

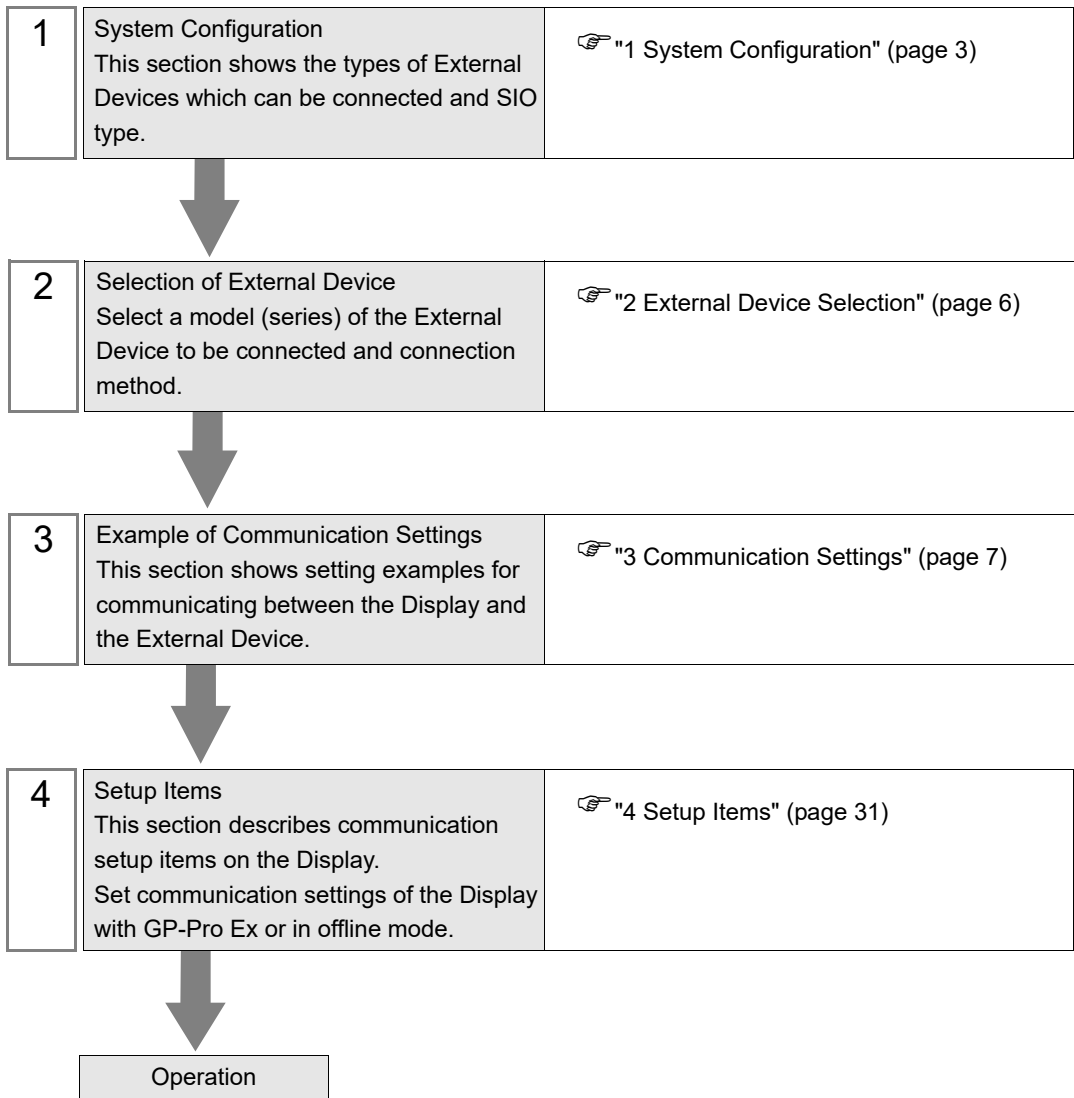
SIMATIC S7 Ethernet Driver

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Introduction

This manual describes how to connect the Display and the External Device (target PLC).

In this manual, the connection procedure will be described by following the below sections:



1 System Configuration

The system configuration in the case when the External Device and the Display are connected is shown.

| Series | CPU | Link I/F | SIO Type*1 | Setting Example |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------------------|--------------------------------|
| SIMATIC S7-200 Series | CPU222 CPU224 CPU224 XP CPU226 | CP 243-1 IT*2 CP 243-1 | Ethernet (TCP) (OP Communication) | Setting Example 3 (page 13) |
| SIMATIC S7-300 Series | CPU312IFM CPU313 CPU314 CPU314IFM CPU315 CPU315-2 DP CPU316 CPU316-2 DP CPU318-2 CPU315-2 PN/DP CPU317-2 PN/DP CPU319-3 PN/DP | CP 343-1 IT CP 343-1 | Ethernet (TCP) (FETCH/WRITE) | Setting Example 1 (page 7) |
| | CPU315-2 PN/DP CPU317-2 PN/DP CPU319-3 PN/DP | Ethernet interface on CPU*3 | Ethernet (TCP) (OP Communication) | Setting Example 2 (page 10) |
| | CPU412-1 CPU412-2 DP CPU413-1 CPU413-2 DP CPU414-1 CPU414-2 DP CPU414-3 DP CPU416-1 CPU416-2 DP CPU416-3 DP CPU417-4 CPU414-3PN/DP CPU416-3PN/DP | CP 443-1 IT CP 443-1 | Ethernet (TCP) (FETCH/WRITE) | Setting Example 1 (page 7) |
| SIMATIC S7-400 Series | CPU414-3PN/DP CPU416-3PN/DP | Ethernet interface on CPU*3 | Ethernet (TCP) (OP Communication) | Setting Example 2 (page 10) |
| | CPU1211C CPU1212C CPU1214C | PROFINET interface on CPU*4 | Ethernet (TCP) (OP Communication) | Setting Example 4 (page 16) |

| Series | CPU | Link I/F | SIO Type ^{*1} | Setting Example |
|------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------|-----------------------------|
| LOGO! Series | 0BA7 | Ethernet interface on CPU ^{*3} | Ethernet (TCP) (OP Communication) | Setting Example 5 (page 19) |
| | 0BA8 | Ethernet interface on CPU ^{*3} | Ethernet (TCP) (OP Communication) | Setting Example 7 (page 25) |
| | 0BA8.FS4 | Ethernet interface on CPU ^{*3} | Ethernet (TCP) (OP Communication) | Setting Example 8 (page 28) |
| SIMATIC S7-1500 Series | CPU1511-1 PN CPU1513-1 PN CPU1515-2 PN CPU1516-3 PN/DP CPU1518-4 PN/DP CPU1516F-3 PN/DP CPU1518F-4 PN/DP | PROFINET interface on CPU | Ethernet (TCP) (OP Communication) | Setting Example 6 (page 22) |

*1 OP Communication has a larger address range of usable devices as that of FETCH/WRITE, so we recommend use of OP Communication.

"5 Supported Device Addresses" (page 40)

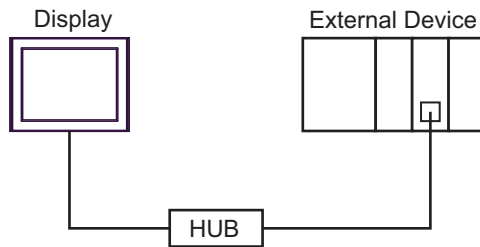
*2 CP 243-1 IT and CP 243-1 can use the version of CPU above Rel.1.20.

*3 The Ethernet interface in the CPU only supports OP Communication. FETCH/WRITE cannot be used.

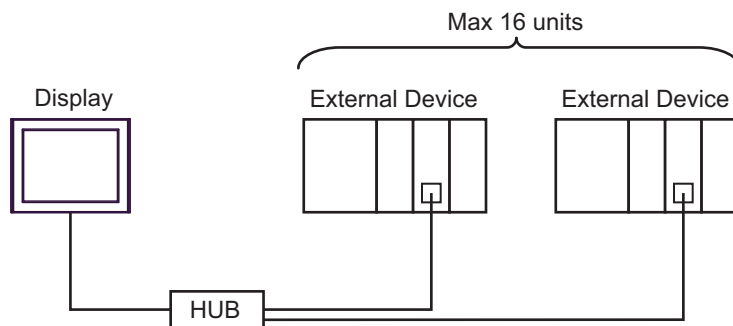
*4 The PROFINET interface in the CPU only supports OP Communication. FETCH/WRITE cannot be used.

■ Connection Configuration

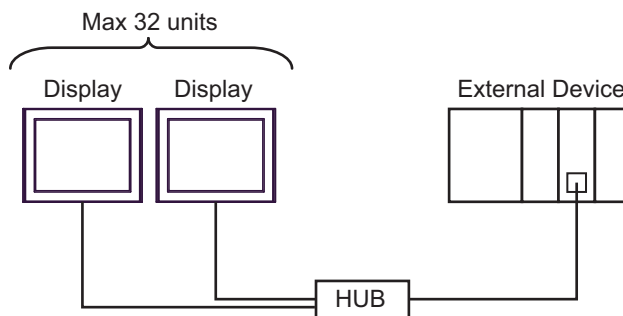
- 1:1 Connection



- 1:n Connection



- n:1 Connection



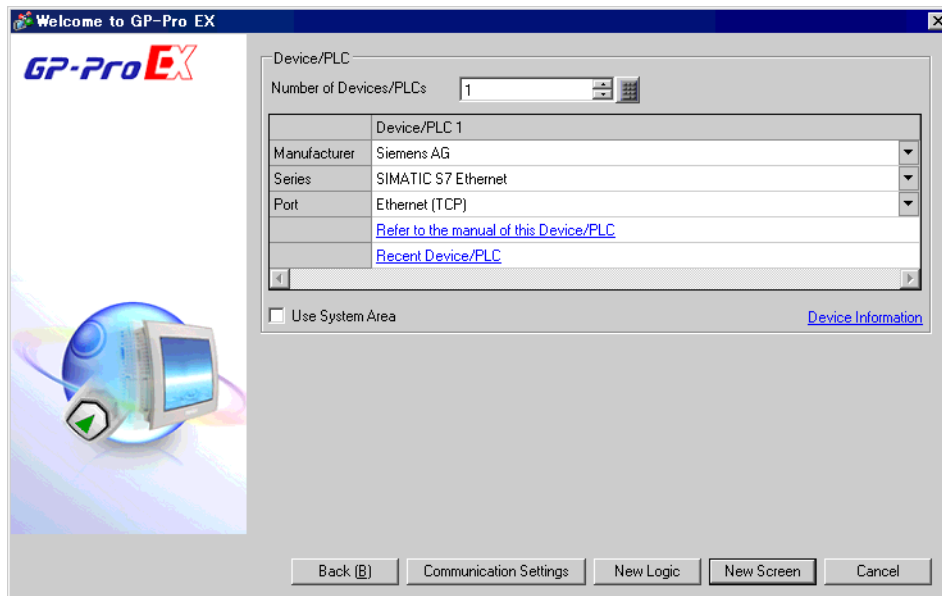
The number of connectable Displays depends on the External Device.

NOTE

- The number of connectable Display depends on the External Device. Please refer to the External Device manual for more details.
- The following limitations apply when using the LOGO! series:
 - 1:n connections require a network switch.
 - n:1 connection is not supported.
 - You cannot use the Display if the ladder software is online.

2 External Device Selection

Select the External Device to be connected to the Display.



| Setup Items | Setup Description |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of Devices/PLCs | Enter an integer from 1 to 4 for the number of series to set. |
| Manufacturer | Select the manufacturer of the External Device to be connected. Select "Siemens AG". |
| Series | Select a model (series) of the External Device to be connected and connection method. Select "SIMATIC S7 Ethernet". Check the External Device which can be connected in "SIMATIC S7 Ethernet" in system configuration. ☞ "1 System Configuration" (page 3) |
| Port | Select the Display port to be connected to the External Device. |
| Use System Area | Check this option when you synchronize the system data area of Display and the device (memory) of External Device. When synchronized, you can use the ladder program of External Device to switch the display or display the window on the display. Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)" This can also be set in GP-Pro EX or in the Display's offline mode. Cf. GP-Pro EX Reference Manual "Display Unit (System Area) Settings Guide" Cf. Maintenance/Troubleshooting Manual "Main Unit - System Area Settings" |

3 Communication Settings

Examples of communication settings of the Display and the External Device, recommended by Pro-face, are shown.

3.1 Setting Example 1

■ GP-Pro EX Settings

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer: Siemens AG Series: SIMATIC S7 Ethernet Port: Ethernet (TCP)

Text Data Mode: 1 [Change](#)

Communication Settings

Port No. (FETCH): 1024 Auto

(WRITE): 1025

Timeout: 3 (sec)

Retry: 0

Wait To Send: 0 (ms) [Default](#)


Device-Specific Settings

Allowable Number of Devices/PLCs: 16 [Add Device](#)

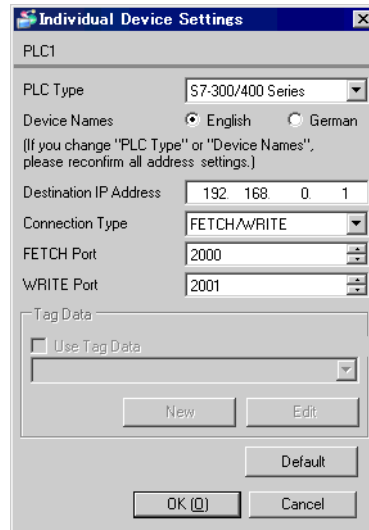
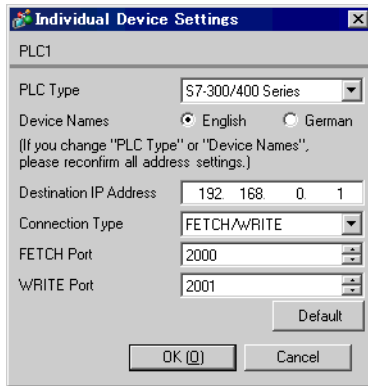
| No. | Device Name | Settings |
|-----|-------------|--------------------------------------------------|
| 1 | PLC1 | PLC Type=S7-300/400 Series, Device Names=English |

Add Indirect Device [+](#)

◆ Device Settings

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] . To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

- For GP3000, LT3000, or GP-4100 Series
- For other series that are not listed to the left



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

■ External Device External Equipment Settings

Use the FETCH TCP protocol and WRITE TCP protocol so that the Ethernet driver can read and write data for the External Device External Equipment. Setting example is shown below. Please refer to the manual of the External Device External Equipment for more details.

- (1) Select CP343-1/443-1 from hardware configuration menu in the ladder software "STEP 7" by Siemens AG. When the dialog box is displayed, set [IP address] and [Subnet mask] in the [Parameters] tab.
- (2) Start up "NetPro" from "STEP7", and select the CPU to which CP343-1/443-1 is connected. Right-click to select [Insert New Connection].
- (3) Select [TCP connection] for [Type] in the displayed dialog box, and leaving [Unspecified] selected for [Station], click [OK].
- (4) Click the [Options] tab in the displayed dialog box, and select [Fetch passive] in [Mode].
- (5) Click the [Address] tab, and enter the port No. (FETCH PORT No. Default 2000) Do not set the duplicate port No.
- (6) Click [OK].
- (7) Select the CPU again to which CP343-1/443-1 is connected. Right-click to select [Insert New Connection].
- (8) Select [TCP connection] for [Type] in the displayed dialog box, and leaving [Unspecified] selected for [Station], click [OK].
- (9) Click the [Options] tab in the displayed dialog box, and select [Write passive] in [Mode].
- (10) Select the [Address] tab and enter the port No. (WRITE PORT No. Default 2001) Do not set the duplicate port No.
- (11) Click [OK].
- (12) Save the above setting contents and download to the External Device External Equipment.

◆ Notes

- The FETCH port's Partner that is set in the ladder software communication setting dialog box must be the same as the [Port No. (FETCH)] set in the GP-Pro EX BLUE Imagine communication settings. Likewise, the WRITE port's Partner must be the same as the [Port No. (WRITE)].
If each Partner of the FETCH port and the WRITE port is blank, the [Port No.] can be also set to [Auto].
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- The "Keep Alive" feature of Siemens CP Module is not supported. Please set the "Keep Alive" to 0.
- When the Display Target is turned off and on again during communication with the External Device External Equipment or is switched to offline mode and then back to online mode, it may take several tens of seconds before the communication is resumed.

3.2 Setting Example 2

■ GP-Pro EX Settings

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer Series Port

Text Data Mode [Change](#)

Communication Settings

Port No. (FETCH) Auto

(WRITE)

Timeout (sec)

Retry

Wait To Send (ms)

Device-Specific Settings


Allowable Number of Devices/PLCs [Add Device](#)

| No. | Device Name | Settings | Add Indirect Device |
|----------------------------------|-----------------------------------|-------------------------------------------------------------------------------|----------------------------------|
| <input type="button" value="1"/> | <input type="text" value="PLC1"/> | <input type="text" value="PLC Type=S7-300/400 Series, Device Names=English"/> | <input type="button" value="+"/> |

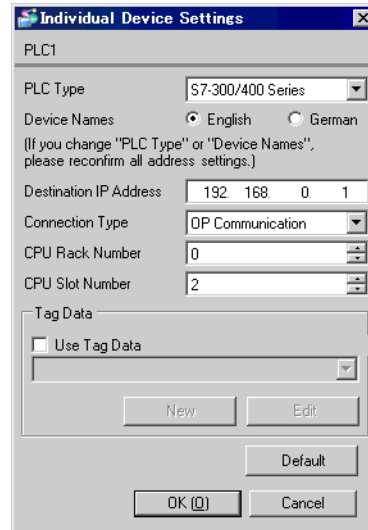
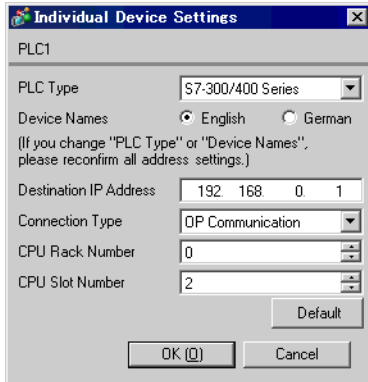
NOTE

- Port No. that is set to [Port No. (FETCH)] performs communication in OP Communication. Port No. that is set to [Port No. (WRITE)] is not used.

◆ Device Settings

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] . To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

- For GP3000, LT3000, or GP-4100 Series
- For other series that are not listed to the left



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

■ External Device Settings

The Communication setting for the External Device is executed using ladder software (STEP 7).

Please refer to the manual of the External Device for more details.

- (1) Start up ladder software.
- (2) Select [New Project Wizard] of [File] menu and make a project. Set the CPU, Organization Block, and project name to be used following the instruction provided by the wizard.
- (3) Start up Hardware setting.
- (4) Select the module to be used from the catalog view and allocate it to the slot of the mounted module number.
- (5) After allocating the module, [Property] dialog box is displayed. Set IP address and subnet mask to [Property] dialog box of the module to be used for communication.
- (6) Select [New] from [Subnet] of [Property] dialog box.
- (7) Confirm displayed Subnet property and click [OK].
- (8) Select Subnet property displayed in [Subnet] of [Property] dialog box. Click [OK] to close [Property] dialog box.
- (9) Select [Save and Compile] from [Station] menu and save the contents of the settings. After saving, end Hardware setting.
- (10) Start up NetPro and download the contents for setting to the External Device. After the download is completed, reboot the power of the External Device.

◆ Notes

- Check that the CPU rack number and CPU slot number to be used for communication are the same as the GP-Pro EXBLUE setting. If the setting is not the same, communication cannot be conducted.
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- When the Display is turned off and on again during communication with the External Device or is switched to offline mode and then back to online mode, it may take several tens of seconds before the communication is resumed.

3.3 Setting Example 3

■ GP-Pro EX Settings

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer Series Port

Text Data Mode [Change](#)

Communication Settings

Port No. (FETCH) Auto

(WRITE)

Timeout (sec)

Retry

Wait To Send (ms)


Device-Specific Settings

Allowable Number of Devices/PLCs [Add Device](#)

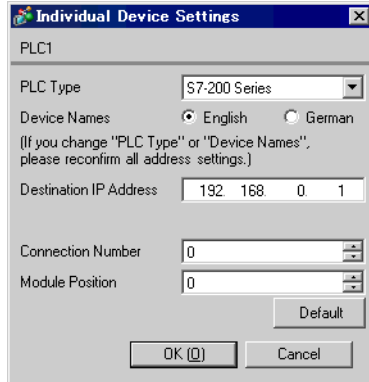
| No. | Device Name | Settings | Add Indirect Device |
|----------------------------------|-----------------------------------|---------------------------------------------------------------------------------|----------------------------------|
| <input type="button" value="1"/> | <input type="text" value="PLC1"/> | <input type="text" value="PLC Type=S7-200 Series, Device Names=English, Dest"/> | <input type="button" value="+"/> |

-
- NOTE**
- Port No. that is set to [Port No. (FETCH)] performs communication in OP Communication. Port No. that is set to [Port No. (WRITE)] is not used.
 - Set the "Timeout" value to "3" (sec) or more.
-

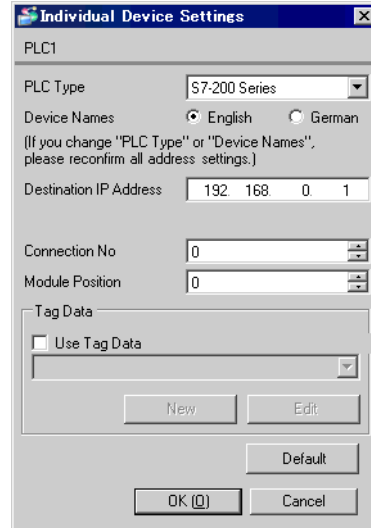
◆ Device Settings

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] . To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

- For GP3000, LT3000, or GP-4100 Series



- For other series that are not listed to the left



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

■ External Device Settings

Use the ladder software (STEP 7 Micro/Win32) for communication settings of the External Device. Please refer to the manual of the External Device for details.

- (1) Start up the ladder software.
- (2) From the [Tool] menu, select [Ethernet Wizard].
- (3) Click [Next].
- (4) Click [Read Module] to detect the installed Ethernet module.
- (5) Enter the [Position] value of the detected module in [Module Position], and then click [Next].
- (6) Set [IP Address] and [Subnet Mask], and then click [Next].
- (7) Enter "1" (the number of the Display to be connected) in "Number of connections to configure for this module.", and then click [Next].
- (8) Follow the steps below to set the Display, and then click [OK].
 - Select "This is a Server Connection" to connect the External Device to the Display.
 - In the "Local Properties (Server)" area, select "Accept all connection requests." to allow connections from all IP addresses.
 - In the "Remote Properties (Client)" area, enter "10.00" in "TSAP".
 - Clear the "Enable the Keep Alive function for this connection." check box because the Display does not support KeepAlive.

NOTE • The connection number is displayed in this dialog box. If the connection number is "1", for example, [Connection 1] is displayed.

- (9) Click [Next].
- (10) To save the module configuration, set the memory address of the External Device, and then click [Next].
- (11) Click [Finish].
- (12) Click [Yes] for the confirmation message.
- (13) Select [Save] from [File], and download the configuration to the External Device.

◆ Notes

- Check with your network administrator about the IP address. Do not duplicate IP addresses.
- The subroutine "ETH0_CTRL" must be called by the ladder program every scan.
- When the Display is turned off and on again during communication with the External Device or is switched to offline mode and then back to online mode, it may take several tens of seconds before the communication is resumed.

3.4 Setting Example 4

■ GP-Pro EX Settings

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer Series Port

Text Data Mode [Change](#)

Communication Settings

Port No. (FETCH) Auto

(WRITE)

Timeout (sec)

Retry

Wait To Send (ms)

Device-Specific Settings


Allowable Number of Devices/PLCs [Add Device](#)

| No. | Device Name | Settings |
|-------------------------------------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <input type="button" value="Up"/> 1 <input type="button" value="Down"/> | <input type="text" value="PLC1"/> | <input type="text" value="PLC Type=S7-1200 Series, Device Names=English, De"/> <input type="button" value="Add Indirect Device"/> |

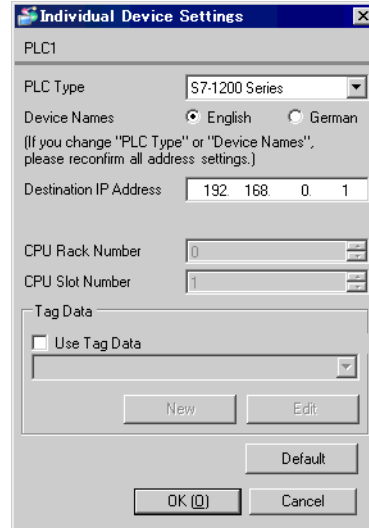
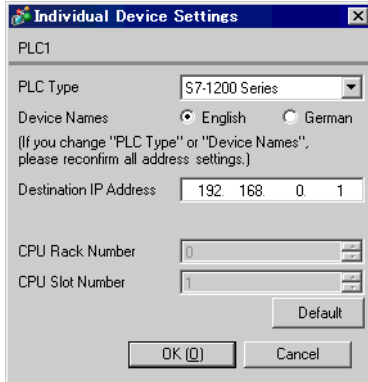
NOTE

- Port No. that is set to [Port No. (FETCH)] performs communication in OP Communication. Port No. that is set to [Port No. (WRITE)] is not used.
- Set the "Timeout" value to "3" (sec) or more.

◆ Device Settings

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] . To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

- For GP3000, LT3000, or GP-4100 Series
- For other series that are not listed to the left



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

■ External Device Settings

Use the ladder software (STEP 7 BASIC) to configure the External Device communication settings. Please refer to the External Device manual for details.

- (1) Start up the ladder software.
- (2) Create a project and select the External Device.
- (3) Select the PROFINET interface on the CPU and display the setup screen.
- (4) Select [Ethernet address] and set up as follows.

| Setup Items | Setting Value |
|-------------|---------------|
| IP address | 192.168.0.1 |
| Subnet mask | 255.255.255.0 |

- (5) In the project tree, select [Device configuration].
- (6) In the [General] tab, select [Protection]. Select the [Permit access with PUT/GET communication from remote partner] check box, and click [OK].
- (7) Save and transfer the project to the External Device.

3.5 Setting Example 5

■ GP-Pro EX Settings

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer: Siemens AG Series: SIMATIC S7 Ethernet Port: Ethernet (TCP)

Text Data Mode: 1 [Change](#)

Communication Settings

Port No. (FETCH): 1024 Auto

(WRITE): 1025

Timeout: 3 (sec)

Retry: 0

Wait To Send: 0 (ms) [Default](#)


Device-Specific Settings

Allowable Number of Devices/PLCs: 16 [Add Device](#)

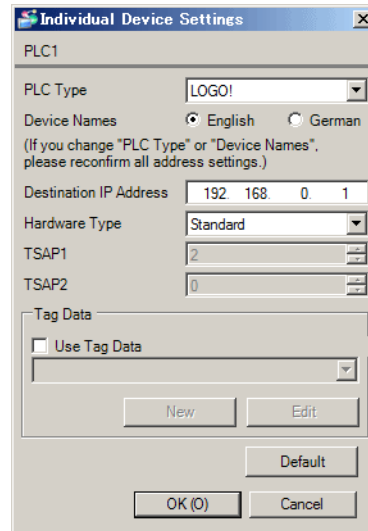
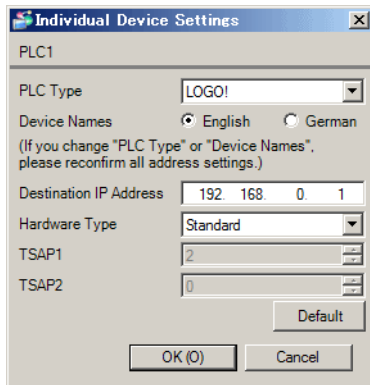
| No. | Device Name | Settings | Add Indirect Device |
|-----|-------------|---------------------------------------------------|-------------------------------------|
| 1 | PLC1 | PLC Type=LOGO!, Device Names=English, Destination | |

-
- NOTE**
- Port No. that is set to [Port No. (FETCH)] performs communication in OP Communication. Port No. that is set to [Port No. (WRITE)] is not used.
 - Set the "Timeout" value to "3" (sec) or more.
-

◆ Device Settings

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] . To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

- For GP3000, LT3000, or GP-4100 Series
- For other series that are not listed to the left



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

■ External Device Settings

Use the ladder software (LOGO!Soft Comfort V7.0) to configure the External Device communication settings. Please refer to the External Device manual for details.

- (1) Start up the ladder software.
- (2) Create the ladder diagram.
- (3) From the [Tools] menu select [Ethernet connections], and define the setup items as follows:

| Setup Items | Setting Value |
|-------------|---------------|
| IP address | 192.168.0.1 |
| Subnet mask | 255.255.255.0 |
| Gateway | 192.168.0.10 |

- (4) From [Peer-to-Peer Connections], right-click [Ethernet Connections] and from the shortcut menu select [Add Connection].
- (5) Double-click the added connection and select [Server Connection].
- (6) In [Local Properties (Server)], select the [Connect with an Operator Panel (OP)] and [Accept all connection requests] check boxes. In [Remote Properties (Client)], set [TSAP] to "02.00".
- (7) Click [OK] to close the dialog box.
- (8) Update the Parameter VM Mapping and then download the communication setting to the External Device.

3.6 Setting Example 6

■ GP-Pro EX Settings

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer Series Port

Text Data Mode [Change](#)

Communication Settings

Port No. (FETCH) Auto

(WRITE)

Timeout (sec)

Retry

Wait To Send (ms)

Device-Specific Settings


Allowable Number of Devices/PLCs [Add Device](#)

| No. | Device Name | Settings |
|------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <input type="button" value="↓"/> 1 | <input type="text" value="PLC1"/> | <input type="text" value="PLC Type=S7-1200 Series, Device Names=English, De"/> <input type="button" value="Add Indirect Device"/> |

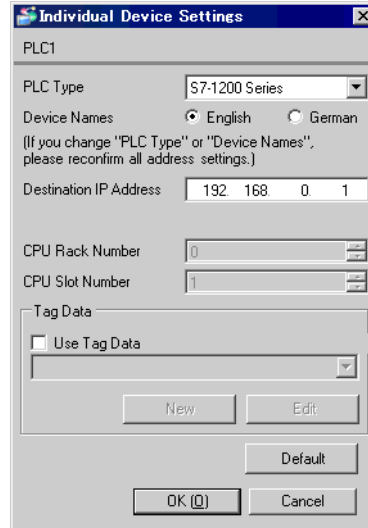
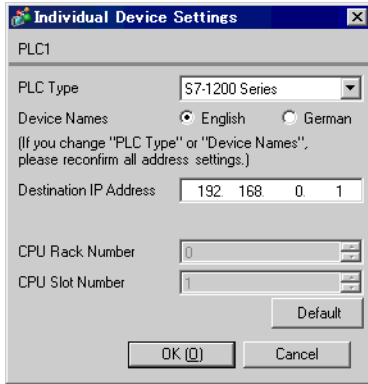
NOTE

- Port No. that is set to [Port No. (FETCH)] performs communication in OP Communication. Port No. that is set to [Port No. (WRITE)] is not used.
- Set the "Timeout" value to "3" (sec) or more.

◆ Device Settings

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] . To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

- For GP3000, LT3000, or GP-4100 Series
- For other series that are not listed to the left



◆ Notes

- To use a S7-1500 Series device, from the [PLC Type] list select [S7-1200 Series].
- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

■ External Device Settings

Use ladder software (STEP 7 Professional) to define External Device communication settings. Please refer to the External Device manual for details.

- (1) Start the ladder software.
- (2) Create a project and select the External Device.
- (3) For CPU select the PROFINET interface and display the setup screen.
- (4) Select [Ethernet address] and define the settings as follows.

| Setup Items | Setting Value |
|-------------|---------------|
| IP address | 192.168.0.1 |
| Subnet mask | 255.255.255.0 |

- (5) In the project tree, right-click the data block and select [Properties].
- (6) In the [General] tab, select [Attributes]. Clear the [Optimized block access] check box, and click [OK]. Clear the check boxes of all data blocks.
- (7) In the project tree, select [Device configuration].
- (8) In the [General] tab, select [Protection]. Select the [Permit access with PUT/GET communication from remote partner] check box, and click [OK].
- (9) Set the data block, and then compile the project.
- (10) Save and transfer the project to the External Device.

When you compile the project, an offset is mapped to each element in the data block.

Specify the addresses as follows.

Example: When the following offsets are applied to elements of data block [DB2].

| Name | Data type | Offset | Address notation of GP-Pro EX |
|-------|-----------|--------|-------------------------------|
| Data1 | Bool | 0.0 | DB00002.DBX00000.0 |
| Data2 | Word | 2.0 | DB00002.DBW00002 |
| Data3 | DWord | 4.0 | DB00002.DBW00004 |

3.7 Setting Example 7

■ GP-Pro EX Settings

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer Series Port

Text Data Mode [Change](#)

Communication Settings

Port No. (FETCH) Auto

(WRITE)

Timeout (sec)

Retry

Wait To Send (ms)

Device-Specific Settings


Allowable Number of Devices/PLCs [Add Device](#)

| No. | Device Name | Settings |
|--------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <input type="button" value="Add"/> 1 | <input type="text" value="PLC1"/> | <input type="text" value="PLC Type=LOGO!,Device Names=English,Destination"/> <input type="button" value="Add Indirect Device"/> |

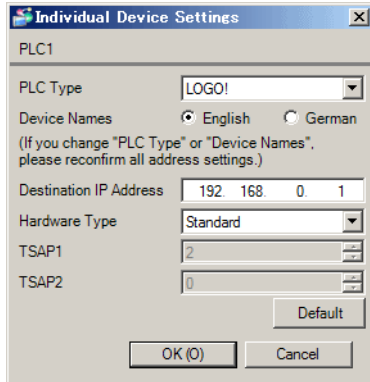
NOTE

- Port No. that is set to [Port No. (FETCH)] performs communication in OP Communication. Port No. that is set to [Port No. (WRITE)] is not used.
- Set the "Timeout" value to "3" (sec) or more.

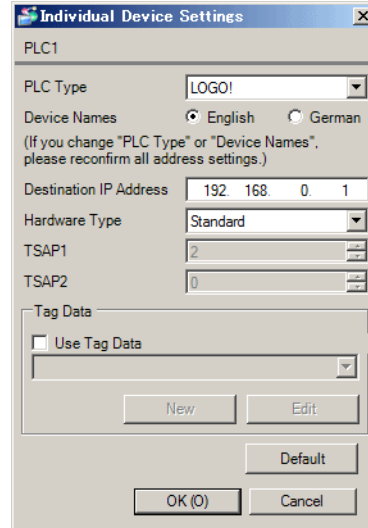
◆ Device Settings

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] . To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

- For GP3000, LT3000, or GP-4100 Series



- For other series that are not listed to the left



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

■ External Device Settings

Use the ladder software (LOGO!Soft Comfort V8.0) to configure the External Device communication settings. Please refer to the External Device manual for details.

- (1) Start up the ladder software.
- (2) Create the ladder diagram.
- (3) From the [Tools] menu select [Ethernet connections], and define the setup items as follows:

| Setup Items | Setting Value |
|-----------------|---------------|
| IP address | 192.168.0.1 |
| Subnet Mask | 255.255.255.0 |
| Default gateway | 192.168.0.10 |

- (4) From [Ethernet connection], right-click [Ethernet Connections] and from the shortcut menu select [Add server connection].
- (5) Double-click the added connection.
- (6) In [Local Properties (Server)], select the [Accept all connection requests] check box. In [Remote Properties (Client)], set [TSAP] to "02.00".
- (7) Click [OK] to close the dialog box.
- (8) Update the Parameter VM Mapping and then download the communication setting to the External Device.

3.8 Setting Example 8

■ GP-Pro EX Settings

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer: Siemens AG Series: SIMATIC S7 Ethernet Port: Ethernet (TCP)

Text Data Mode: 1 [Change](#)

Communication Settings

Port No. (FETCH): 1024 Auto

(WRITE): 1025

Timeout: 3 (sec)

Retry: 0

Wait To Send: 0 (ms) [Default](#)

Device-Specific Settings


Allowable Number of Devices/PLCs: 16 [Add Device](#)

| No. | Device Name | Settings |
|-----|-------------|---------------------------------------------------|
| 1 | PLC1 | PLC Type=LOGO!, Device Names=English, Destination |

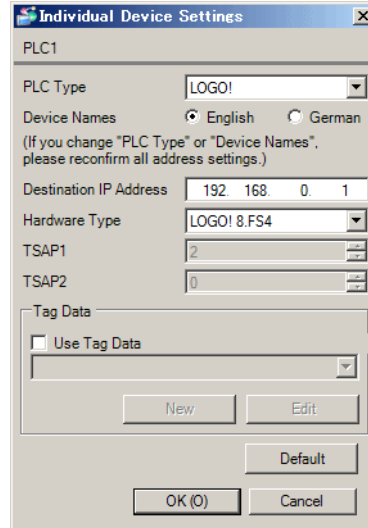
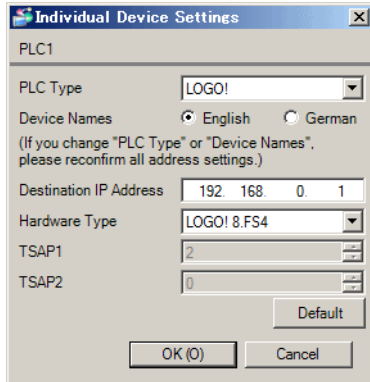
[Add Indirect Device](#)

-
- NOTE**
- Port No. that is set to [Port No. (FETCH)] performs communication in OP Communication. Port No. that is set to [Port No. (WRITE)] is not used.
 - Set the "Timeout" value to "3" (sec) or more.
-

◆ Device Settings

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] . To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

- For GP3000, LT3000, or GP-4100 Series
- For other series that are not listed to the left



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device for IP address in Device-specific settings.
- You need to set IP address on the Display in the offline mode of the Display.

■ External Device Settings

Use the ladder software (LOGO!Soft Comfort V8.1) to configure the External Device communication settings. Please refer to the External Device manual for details.

- (1) Start up the ladder software.
- (2) Create your ladder diagram.
- (3) From the [Tools] menu select [Ethernet connections], and configure the setup items as follows:

| Setup Items | Setting Value |
|-----------------|---------------|
| IP address | 192.168.0.1 |
| Subnet Mask | 255.255.255.0 |
| Default gateway | 192.168.0.10 |

- (4) From [Ethernet connection], right-click [Ethernet Connections] and from the shortcut menu select [Add server connection].
- (5) Double-click the added connection.
- (6) In [Local Properties (Server)], select the [Accept all connection requests] check box. In [Remote Properties (Client)], set [TSAP] to "02.00".
- (7) Click [OK] to close the dialog box.
- (8) Update the Parameter VM Mapping and then download the communication settings to the External Device.

4 Setup Items

Set communication settings of the Display with GP-Pro EX or in offline mode of the Display.

The setting of each parameter must be identical to that of External Device.

☞ "3 Communication Settings" (page 7)

NOTE • Set the Display's IP address in offline mode.

Cf. Maintenance/Troubleshooting Guide "Ethernet Settings"

4.1 Setup Items in GP-Pro EX

■ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer: Siemens AG Series: SIMATIC S7 Ethernet Port: Ethernet (TCP)

Text Data Mode: 1 [Change](#)

Communication Settings

Port No. (FETCH): 1024 Auto
(WRITE): 1025

Timeout: 3 (sec)

Retry: 0

Wait To Send: 0 (ms) [Default](#)

Device-Specific Settings


Allowable Number of Devices/PLCs: 16 [Add Device](#)

| No. | Device Name | Settings | Add Indirect Device |
|-----|-------------|--------------------------------------------------|---------------------|
| 1 | PLC1 | PLC Type=S7-300/400 Series, Device Names=English | + |

| Setup Items | Setup Description |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port No. | Use an integer from 1024 to 65535 to enter FETCH port number and WRITE number of display. If a check is put in [Auto], port number is set automatically. When the connection type is OP Communication, the port number set to [Port No. (FETCH)] implements communication. |
| Timeout | Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device. |
| Retry | In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command. |
| Wait To Send | Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands. |

NOTE • Refer to the GP-Pro EX Reference Manual for Indirect Device.

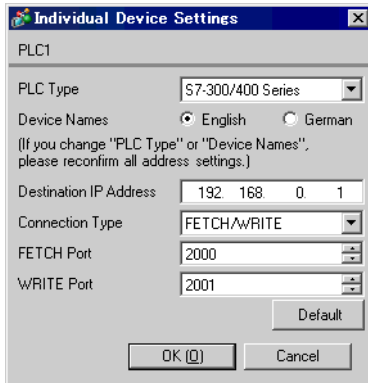
■ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] . To connect multiple External Devices, from [Device-Specific Settings] in the [Device/PLC] window, click [Add Device] to add another External Device.

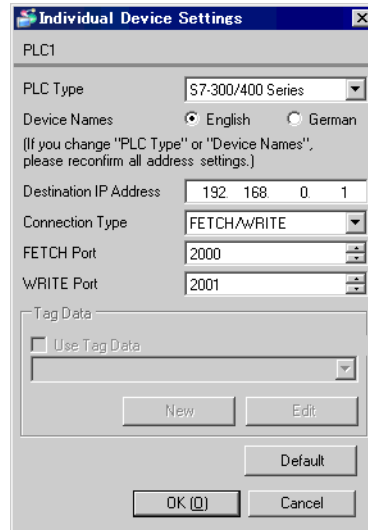
Setting contents of device setting differs depending on the connection type (SIMATIC S7-300/400 Series only).

<S7-300/400 Series Connection type: FETCH/WRITE>

- For GP3000, LT3000, or GP-4100 Series



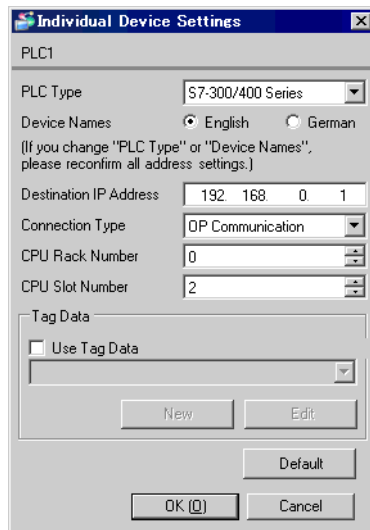
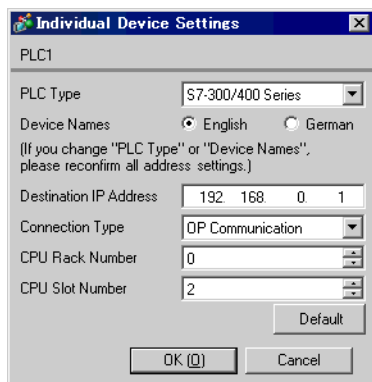
- For other series that are not listed to the left



| Setup Items | Setup Description |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PLC Type | Select the External Device series. |
| Device Names | Select the display language of device names, either English or German. |
| Destination IP Address | Set IP address of the External Device. <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;">NOTE</div> <ul style="list-style-type: none"> • Check with a network administrator about IP address. Do not set the duplicate IP address. |
| Connection Type | Select the connection type. |
| FETCH Port | Use an integer from 1024 to 65535 to enter the FETCH port No. of the External Device. |
| WRITE Port | Use an integer from 1024 to 65535 to enter the WRITE port No. of the External Device. |

<S7-300/400 Series Connection type: OP Communication>

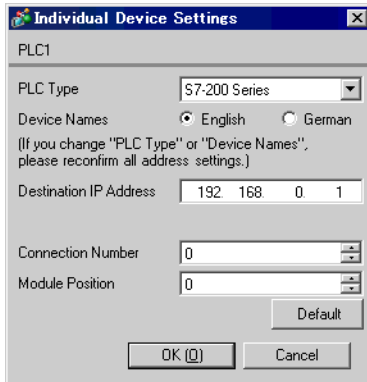
- For GP3000, LT3000, or GP-4100 Series
- For other series that are not listed to the left



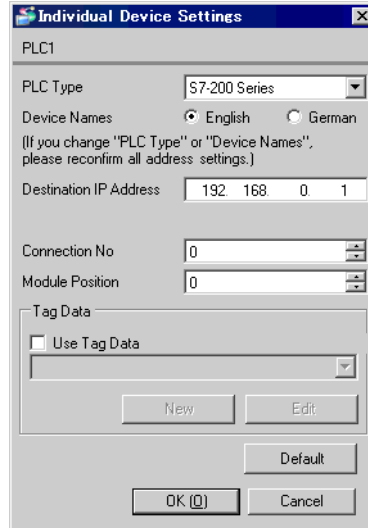
| Setup Items | Setup Description |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PLC Type | Select the External Device series. |
| Device Names | Select the display language of device names, either English or German. |
| Destination IP Address | Set IP address of the External Device. <div style="border: 1px solid black; padding: 2px; display: inline-block;">NOTE</div> <ul style="list-style-type: none"> • Check with a network administrator about IP address. Do not set the duplicate IP address. |
| Connection Type | Select the connection type. |
| CPU Rack Number | Use an integer from 0 to 7 to enter the CPU rack number of the External Device. |
| CPU Slot Number | Use an integer from 0 to 31 to enter the CPU slot number of the External Device. |
| Use Tag Data | Select the check box when using tag data (symbol addresses). This will enable you to select the tags you want to use. Select [New] when you want to create new tag data, or update existing tag data. Select [Edit] when you want to add new tags to existing tag data. ☞ "5.7 When Using a Tag" (page 45) |

<S7-200 Series>

- For GP3000, LT3000, or GP-4100 Series



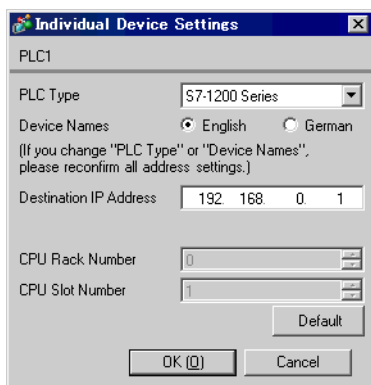
- For other series that are not listed to the left



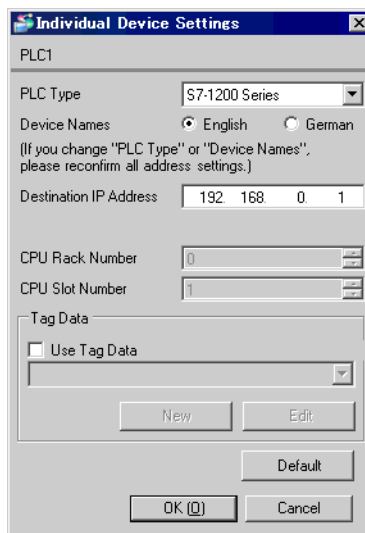
| Setup Items | Setup Description |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PLC Type | Select the External Device series. |
| Device Names | Select the display language of device names, either English or German. |
| Destination IP Address | Set IP address of the External Device. NOTE <ul style="list-style-type: none"> • Check with a network administrator about IP address. Do not set the duplicate IP address. |
| Connection Number | Use an integer from 0 to 7 to enter the connection number of the External Device. |
| Module Position | Use an integer from 0 to 6 to enter the module position of the External Device. |
| Use Tag Data | Select the check box when using tag data (symbol addresses). This will enable you to select the tags you want to use. Select [New] when you want to create new tag data, or update existing tag data. Select [Edit] when you want to add new tags to existing tag data. ☞ "5.7 When Using a Tag" (page 45) |

<S7-1200/1500 Series>

- For GP3000, LT3000, or GP-4100 Series



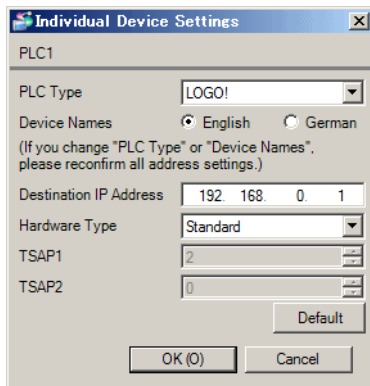
- For other series that are not listed to the left



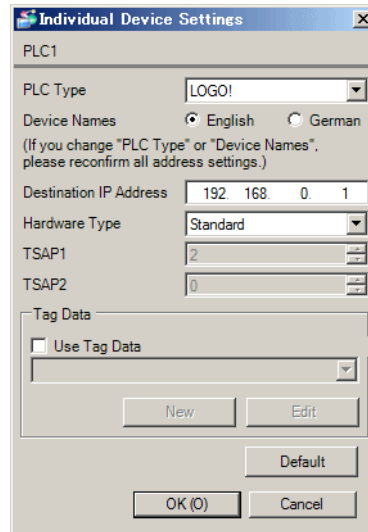
| Setup Items | Setup Description |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PLC Type | Select the External Device series. |
| Device Names | Select the display language of device names, either English or German. |
| Destination IP Address | Set IP address of the External Device. NOTE <ul style="list-style-type: none"> • Check with a network administrator about IP address. Do not set the duplicate IP address. |
| Use Tag Data | Select the check box when using tag data (symbol addresses). This will enable you to select the tags you want to use. Select [New] when you want to create new tag data, or update existing tag data. Select [Edit] when you want to add new tags to existing tag data. ☞ "5.7 When Using a Tag" (page 45) |

<LOGO! Series>

- For GP3000, LT3000, or GP-4100 Series



- For other series that are not listed to the left



| Setup Items | Setup Description |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PLC Type | Select the External Device series. |
| Device Names | Select the display language of device names, either English or German. |
| Destination IP Address | Set IP address of the External Device. NOTE <ul style="list-style-type: none"> • Check with a network administrator about IP address. Do not set the duplicate IP address. |
| Hardware Type | Select the hardware type of the used External Device. |
| Use Tag Data | Select the check box when using tag data (symbol addresses). This will enable you to select the tags you want to use. Select [New] when you want to create new tag data, or update existing tag data. Select [Edit] when you want to add new tags to existing tag data. ☞ "5.7 When Using a Tag" (page 45) |

4.2 Setup Items in Offline Mode

NOTE • Refer to the Maintenance/Troubleshooting guide for information on how to enter offline mode or about the operation.

Cf. Maintenance/Troubleshooting Guide "Offline Mode"

■ Communication Settings

To display the setting screen, touch [Device/PLC Settings] from [Peripheral Settings] in offline mode. Touch the External Device you want to set from the displayed list.

| Comm. | Device | | | |
|---------------------|-----------------------------|---------------------------------------|------------------------|-----|
| SIMATIC S7 Ethernet | | [TCP] | Page 1/1 | |
| Port No. (FETCH) | <input type="radio"/> Fixed | <input checked="" type="radio"/> Auto | 1024 | ▼ ▲ |
| (WRITE) | | | 1025 | ▼ ▲ |
| Timeout(s) | | | 3 | ▼ ▲ |
| Retry | | | 0 | ▼ ▲ |
| Wait To Send(ms) | | | 0 | ▼ ▲ |
| Exit | | Back | 2017/03/01 14:24:53 | |

| Setup Items | Setup Description |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port No. | Set the FETCH port No. and WRITE port No. of the Display. Select either [Fixed] or [Auto]. When you select [Fixed], use an integer from 1024 to 65535 to enter the port No. of the Display. When you select [Auto], the port No. will be automatically assigned regardless of the entered value. When the connection type is OP Communication, the port number set to [Port No. (FETCH)] implements communication. |
| Timeout (s) | Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device. |
| Retry | In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command. |
| Wait To Send (ms) | Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands. |

■ Device Setting

To display the setting screen, touch [Device/PLC Settings] from [Peripheral Settings]. Touch the External Device you want to set from the displayed list, and touch [Device].

| Comm. | Device | | | |
|------------------------|--------------------|----------|----------|------------------------|
| SIMATIC S7 Ethernet | | [TCP] | Page 1/1 | |
| Device/PLC Name [PLC1] | | | | |
| PLC TYPE | S7-300/400 English | | | |
| DEST IP ADDR | 192 168 0 1 | | | |
| CONNECTION TYPE | OP COMMUNICATION | | | |
| FETCH PORT NO. | | 2000 | ▼ | ▲ |
| WRITE PORT NO. | | 2001 | ▼ | ▲ |
| CPU RACK NO. | | 0 | ▼ | ▲ |
| CPU SLOT NO. | | 2 | ▼ | ▲ |
| CONNECTION NO. | | 0 | ▼ | ▲ |
| MODULE POSITION | | 0 | ▼ | ▲ |
| HARDWARE TYPE | | Standard | ▼ | |
| Exit | | Back | | 2017/03/01 14:25:01 |


| Setup Items | Setup Description |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device/PLC Name | Select the External Device for device setting. Device name is a title of External Device set with GP-Pro EX.(Initial value [PLC1]) |
| PLC TYPE | Display the PLC type. NOTE • Please make a change of the PLC type by [Device Setting] of GP-Pro EX. |
| DEST IP ADDR | Set IP address of the External Device. NOTE • Check with a network administrator about IP address. Do not set the duplicate IP address. |
| CONNECTION TYPE | Display the connection type. NOTE • Please make a change of the connection type by [Device Setting] of GP-Pro EX. |
| FETCH PORT NO. | Use an integer from 1024 to 65535 to enter the FETCH port No. of the External Device. Available only if the PLC type is "S7-300/400 Series". Valid only when the connection type is [FETH/WRITE]. |
| WRITE PORT NO. | Use an integer from 1024 to 65535 to enter the WRITE port No. of the External Device. Available only if the PLC type is "S7-300/400 Series". Valid only when the connection type is [FETH/WRITE]. |
| CPU RACK NO. | Use an integer from 0 to 7 to enter the rack number that External Device is mounted to. Available only if the PLC type is "S7-300/400 Series". Valid only when the connection type is [OP Communication]. |






| Setup Items | Setup Description |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU SLOT NO. | Use an integer from 0 to 31 to enter the slot number that External Device is mounted to. Available only if the PLC type is "S7-300/400 Series". Valid only when the connection type is [OP Communication]. |
| CONNECTION NO. | Use an integer from 0 to 7 to enter the connection number of the External Device. Available only if the PLC type is "S7-200 Series". |
| MODULE POSITION | Use an integer from 0 to 6 to enter the module position of the External Device. Available only if the PLC type is "S7-200 Series". |
| HARDWARE TYPE | Select the hardware type of the used External Device. |

5 Supported Device Addresses

Range of supported device address is shown in the table below. Please note that the actually supported range of the devices varies depending on the External Device to be used. Please check the actual range in the manual of your External Device.


5.1 S7-300/400 Series

 This address can be specified as system data area.


| Device | Bit Address | | Word Address | | 32 bits | Remarks |
|----------------------------------|--------------------------------------------|------------------------|----------------------------------------|----------------------|---------|----------------------------------------------------------------------------------------|
| | English | German | English | German | | |
| Data Block (OP Communication) | DB00001.DBX00000.0 - DB65535.DBX65535.7 | | DB00001.DBW00000 - DB65535.DBW65534 | | [H/L] |  |
| Data Block (FETCH/WRITE) | DB00001.DBX00000.0 - DB00255.DBX16383.7 | | DB00001.DBW00000 - DB00255.DBW16382 | | |  *1 |
| Input | I00000.0 - I00127.7 | E00000.0 - E00127.7 | IW00000 - IW00126 | EW00000 - EW00126 | |  *1 |
| Output | Q00000.0 - Q00127.7 | A00000.0 - A00127.7 | QW00000 - QW00126 | AW00000 - AW00126 | |  *1 |
| Marker | M00000.0 - M00255.7 | | MW00000 - MW00254 | | |  *1 |
| Timer | ----- | | T00000 - T00255 | | | *2 *3 |
| Counter | ----- | | C00000 - C00255 | Z00000 - Z00255 | | *2 *3 |





- *1 When the connection type is FETCH / WRITE, to write the bit address, the Display first reads the word address on the External Device. Next, the Display changes only the target bit from the word data, and writes the entire word back to the External Device.
If you change the word address value from the ladder program while the Display reads and writes the External Device data, the result may be incorrect.
- *2 Write disable.
- *3 Data Type varies depending on the connection type. When the connection type is OP Communication, Data Type is BCD. When it is FETCH/WRITE, Data Type is binary.

NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"
- Please refer to the precautions on manual notation for icons in the table.
 "Manual Symbols and Terminology"


5.2 S7-200 Series

 This address can be specified as system data area.


| Device | Bit Address | | Word Address | | 32 bits | Remarks |
|----------|---------------------|---------------------|-------------------|-------------------|------------|----------------------------------------------------------------------------------------|
| | English | German | English | German | | |
| Variable | V00000.0 - V10239.7 | | VW00000 - VW10238 | | H/L |  *2 |
| Input | I00000.0 - I00015.7 | E00000.0 - E00015.7 | IW00000 - IW00014 | EW00000 - EW00014 | |  *1 |
| Output | Q00000.0 - Q00015.7 | A00000.0 - A00015.7 | QW00000 - QW00014 | AW00000 - AW00014 | |  *2 |
| Marker | M00000.0 - M00031.7 | | MW00000 - MW00030 | | |  *2 |
| Timer | ----- | | T00000 - T00255 | | | *3 |
| Counter | ----- | | C00000 - C00255 | Z00000 - Z00255 | | *3 |





- *1 Writing to the addresses IW0 to IW2 is disabled, depending on the CPU type. These addresses are reserved for onboard I/O.
- *2 Only when the External Device is in the EXECUTION mode, writing to the output device is enabled. When the External Device switches to the STOP mode, the output device is reset.
- *3 Write disable.

NOTE


- Please refer to the GP-Pro EX Reference Manual for system data area.
Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"
- Please refer to the precautions on manual notation for icons in the table.
 "Manual Symbols and Terminology"

5.3 S7-1200 Series


 This address can be specified as system data area.

| Device | Bit Address | | Word Address | | 32 bits | Remarks |
|------------|-----------------------------------------|---------------------|-------------------------------------|-------------------|---------|---------------------------------------------------------------------------------------|
| | English | German | English | German | | |
| Data Block | DB00001.DBX00000.0 - DB65535.DBX65535.7 | | DB00001.DBW00000 - DB65535.DBW65534 | | H/L |  2 |
| Input | I00000.0 - I01023.7 | E00000.0 - E01023.7 | IW00000 - IW01022 | EW00000 - EW01022 | |  2 |
| Output | Q00000.0 - Q01023.7 | A00000.0 - A01023.7 | QW00000 - QW01022 | AW00000 - AW01022 | |  2 |
| Marker | M00000.0 - M08191.7 | | MW00000 - MW08190 | | |  2 |


NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"
- Please refer to the precautions on manual notation for icons in the table.
 "Manual Symbols and Terminology"


5.4 LOGO!7 Series

 This address can be specified as system data area.

| Device | | Bit Address | | Word Address | | 32 bits | Remarks |
|----------|-------|---------------------|---------------------|-------------------|-------------------|---------|---------|
| | | English | German | English | German | | |
| Variable | | V00000.0 - V00849.7 | | VW00000 - VW00848 | | [H/L] | ± 2 |
| Input | Read | I00000.0 - I00003.7 | E00000.0 - E00003.7 | IW00000 - IW00002 | EW00000 - EW00002 | | ± 2 |
| | Write | I00000.0 - I00002.7 | E00000.0 - E00002.7 | | | | ± 2 |
| Output | | Q00000.0 - Q00001.7 | A00000.0 - A00001.7 | QW00000 | AW00000 | | ± 2 |
| Marker | | M00000.0 - M00003.7 | | MW00000 - MW00002 | | ± 2 | |


- NOTE**
- Please refer to the GP-Pro EX Reference Manual for system data area.
Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"
 - Please refer to the precautions on manual notation for icons in the table.
 "Manual Symbols and Terminology"

5.5 LOGO!8 Series


 This address can be specified as system data area.

| Device | Bit Address | Word Address | 32 bits | Remarks |
|----------|----------------------|-------------------|---------|-------------------|
| Variable | V00000.0 - V00849.7 | VW00000 - VW00848 | [H/L] | ± 2 |
| Input | I000000.0 - I00003.7 | IW00000 - IW00002 | | ± 2 ^{*1} |
| Output | Q00000.0 - Q00001.7 | QW00000 - QW00000 | | ± 2 |
| Marker | M00000.0 - M00003.7 | MW00000 - MW00002 | | ± 2 |

*1 Write disable.


- NOTE**
- Please refer to the GP-Pro EX Reference Manual for system data area.
Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"
 - Please refer to the precautions on manual notation for icons in the table.
 "Manual Symbols and Terminology"

5.6 S7-1500 Series

 This address can be specified as system data area.


| Device | Bit Address | | Word Address | | 32 bits | Remarks |
|----------------------------------|--------------------------------------------|------------------------|----------------------------------------|----------------------|---------|---------|
| | English | German | English | German | | |
| Data Block (OP Communication) | DB00001.DBX00000.0 - DB59999.DBX65533.7 | | DB00001.DBW00000 - DB59999.DBW65532 | | [H/L] | [+ 2] |
| Input | I00000.0 - I32767.7 | E00000.0 - E32767.7 | IW00000 - IW32766 | EW00000 - EW32766 | | [+ 2] |
| Output | Q00000.0 - Q32767.7 | A00000.0 - A32767.7 | QW00000 - QW32766 | AW00000 - AW32766 | | [+ 2] |
| Marker | M00000.0 - M16383.7 | | MW00000 - MW16382 | | | [+ 2] |

NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"
- Please refer to the precautions on manual notation for icons in the table.
 "Manual Symbols and Terminology"

5.7 When Using a Tag

■ S7-300/400 Series

 This address can be specified as system data area.

| Device | | Bit Address | Word Address | 32 bits | Remarks |
|---------------|------------|------------------------------------------------------------------------------|-----------------------------------------------------------------------|------------|---------|
| BOOL | Single Tag | <TAGNAME> | | | |
| | 1D Array | <TAGNAME>[xl] - <TAGNAME>[xh] | | | |
| | 2D Array | <TAGNAME>[xl,y1] - <TAGNAME>[xh,yh] | | | |
| | 3D Array | <TAGNAME>[xl,y1,z1] - <TAGNAME>[xh,yh,zh] | | | *1 *2 |
| | 4D Array | <TAGNAME>[xl,y1,z1,w1] - <TAGNAME>[xh,yh,zh,wh] | | | |
| | 5D Array | <TAGNAME>[xl,y1,z1,v1,w1] - <TAGNAME>[xh,yh,zh,vh,wh] | | | |
| | 6D Array | <TAGNAME>[xl,y1,z1,ul,v1,w1] - <TAGNAME>[xh,yh,zh,uh,vh, wh] | | | |
| BYTE | Single Tag | <TAGNAME>.00 - <TAGNAME>.07 | <TAGNAME> | | |
| | 1D Array | <TAGNAME>[xl].00 - <TAGNAME>[xh].07 | <TAGNAME>[xl] - <TAGNAME>[xh] | | |
| | 2D Array | <TAGNAME>[xl,y1].00 - <TAGNAME>[xh,yh].07 | <TAGNAME>[xl,y1] - <TAGNAME>[xh,yh] | | |
| | 3D Array | <TAGNAME>[xl,y1,z1].00 - <TAGNAME>[xh,yh,zh].07 | <TAGNAME>[xl,y1,z1] - <TAGNAME>[xh,yh,zh] | | |
| | 4D Array | <TAGNAME>[xl,y1,z1,w1].00 - <TAGNAME>[xh,yh,zh,wh].07 | <TAGNAME>[xl,y1,z1,w1] - <TAGNAME>[xh,yh,zh,wh] | H/L | *1 *2 |
| | 5D Array | <TAGNAME>[xl,y1,z1,v1,w1].0 0 - <TAGNAME>[xh,yh,zh,vh,wh] .07 | <TAGNAME>[xl,y1,z1,v1,w1] - <TAGNAME>[xh,yh,zh,vh,wh] | | |
| | 6D Array | <TAGNAME>[xl,y1,z1,ul,v1,w1] .00 - <TAGNAME>[xh,yh,zh,uh,vh, wh].07 | <TAGNAME>[xl,y1,z1,ul,v1,w1] - <TAGNAME>[xh,yh,zh,uh,vh, wh] | | |
| SINT USINT | Single Tag | <TAGNAME>.00 - <TAGNAME>.07 | <TAGNAME> | H/L | *1 |

| Device | | Bit Address | Word Address | 32 bits | Remarks |
|------------|------------|--------------------------------------------------------------|--------------------------------------------------------|------------|----------|
| INT WORD | Single Tag | <TAGNAME>.00 - <TAGNAME>.15 | <TAGNAME> | H/L | *1 *2 *3 |
| | 1D Array | <TAGNAME>[xl].00 - <TAGNAME>[xh].15 | <TAGNAME>[xl] - <TAGNAME>[xh] | | |
| | 2D Array | <TAGNAME>[xl,y].00 - <TAGNAME>[xh,yh].15 | <TAGNAME>[xl,y] - <TAGNAME>[xh,yh] | | |
| | 3D Array | <TAGNAME>[xl,y,z].00 - <TAGNAME>[xh,yh,zh].15 | <TAGNAME>[xl,y,z] - <TAGNAME>[xh,yh,zh] | | |
| | 4D Array | <TAGNAME>[xl,y,z,w].00 - <TAGNAME>[xh,yh,zh,wh].15 | <TAGNAME>[xl,y,z,w] - <TAGNAME>[xh,yh,zh,wh] | | |
| | 5D Array | <TAGNAME>[xl,y,z,v,w].00 - <TAGNAME>[xh,yh,zh,vh,wh].15 | <TAGNAME>[xl,y,z,v,w] - <TAGNAME>[xh,yh,zh,vh,wh] | | |
| | 6D Array | <TAGNAME>[xl,y,z,u,v,w].00 - <TAGNAME>[xh,yh,zh,uh,vh,wh].15 | <TAGNAME>[xl,y,z,u,v,w] - <TAGNAME>[xh,yh,zh,uh,vh,wh] | | |
| UINT | Single Tag | <TAGNAME>.00 - <TAGNAME>.15 | <TAGNAME> | H/L | *1 |
| DINT DWORD | Single Tag | <TAGNAME>.00 - <TAGNAME>.31 | <TAGNAME> | H/L | *1 *2 |
| | 1D Array | <TAGNAME>[xl].00 - <TAGNAME>[xh].31 | <TAGNAME>[xl] - <TAGNAME>[xh] | | |
| | 2D Array | <TAGNAME>[xl,y].00 - <TAGNAME>[xh,yh].31 | <TAGNAME>[xl,y] - <TAGNAME>[xh,yh] | | |
| | 3D Array | <TAGNAME>[xl,y,z].00 - <TAGNAME>[xh,yh,zh].31 | <TAGNAME>[xl,y,z] - <TAGNAME>[xh,yh,zh] | | |
| | 4D Array | <TAGNAME>[xl,y,z,w].00 - <TAGNAME>[xh,yh,zh,wh].31 | <TAGNAME>[xl,y,z,w] - <TAGNAME>[xh,yh,zh,wh] | | |
| | 5D Array | <TAGNAME>[xl,y,z,v,w].00 - <TAGNAME>[xh,yh,zh,vh,wh].31 | <TAGNAME>[xl,y,z,v,w] - <TAGNAME>[xh,yh,zh,vh,wh] | | |
| | 6D Array | <TAGNAME>[xl,y,z,u,v,w].00 - <TAGNAME>[xh,yh,zh,uh,vh,wh].31 | <TAGNAME>[xl,y,z,u,v,w] - <TAGNAME>[xh,yh,zh,uh,vh,wh] | | |
| UDINT | Single Tag | <TAGNAME>.00 - <TAGNAME>.31 | <TAGNAME> | H/L | *1 |

| Device | | Bit Address | Word Address | 32 bits | Remarks |
|-------------------------------------------|------------|-------------|-----------------------------------------------------------------------|------------|----------|
| DATE*4 REAL TIME TIME_OF_DA Y | Single Tag | - | <TAGNAME> | H/L | *1 *2 |
| | 1D Array | | <TAGNAME>[xl] - <TAGNAME>[xh] | | |
| | 2D Array | | <TAGNAME>[xl,yl] - <TAGNAME>[xh,yh] | | |
| | 3D Array | | <TAGNAME>[xl,yl,zl] - <TAGNAME>[xh,yh,zh] | | |
| | 4D Array | | <TAGNAME>[xl,yl,zl,wl] - <TAGNAME>[xh,yh,zh,wh] | | |
| | 5D Array | | <TAGNAME>[xl,yl,zl,vl,wl] - <TAGNAME>[xh,yh,zh,vh,wh] | | |
| | 6D Array | | <TAGNAME>[xl,yl,zl,ul,vl,wl] - <TAGNAME>[xh,yh,zh,uh,vh, wh] | | |
| DATE_AND_ TIME | Single Tag | - | <TAGNAME> | - | *1 *2 *5 |
| | 1D Array | | <TAGNAME>[xl] - <TAGNAME>[xh] | | |
| | 2D Array | | <TAGNAME>[xl,yl] - <TAGNAME>[xh,yh] | | |
| | 3D Array | | <TAGNAME>[xl,yl,zl] - <TAGNAME>[xh,yh,zh] | | |
| | 4D Array | | <TAGNAME>[xl,yl,zl,wl] - <TAGNAME>[xh,yh,zh,wh] | | |
| | 5D Array | | <TAGNAME>[xl,yl,zl,vl,wl] - <TAGNAME>[xh,yh,zh,vh,wh] | | |
| | 6D Array | | <TAGNAME>[xl,yl,zl,ul,vl,wl] - <TAGNAME>[xh,yh,zh,uh,vh, wh] | | |

| Device | | Bit Address | Word Address | 32 bits | Remarks |
|--------|------------|-------------|-------------------------------------------------------------------|---------|---------|
| STRING | Single Tag | | <TAGNAME> | | *1 *2 |
| | 1D Array | | <TAGNAME>[xl] - <TAGNAME>[xh] | | |
| | 2D Array | | <TAGNAME>[xl,yl] - <TAGNAME>[xh,yh] | | |
| | 3D Array | | <TAGNAME>[xl,yl,zl] - <TAGNAME>[xh,yh,zh] | | |
| | 4D Array | | <TAGNAME>[xl,yl,zl,wl] - <TAGNAME>[xh,yh,zh,wh] | | |
| | 5D Array | | <TAGNAME>[xl,yl,zl,vl,wl] - <TAGNAME>[xh,yh,zh,vh,wh] | | |
| | 6D Array | | <TAGNAME>[xl,yl,zl,ul,vl,wl] - <TAGNAME>[xh,yh,zh,uh,vh,wh] | | |

*1 <TAGNAME>: For structures, Tag Name includes the structure name. The maximum length of the Tag Name is 255 characters, which includes delimiters and the element number.

Example

BOOL type single tag: "BOOLS YMBOL"
 BOOL type 1D array: "BOOL1D[10]"
 WORD type 2D array: "WORD2D[10,10]"
 UDINT type 3D array: "UDINT[0,1,2]"
 User-defined structure: "STRUCT001.STRINGSYM"

You cannot start names with any of the following text:


LS, USR, SCR, PRT

- *2 The number of elements for each dimension is shown from "l" (Number of minimum element) to "h" (Number of maximum element).
- *3 By default, the system data area is set up with 16 words. Even if you want to use less than 16 words for the system data area, you have to map a 16 word (or larger) array tag and then select the items for the system data area.
- *4 Handled as 16-bit devices in the External Device, but as 32-bit devices in GP-Pro EXBLUE.
- *5 64-bit device


IMPORTANT

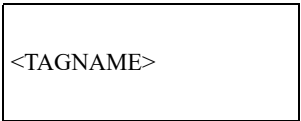



- To use tags, you need to import Tag Data (symbol addresses). For information about how to import and the upper limit for capacity of tag data, please refer to GP-Pro EX Reference Manual. Cf. GP-Pro EX Reference Manual, "Using Device/PLC Tags"
- The tag import feature is supported in GP-Pro EX V3.01.000 or later (or in the case of GP-4*01TM, V3.10.000 or later).
- When the tag of the "S5TIME" data type is imported, the data type is changed to "WORD". When the tag of the "CHAR" data type is imported, the data type is changed to "STRING (CHAR)".

NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"
- Please refer to the precautions on manual notation for icons in the table.
 "Manual Symbols and Terminology"

■ S7-200/1200/1500/LOGO! Series

 This address can be specified as system data area.

| Device | | Bit Address | Word Address | 32 bits | Remarks |
|-------------------------------------------------------|------------|--------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------|
| BOOL | Single Tag | <TAGNAME> | - | - | *1 |
| BYTE SINT USINT | Single Tag | <TAGNAME>.00 - <TAGNAME>.07 | <TAGNAME> | - | *1 |
| INT WORD UINT | Single Tag | <TAGNAME>.00 - <TAGNAME>.15 |  <TAGNAME> |  | *1 *2 |
| DINT DWORD UDINT | Single Tag | <TAGNAME>.00 - <TAGNAME>.31 | <TAGNAME> |  | *1 |
| DATE* ³ REAL TIME TIME_OF_DA Y | Single Tag | - | <TAGNAME> |  | *1 |
| DATE_AND_ TIME | Single Tag | - | <TAGNAME> | - | *1 *4 |
| STRING | Single Tag | - | <TAGNAME> | - | *1 |

*1 <TAGNAME>: For structures, Tag Name includes the structure name. The maximum length of the Tag Name is 255 characters, which includes delimiters and the element number.

Example:

BOOL type single tag: "BOOLSMBOL"
User-defined structure: "STRUCT001.STRINGSYM"

You cannot start names with any of the following text:
LS, USR, SCR, PRT

*2 Only one of the system data area items can be used.


*3 Handled as 16-bit devices in the External Device, but as 32-bit devices in GP-Pro EXBLUE.

*4 64-bit device

IMPORTANT

- You cannot import S7-200/1200/1500/LOGO! series tag data (symbol addresses).
- The tag import feature is supported in GP-Pro EX V3.01.000 or later (or in the case of GP-4*01TM, V3.10.000 or later).

NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)"
- Please refer to the precautions on manual notation for icons in the table.
 "Manual Symbols and Terminology"

6 Device Code and Address Code

Use device code and address code when you select "Device Type & Address" for the address type in data displays.

| Device | Device Name | | Device Code (HEX) | Address Code |
|------------|-------------|--------|----------------------|-------------------------------------------------------------------------|
| | English | German | | |
| Data Block | DB | DB | 0000 | (Data Block No. x 0x10000) + Value of (word address divided by 2) |
| Input | I | E | 0080 | Value of word address divided by 2 |
| Output | Q | A | 0081 | Value of word address divided by 2 |
| Marker | M | M | 0082 | Value of word address divided by 2 |
| Timer | T | T | 0060 | Word Address |
| Counter | C | Z | 0061 | Word Address |
| Variable | V | V | 0001 | Value of word address divided by 2 |

7 Error Messages

Error messages are displayed on the Display screen as follows: "No.: Device Name: Error Message (Error Occurrence Area)". Each description is shown below.

| Item | Description |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No. | Error No. |
| Device Name | Name of the External Device where error occurs. Device name is a title of the External Device set with GP-Pro EX. (Initial value [PLC1]) |
| Error Message | Displays messages related to the error which occurs. |
| Error Occurrence Area | <p>Displays IP address or device address of the External Device where error occurs, or error codes received from the External Device.</p> <p>NOTE</p> <ul style="list-style-type: none"> • IP address is displayed such as "IP address (Decimal): MAC address (Hex)". • Device address is displayed such as "Address: Device address". • Received error codes are displayed such as "Decimal [Hex]". |

Display Examples of Error Messages

"RHAA035: PLC1: Error has been responded for device write command (Error Code: 2 [02H])"

-
- NOTE**
- Refer to your External Device manual for details on received error codes.
 - Refer to "Display-related errors" in "Maintenance/Troubleshooting Guide" for details on the error messages common to the driver.
-

■ Error Code Peculiar to External Device

<Connection type: FETCH/WRITE>

| Error Code | Description | Comment |
|------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| 0x09 | Address Error: Trying to access an address that does not exist. | Check the address and correct it. It may be out of the address range, or DB may not be set to the External Device. |

<Connection type: OP Communication>

| Error Code | Description | Comment |
|------------|--------------------------------------------------|--------------------------|
| 0x05 | Trying to access an address that does not exist. | Check the address range. |
| 0x0A | Trying to access a DB that does not exist. | Check that DB is set. |