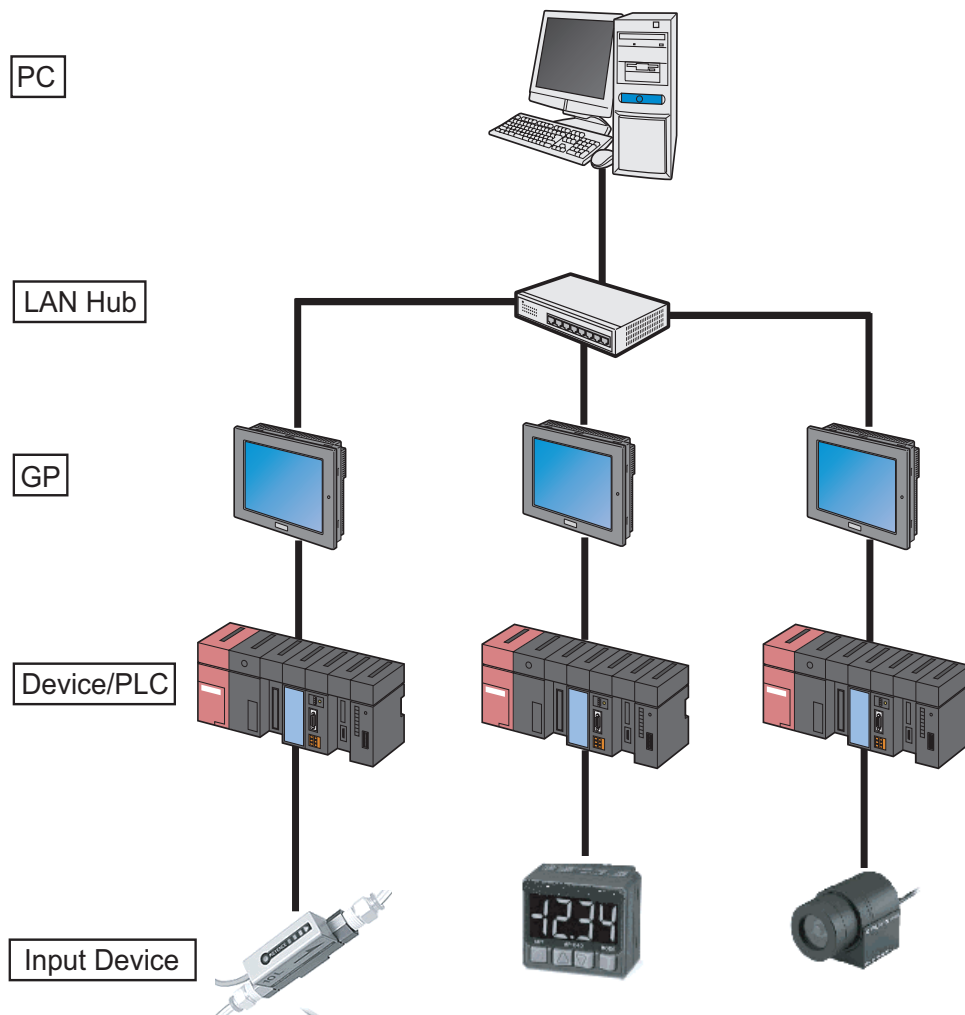
1.3.1   Devices to be Used

The data management system using Pro-Server EX needs the following devices.

You must prepare an appropriate system configuration as follows before actual use.

)"2 Preparation"

*The following shows an example of the system. You can use other devices depending on the working environments.

PC

LAN Hub

GP

Device/PLC

Input Device

■ PC

Used to read/write the data of GPs and Device/PLCs via a network (Ethernet) after 'Pro-Server EX' and 'Pro-Studio EX' are installed therein.

■ LAN Hub

Used to connect all the devices together via Ethernet.

■ GP

A combination of operation panels and display units that have been provided separately for machines and equipment.
The GP has features of displaying characters information, graphics information, etc. and entering data from touch keys.

■ Device/PLC

Used to capture data and perform control. The Device/PLC includes a PLC, thermostat, inverter, etc. The Device/PLC performs control based on the data from the input devices and outputs the result to the GPs.

■ Input Device

An externally connected device such as a sensor and a switch that performs measurement, counting, etc. The data is captured via the Device/PLC.

1.3.2   Software to be Used

The data management system using 'Pro-Server EX' includes following software. This section describes the overview and features of the software.

■ 'Pro-Studio EX'

System designing software to be used when developing a data management system.

'Pro-Studio EX' allows various settings such as those of information about the devices being connected to the network and conditions for receiving/sending data and then creating a network project file containing those settings.

After the created network project file is transferred to the GPs, the data management system can operate effectively according to the settings in the network project file.

■ 'Pro-Server EX'

A data relay driver for operating data management system.

'Pro-Server EX' allows data communication between the PC and the GPs in accordance with the content of the network project file created using Pro-Studio EX, and to read/write of the collected data to the application software of the PC and the devices.

Network Project File

The data management system using 'Pro-Server EX' creates a file in the GP screen data (project file), which contains information about the devices being connected and features to be used. This file is called "Network project file", and is affixed with an extension of ".npx". The same network project file is basically used for all the devices being connected via a network, and the data is processed based on the settings.

■ '2-Way Driver'

Built-in software in a GP, which serves as an interactive communication driver to translate communication protocols of various Device/PLCs and to perform communication between the PC and the Device/PLCs via the GPs.

The 2-way driver acts according to the content of the network project file transferred from the PC.

IMPORTANT • The GP77R Series, GP2501 Series, and GP2601 Series have no built-in '2-way driver'. Be sure to download a '2-way driver' from 'GP-Pro PB III'. For help with downloading, refer to the 'GP-Pro PB III Operation Manual'.

1.3.3   How to Transfer the Data

The data management system using 'Pro-Server EX' uses the following features to read/write data from/to application software such as 'Excel'.

Depending on the ACTION to be executed, an appropriate feature is used.

■ DDE(Dynamic Data Exchange)

A system to support exchange of data between two applications running simultaneously on Windows.

For example, in the case when reading the data of the Device/PLCs using 'Excel', 'Excel' requests data and 'Pro-Server EX' sends the data. That is how the data is automatically exchanged.

Application software such as 'Pro-Server EX', 'Excel' and 'Access' has this DDE function preinstalled, making it possible to read/write data without any special settings.

■ API(Application Programming Interface)

A series of functions used for relaying 'Pro-Server EX' and application programs. Using API can exchange data via user application programs created in VB ('Visual Basic'), VC ('Visual C++'), VB .NET, or C# .NET format.

Access of an application program to the 'Pro-Server EX' API used for exchanging data enables read/write of the data of the Device/PLCs.
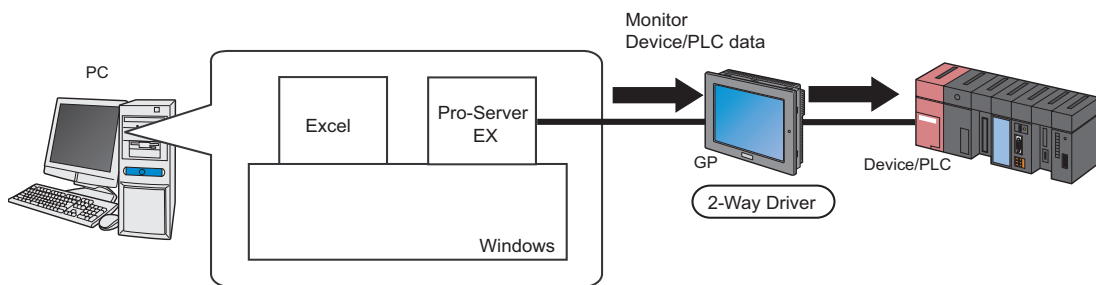
■ ACTION

A system preinstalled in 'Pro-Server EX' to exchange data.

The ACTION includes data exchange with an application program, access to a transmission server when sending e-mails.
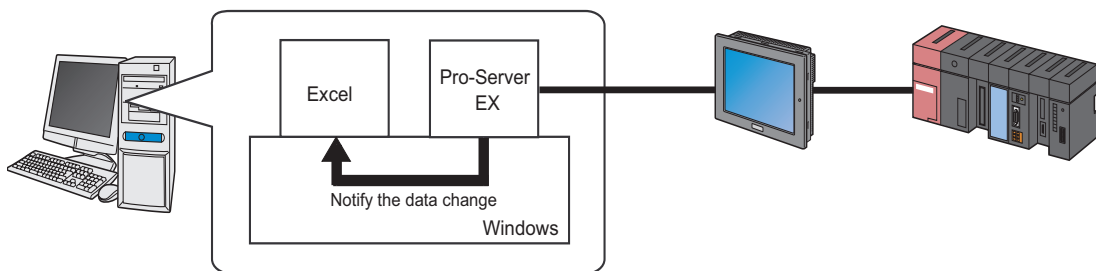
The following shows how the DDE function runs.
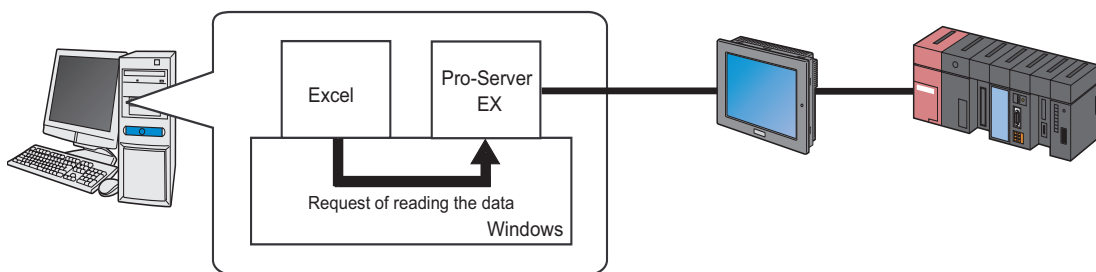
[Data Exchange by DDE]

(1) 'Pro-Server EX' on Windows always monitors the measurement data in the Device/PLC via the 2-way driver in the GP.
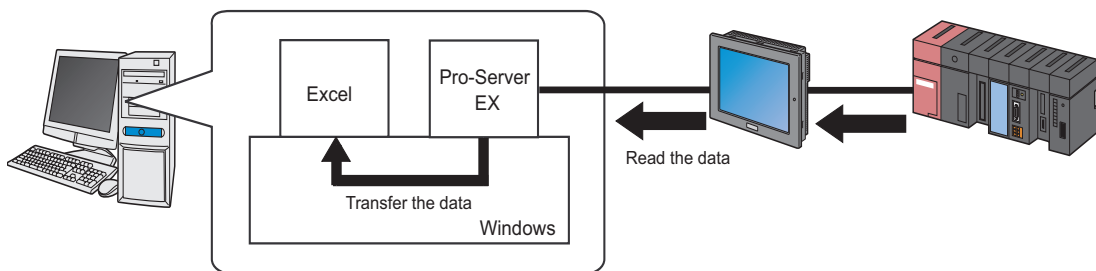

(2) The 'Pro-Server EX' notifies 'Excel' of a change in the data in the Device/PLC, if any.
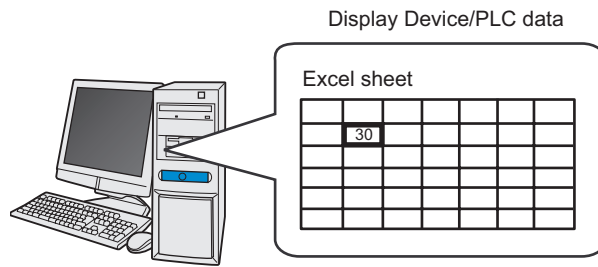

(3) 'Excel' requests read of the data to 'Pro-Server EX'.

(4) 'Pro-Server EX' reads the Device/PLC data and transfers the read data to 'Excel'.

(5) 'Excel' displays the transferred data on the specified cell.

Display Device/PLC data

Excel sheet

1.4   Necessary Operation

This chapter describes necessary operation for executing data management using 'Pro-Server EX' and the flow of the procedures.

Refer to each chapter in this manual for more details.

NOTE   • The following flow of the procedures assumes that the connection between the GP and Device/PLC and the setting of the GP are completed. Incomplete connection and setting may result in failure to read/write of data using the PC. Be sure to complete correct connection and setting referring to the related operation manual of the GP and the 'GP-Pro EX'.

(1) Preparation (only for the first time)

| Install'Pro-Server EX' and 'Pro-Studio EX' | ☞ 'Pro-Server EX Installation Guide' |

▼

| Ethernet cable connection between devices and network settings of PC and GP | ☞ Chapter 2 Preparation |

(2) Start the software

| Start 'Pro-Studio EX' | ☞ Chapter 3 Trial of Pro-Server EX |

Start 'Pro-Studio EX' when communication becomes necessary.

(3) Create the network project file

| Register nodes | ☞ Chapter 31 Node Registration |

▼

| Register symbols | ☞ Chapter 32 Symbol Registration |

▼

| Trigger Condition Setting | ☞ Chapter 33 Trigger Conditions |

▼

| Action (function) Setting | ☞ Each chapter related to Action |

(4) Save the network project | ☞ Chapter 25 Saving |

(5) Transfer the network project file | ☞ Chapter 26 Transferring |

System management