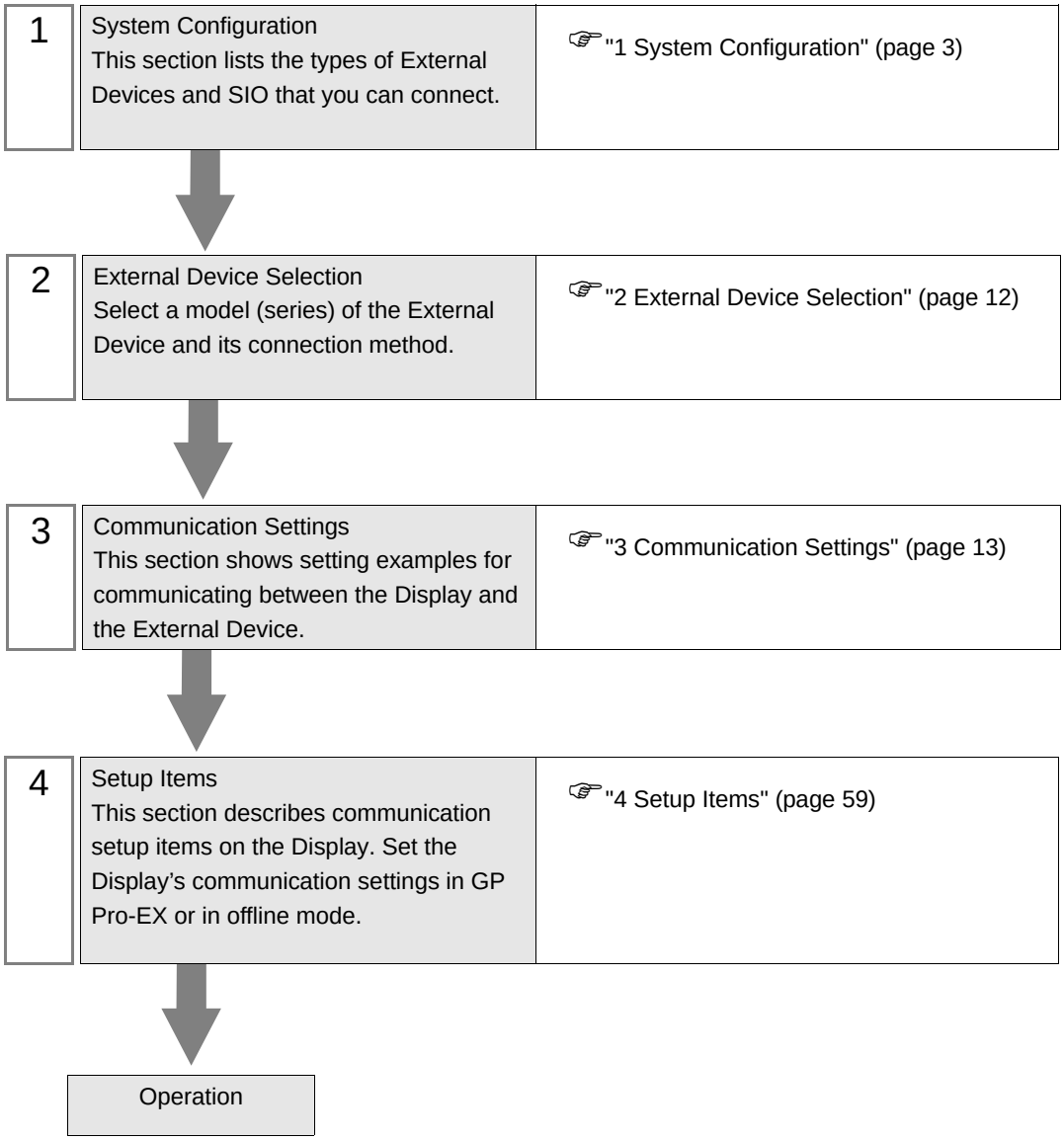
YASKAWA Electric Corporation

MP/INVERTER/SERVO Ethernet Driver

Introduction

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

In this manual, the connection procedure will be described in the sections identified below:



1 System Configuration

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

1.1 MP Series

Series	CPU	Link I/F	SIO Type	Setting Example
MP2000	MP2300 MP2200	Ethernet port on 218IF-01	Ethernet (UDP)	"3.1 Setting Example 1" (page 13)
		Ethernet port on 218IF-02	Ethernet (UDP)	"3.4 Setting Example 4" (page 22)
	MP2310 MP2300S	Ethernet Connector on CPU unit	Ethernet (UDP)	"3.2 Setting Example 2" (page 16)
		Ethernet port on 218IF-01	Ethernet (UDP)	"3.3 Setting Example 3" (page 19)
		Ethernet port on 218IF-02	Ethernet (UDP)	"3.4 Setting Example 4" (page 22)
	MP2400	Ethernet Connector on CPU unit	Ethernet (UDP)	"3.2 Setting Example 2" (page 16)
	MPU-01*1	Ethernet port on Main CPU*2 or Ethernet port on 218IF-01	Ethernet (UDP)	"3.12 Setting Example 12" (page 43)
MP3000	CPU-201	Ethernet Connector on CPU unit	Ethernet (UDP)	"3.9 Setting Example 9" (page 37)
	CPU-201(SUB)*3	Ethernet Connector on Main CPU (CPU201)	Ethernet (UDP)	"3.15 Setting Example 15" (page 51)
		Ethernet Connector on CPU201(SUB)	Ethernet (UDP)	"3.9 Setting Example 9" (page 37)

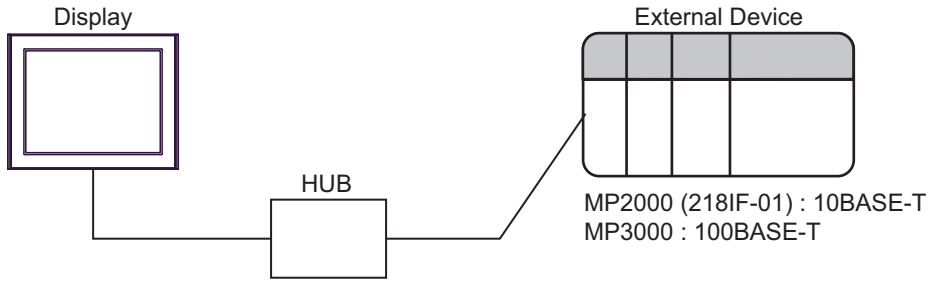
*1 The firmware version of the MPU-01 to be supported is Ver. 2.86 or later.

*2 Please refer to the MPU-01 Manual for the supported list of Main CPUs.

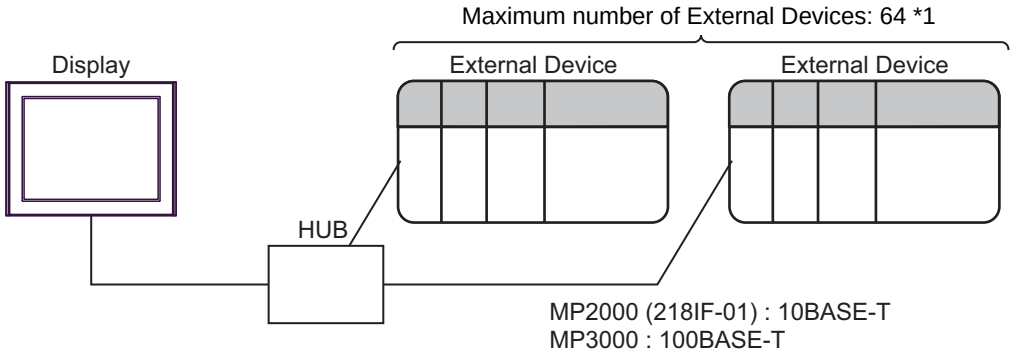
*3 The firmware version of the CPU-201 to be supported is Ver. 1.06 or later.

■ Connection Configuration

- 1:1 Connection



- 1:n Connection

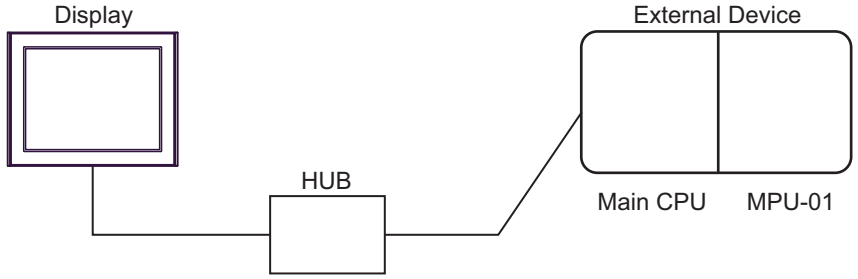


*1 When 33 or more External Devices are connected, it is necessary to check [Increase allowable number of Devices/PLCs].

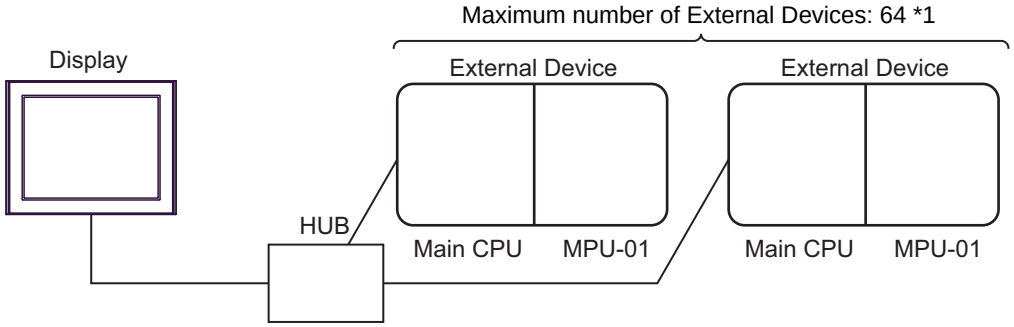
☞"4.1 Setup Items in GP-Pro EX" (page 59)

- MPU-01

1:1 Connection



1:n Connection



*1 When 33 or more External Devices are connected, it is necessary to check [Increase allowable number of Devices/PLCs].

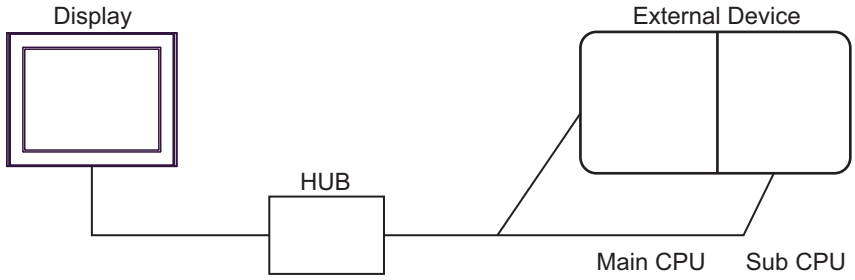
☞"4.1 Setup Items in GP-Pro EX" (page 59)

NOTE

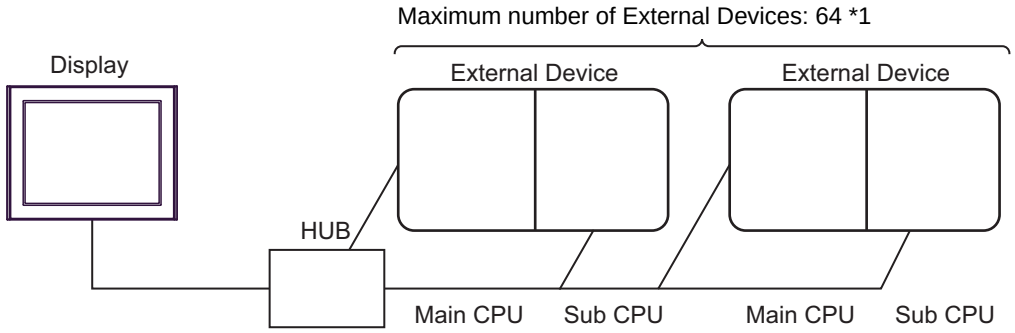
- When connecting to the MPU-01 via the main CPU, do not make communications from two or more devices (e.g. Display and Ladder software) at the same time. If so, the MPU-01 may make no response.

- Sub CPU

  1:1 Connection



  1:n Connection



*1 When 33 or more External Devices are connected, it is necessary to check [Increase allowable number of Devices/PLCs].

☞"4.1 Setup Items in GP-Pro EX" (page 59)

NOTE

- A Sub CPU can be communicated via a Main CPU or in direct connection.
- When connecting to the Sub CPU via the main CPU, do not make communications from two or more devices (e.g. Display and Ladder software) at the same time. If so, the Sub CPU may make no response.

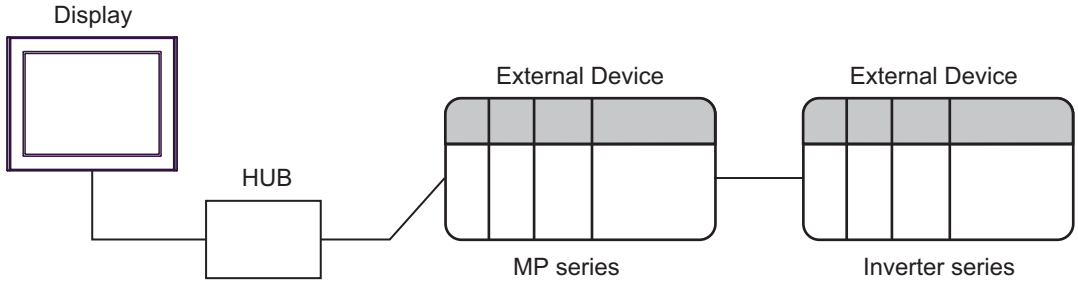
1.2 Inverter Series

Series	CPU*1	Link I/F	Communication	Setting Example
V1000	CIMR-VA□ A□□□□	V1000 Option MECHATROLINK-II (SI-T3/V)	Ethernet (UDP) and MECHATROLINK-II	"3.10 Setting Example 10" (page 39)
A1000	CIMR-A□□ A□□□□	A1000 MECHATROLINK-II (SI-T3)	Ethernet (UDP) and MECHATROLINK-II	"3.11 Setting Example 11" (page 41)

*1 The □ symbol in the inverter model name represents the maximum applicable motor capacity and other specifications.

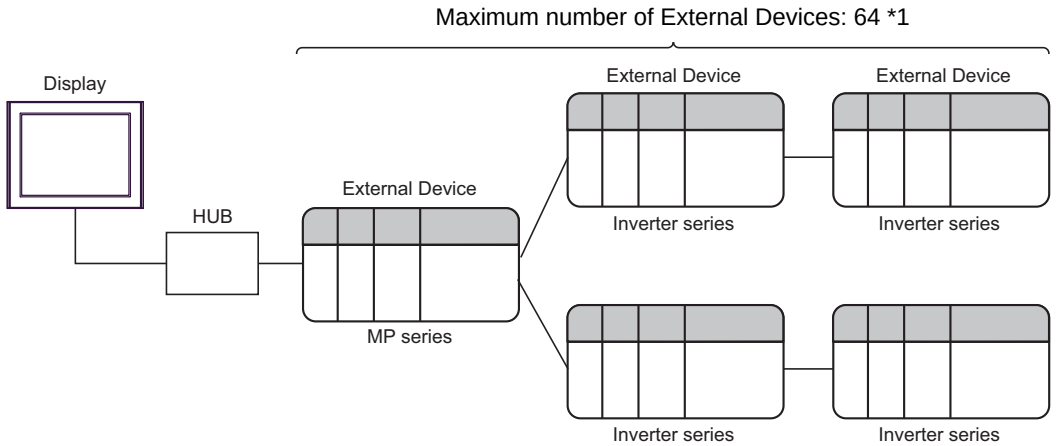
■ Connection Configuration

- 1:1 Connection



Between Display and MP series: Ethernet connection
Between MP series and Inverter series: MECHATROLINK connection

- 1:n Connection



Between Display and MP series: Ethernet connection
Between MP series and Inverter series: MECHATROLINK connection
Between Inverter series and Inverter series: MECHATROLINK connection

*1 When 33 or more External Devices are connected, it is necessary to check [Increase allowable number of Devices/PLCs].

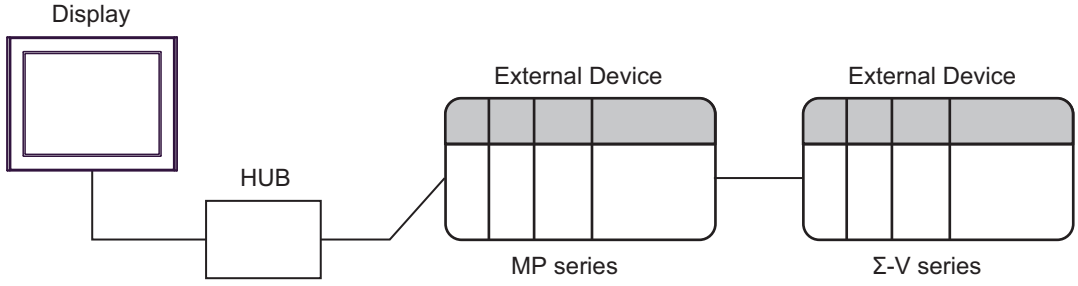
☞"4.1 Setup Items in GP-Pro EX" (page 59)

1.3 Σ-V Series

Series	CPU	Link I/F	SIO Type	Setting Example
Σ-V Series Rotary Motors (M-II)	SGDV- □□□□11 □□□□□□□	MECHATROLINK Communications Connectors (CN6A/CN6B)	Ethernet (UDP) and MECHATROLINK-II	"3.5 Setting Example 5" (page 25)
Σ-V Series Linear Motors (M-II)	SGDV- □□□□15 □□□□□□□	MECHATROLINK Communications Connectors (CN6A/CN6B)	Ethernet (UDP) and MECHATROLINK-II	"3.6 Setting Example 6" (page 28)
Σ-V Series Rotary Motors (M-III)	SGDV- □□□□21 □□□□□□□	MECHATROLINK Communications Connectors (CN6A/CN6B)	Ethernet (UDP) and MECHATROLINK-III	"3.7 Setting Example 7" (page 31)
		MECHATROLINK Communications Connectors on MPU-01	Ethernet (UDP) and MECHATROLINK-III	"3.13 Setting Example 13" (page 45)
		MECHATROLINK Communications Connectors on Sub CPU	Ethernet (UDP) and MECHATROLINK-III	"3.16 Setting Example 16" (page 53)
Σ-V Series Linear Motors (M-III)	SGDV- □□□□25 □□□□□□□	MECHATROLINK Communications Connectors (CN6A/CN6B)	Ethernet (UDP) and MECHATROLINK-III	"3.8 Setting Example 8" (page 34)
		MECHATROLINK Communications Connectors on MPU-01	Ethernet (UDP) and MECHATROLINK-III	"3.14 Setting Example 14" (page 48)
		MECHATROLINK Communications Connectors on Sub CPU	Ethernet (UDP) and MECHATROLINK-III	"3.17 Setting Example 17" (page 56)

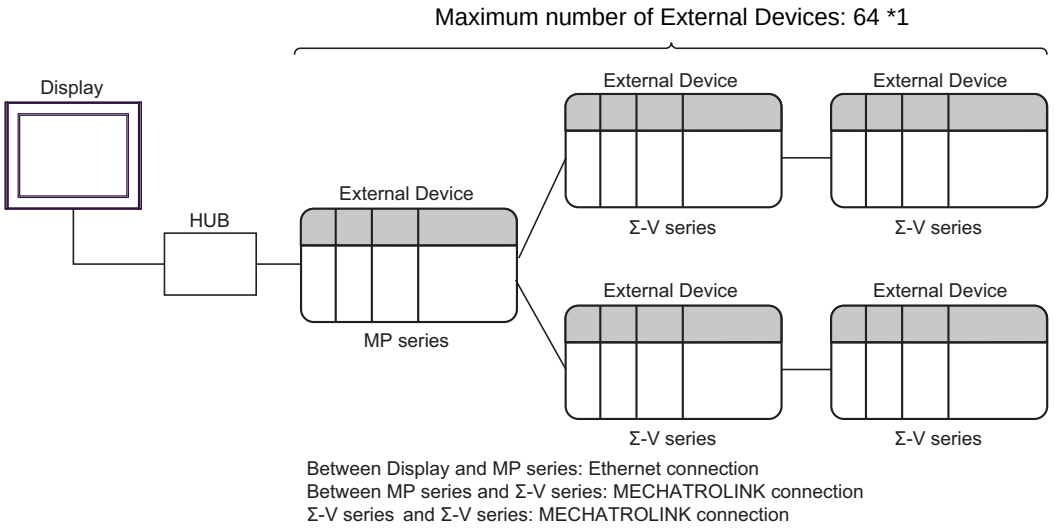
■ Connection Configuration

- 1:1 Connection



Between Display and MP series: Ethernet connection
Between MP series and Σ-V series: MECHATROLINK connection

- 1:n Connection

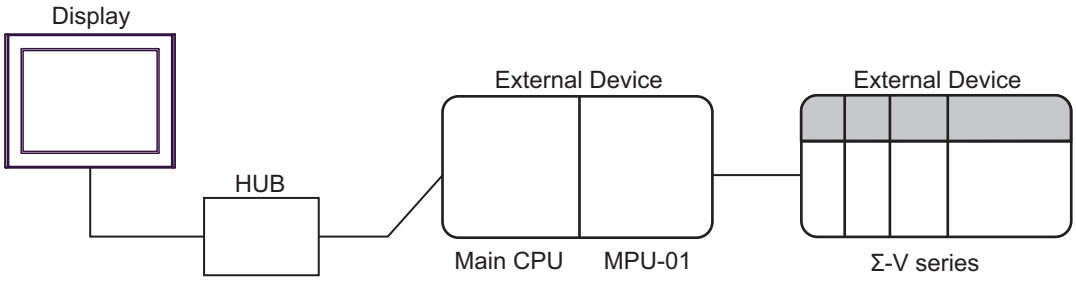


*1 When 33 or more External Devices are connected, it is necessary to check [Increase allowable number of Devices/PLCs].

☞"4.1 Setup Items in GP-Pro EX" (page 59)

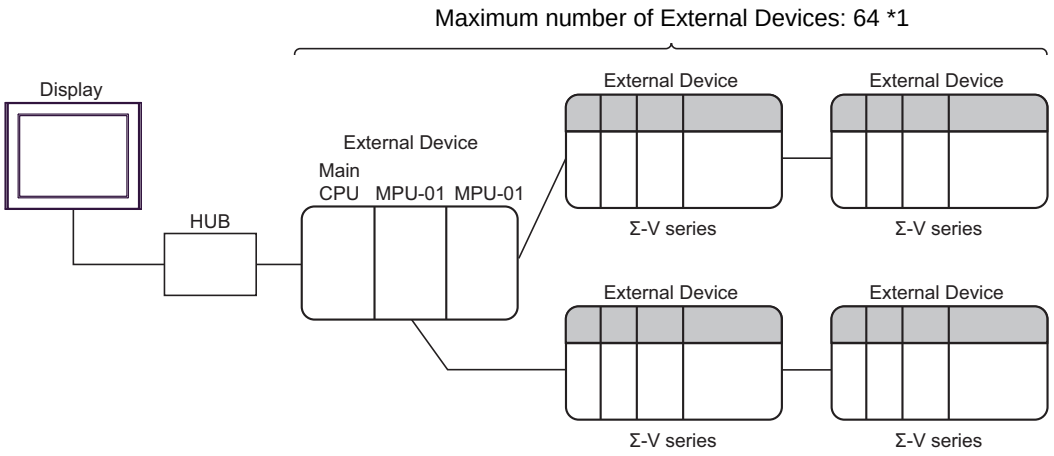
- Connection via MPU-01

  1:1 Connection



Between Display and Main CPU: Ethernet connection
Between MPU-01 and Σ-V series: MECHATROLINK connection

1:n Connection



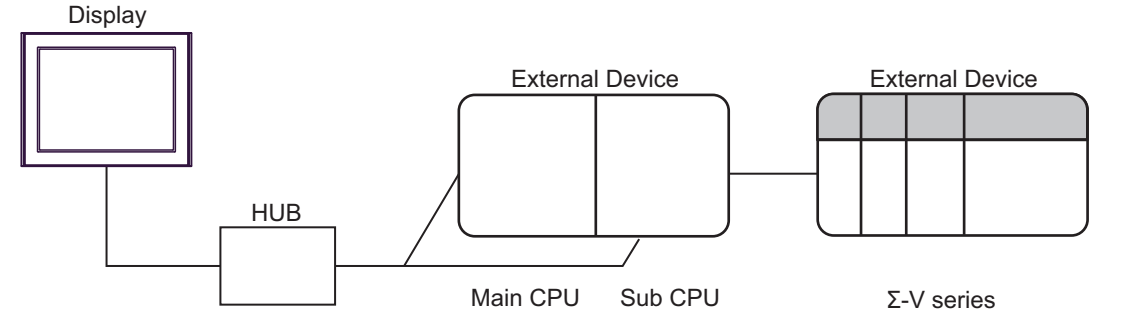
Between Display and Main CPU: Ethernet connection
Between MPU-01 and Σ-V series: MECHATROLINK connection
Σ-V series and Σ-V series: MECHATROLINK connection

*1 When 33 or more External Devices are connected, it is necessary to check [Increase allowable number of Devices/PLCs].

☞"4.1 Setup Items in GP-Pro EX" (page 59)

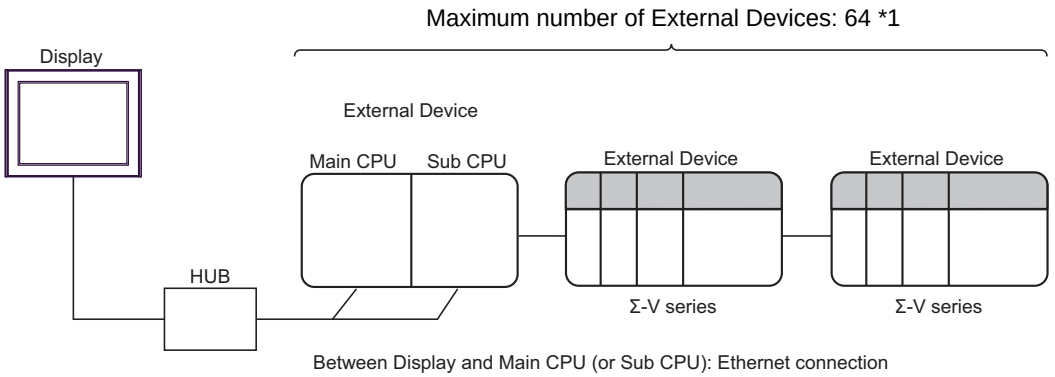
- Connection via Sub CPU

1:1 Connection



Between Display and Main CPU (or Sub CPU): Ethernet connection
Between Sub CPU and Σ-V series: MECHATROLINK connection

1:n Connection



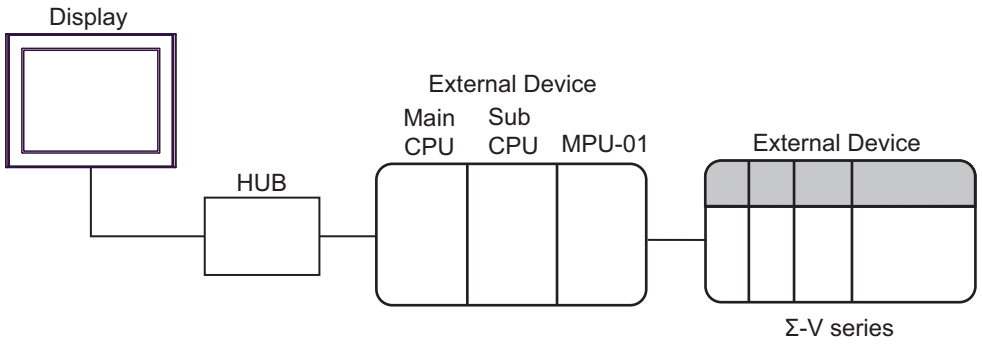
Between Display and Main CPU (or Sub CPU): Ethernet connection
Between SUB CPU and Σ-V series: MECHATROLINK connection
Σ-V series and Σ-V series: MECHATROLINK connection

*1 When 33 or more External Devices are connected, it is necessary to check [Increase allowable number of Devices/PLCs].

☞"4.1 Setup Items in GP-Pro EX" (page 59)

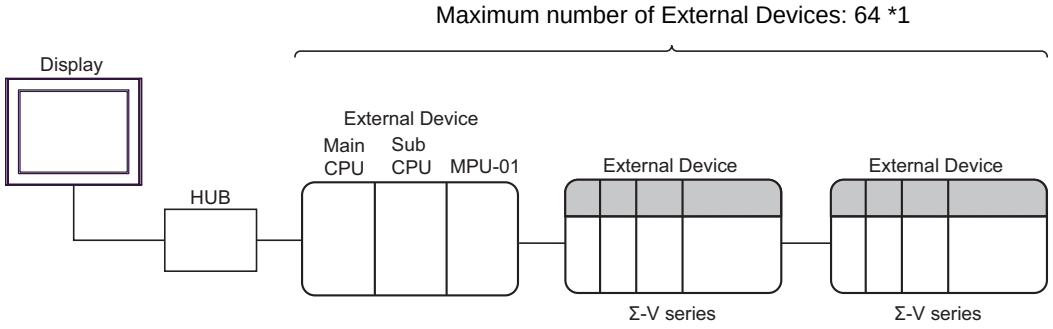
- Connection via Sub CPU and MPU-01

  1:1 Connection



Between Display and Main CPU: Ethernet connection
Between MPU-01 and Σ-V series: MECHATROLINK connection

  1:n Connection



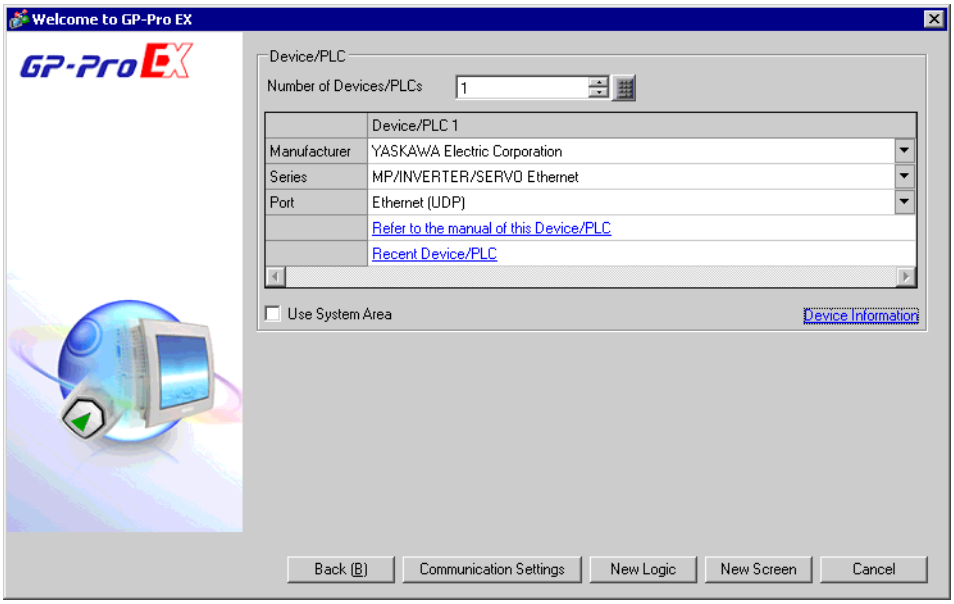
Between Display and Main CPU: Ethernet connection
Between MPU-01 and Σ-V series: MECHATROLINK connection
Σ-V series and Σ-V series: MECHATROLINK connection

*1 When 33 or more External Devices are connected, it is necessary to check [Increase allowable number of Devices/PLCs].

☞"4.1 Setup Items in GP-Pro EX" (page 59)

2 External Device Selection

Select the External Device to be connected to the Display.



Setup Items	Setup Description
Number of Devices/ PLCs	Use an integer from 1 to 4 to enter the number of Devices/PLCs to connect to the display.
Manufacturer	Select the manufacturer of the External Device to be connected. Select "YASKAWA Electric Corporation".
Series	Select a model (series) of the External Device to be connected and connection method. Select "MP/INVERTER/SERVO Ethernet". Check the External Device which can be connected in "MP/INVERTER/SERVO 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 to synchronize the system data area of the Display and the device (memory) of the External Device. When synchronized, you can use the External Device's ladder program to switch the display or display the window on the Display. Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)" This feature can also be set in GP-Pro EX or in the Display's offline mode. Cf. GP-Pro EX Reference Manual "System Settings [Display Unit] - [System Area] Settings Guide" Cf. Maintenance/Troubleshooting Guide "Main Unit - System Area Settings"

3 Communication Settings

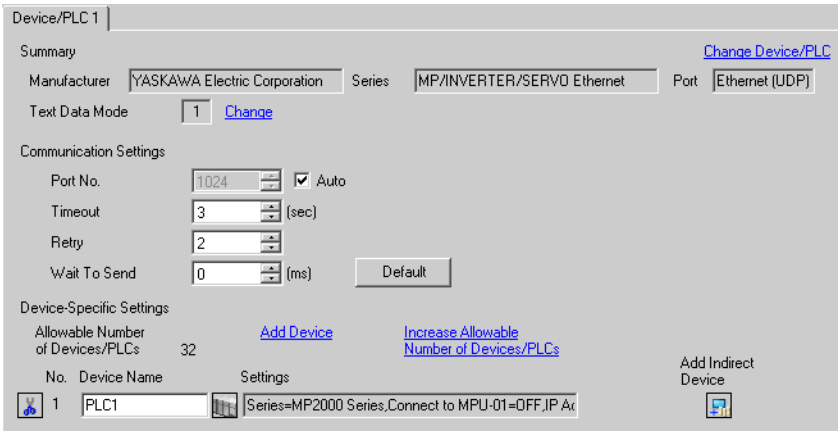
Examples of communication settings of the Display and the External Device, recommended by Pro-face, are shown.

3.1 Setting Example 1

■ Settings of GP-Pro EX

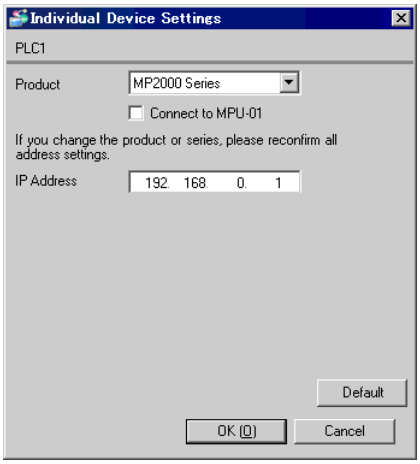
◆ Communication Settings

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



◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set IP address on the Display in the offline mode of the Display.

■ Settings of External Device

Use the ladder software (MPE720) to set up communication settings for the communication module 218IF-01.
For details on communication settings, please refer to the manual of the External Device.
The setup procedure differs depending on the version of your ladder software.

◆ Ladder Software Setting (for MPE720 Ver.5)

1 Start the ladder software, and in the root folder make the order and PLC folders.

2 Right-click the generated External Device, and from the shortcut menu select Logon.

NOTE

- In the shortcut menu, please confirm there is no check mark beside the [Online] command before logging on.
- For methods on logging on, refer to the User's Manual of the External Device.

3 From the PLC folder, double-click the [Definition folder]'s [Module Configuration] to display the [Engineering Manager].

4 In the [Engineering Manager]'s [Controller], use the pull-down menu to select the rack classification and communication module.
Set the number associated with the slot number used by the communication module.
When you select the communication module, its setting information is displayed in the [Engineering Manager]'s [Module details].

5 In the [Module details], double-click the No. field's numeric portion.
Double-click the number associated with the slot number connected to the Ethernet unit.

Setup Items		Setup Description
Transmission parameter	This Station IP address	PLC IP address

IMPORTANT

- Please make the connection parameter blank.
  Communication is not possible when a connection parameter is set.

6 Double-click "No.1" and set up serial communication.
Serial communication is used to transfer communication settings to the PLC.

7 Save the settings and exit [Engineering Manager].

8 After turning ON the communication module's "INIT" DIP Switch, turn ON the power supply.

9 Transfer the settings to the communication module.

10 While online, logon to the External Device. Write the transferred data to FLASH memory.

11 Turn OFF the External Device's power supply, turn OFF the "INIT" DIP Switch, and turn the External Device's power back ON.

◆ Ladder Software Setting (for MPE720 Ver.6)

1 Start the ladder software.

2 Make a project file.

3 From the tree view, double-click [Module Configuration].
[Engineering Manager] starts.

4 In the [Engineering Manager]'s [Controller], use the pull-down menu to select the rack classification and communication module.
Set the number associated with the slot number used by the communication module.
When you select the communication module, its setting information is displayed in the [Engineering Manager]'s [Module details].

5 In the [Module details], double-click the No. field's numeric portion.
Double-click the number associated with the slot number connected to the Ethernet unit.

Setup Items		Setup Description
Transmission parameter	This Station IP address	PLC IP address

IMPORTANT
- Please make the connection parameter blank.
  Communication is not possible when a connection parameter is set.

6 Double-click "No.1" and set up serial communication.
Serial communication is used to transfer communication settings to the PLC.

7 Save the settings and exit [Engineering Manager].

8 After turning ON the communication module's "INIT" DIP Switch, turn ON the power supply.

9 Write the settings to the communication module.

IMPORTANT
- To write the settings, select the [Save to flash after transferring to the controller] check box.
  If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

10 Turn OFF the External Device's power supply, turn OFF the "INIT" DIP Switch, and turn the External Device's power back ON.

◆ Notes

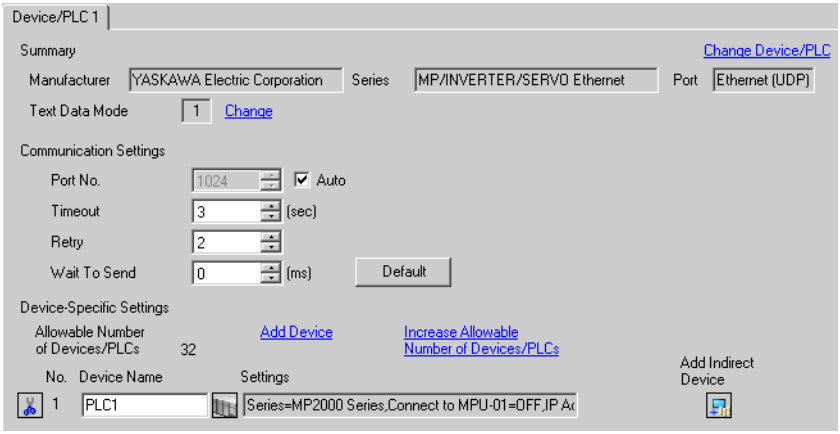
- Check with a network administrator about IP address. Do not set the duplicate IP address.

3.2 Setting Example 2

■ Settings of GP-Pro EX

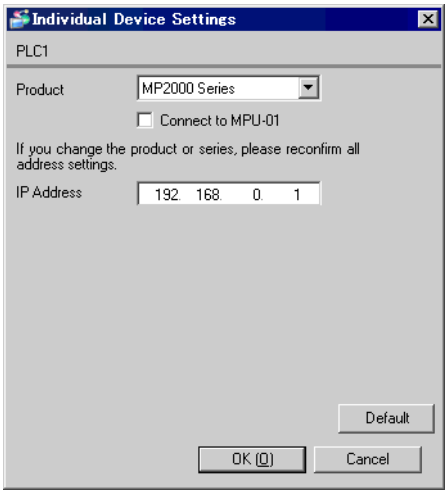
◆ Communication Settings

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



◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set IP address on the Display in the offline mode of the Display.

■ Settings of External Device

Use the ladder software (MPE720) to set up communication settings for the communication module CPU unit.
For details on communication settings, please refer to the manual of the External Device.
The setup procedure differs depending on the version of your ladder software.

◆ Ladder Software Setting (for MPE720 Ver.5)

1 Start the ladder software, and in the root folder make the order and PLC folders.

2 Right-click the generated External Device, and from the shortcut menu select Logon.

NOTE

- In the shortcut menu, please confirm there is no check mark beside the [Online] command before logging on.
- For methods on logging on, refer to the User's Manual of the External Device.

3 From the PLC folder, double-click the [Definition folder]'s [Module Configuration] to display the [Engineering Manager].

4 In the [Engineering Manager]'s [Controller], use the pull-down menu to select the rack classification and communication module.
Set the number associated with the slot number used by the communication module.
When you select the communication module, its setting information is displayed in the [Engineering Manager]'s [Module details].

5 In the [Module details], double-click the No. field's numeric portion.
Double-click the number associated with the slot number connected to the Ethernet unit.

Setup Items		Setup Description
Transmission parameter	This Station IP address	PLC IP address

IMPORTANT

- Please make the connection parameter blank.
  Communication is not possible when a connection parameter is set.

6 Save the settings and exit [Engineering Manager].

7 After turning ON the communication module's "INIT" DIP Switch, turn ON the power supply.

8 Transfer the settings to the communication module.

9 While online, logon to the External Device. Write the transferred data to FLASH memory.

10 Turn OFF the External Device's power supply, turn OFF the "INIT" DIP Switch, and turn the External Device's power back ON.

◆ Ladder Software Setting (for MPE720 Ver.6)

1 Start the ladder software.

2 Make a project file.

3 From the tree view, double-click [Module Configuration].
[Engineering Manager] starts.

4 In the [Engineering Manager]'s [Controller], use the pull-down menu to select the rack classification and communication module.
Set the number associated with the slot number used by the communication module.
When you select the communication module, its setting information is displayed in the [Engineering Manager]'s [Module details].

5 In the [Module details], double-click the No. field's numeric portion.
Double-click the number associated with the slot number connected to the Ethernet unit.

Setup Items		Setup Description
Transmission parameter	This Station IP address	PLC IP address

IMPORTANT
- Please make the connection parameter blank.
  Communication is not possible when a connection parameter is set.

6 Save the settings and exit [Engineering Manager].

7 After turning ON the communication module's "INIT" DIP Switch, turn ON the power supply.

8 Write the settings to the communication module.

IMPORTANT
- To write the settings, select the [Save to flash after transferring to the controller] check box.
  If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

9 Turn OFF the External Device's power supply, turn OFF the "INIT" DIP Switch, and turn the External Device's power back ON.

◆ Notes

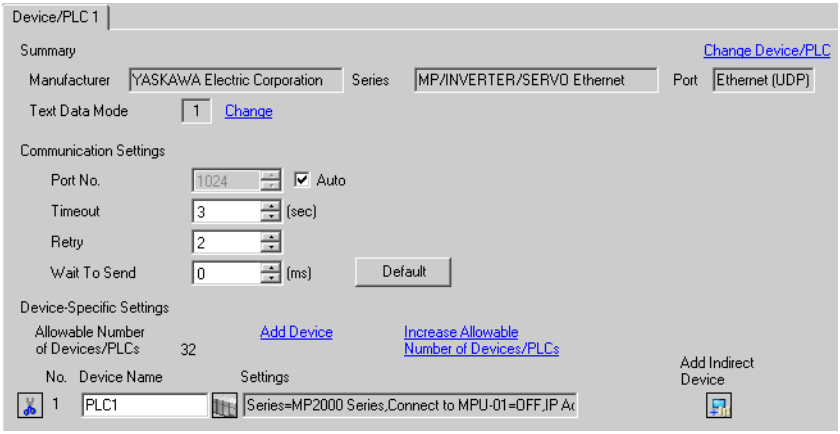
- Check with a network administrator about IP address. Do not set the duplicate IP address.

3.3 Setting Example 3

■ Settings of GP-Pro EX

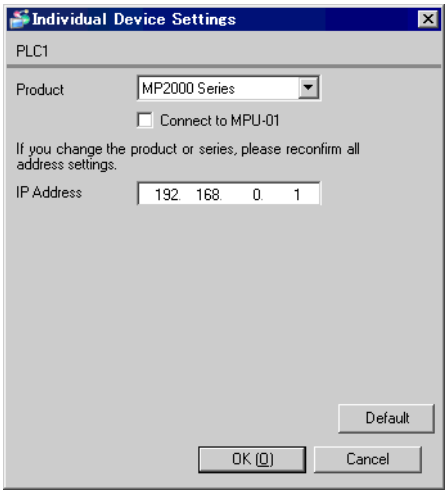
◆ Communication Settings

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



◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set IP address on the Display in the offline mode of the Display.

■ Settings of External Device

Use the ladder software (MPE720) to set up communication settings for the communication module 218IF-01.
For details on communication settings, please refer to the manual of the External Device.
The setup procedure differs depending on the version of your ladder software.

◆ Ladder Software Setting (for MPE720 Ver.5)

1 Start the ladder software, and in the root folder make the order and PLC folders.

2 Right-click the generated External Device, and from the shortcut menu select Logon.

NOTE

- In the shortcut menu, please confirm there is no check mark beside the [Online] command before logging on.
- For methods on logging on, refer to the User's Manual of the External Device.

3 From the PLC folder, double-click the [Definition folder]'s [Module Configuration] to display the [Engineering Manager].

4 In the [Engineering Manager]'s [Controller], use the pull-down menu to select the rack classification and communication module.
Set the number associated with the slot number used by the communication module.
When you select the communication module, its setting information is displayed in the [Engineering Manager]'s [Module details].

5 In the [Module details], double-click the No. field's numeric portion.
Double-click the number associated with the slot number connected to the Ethernet unit.

Setup Items		Setup Description
Transmission parameter	This Station IP address	PLC IP address

IMPORTANT

- Please make the connection parameter blank.
  Communication is not possible when a connection parameter is set.

6 Save the settings and exit [Engineering Manager].

7 After turning ON the communication module's "INIT" DIP Switch, turn ON the power supply.

8 Transfer the settings to the communication module.

9 While online, logon to the External Device. Write the transferred data to FLASH memory.

10 Turn OFF the External Device's power supply, turn OFF the "INIT" DIP Switch, and turn the External Device's power back ON.

◆ Ladder Software Setting (for MPE720 Ver.6)

1 Start the ladder software.

2 Make a project file.

3 From the tree view, double-click [Module Configuration].
[Engineering Manager] starts.

4 In the [Engineering Manager]'s [Controller], use the pull-down menu to select the rack classification and communication module.
Set the number associated with the slot number used by the communication module.
When you select the communication module, its setting information is displayed in the [Engineering Manager]'s [Module details].

5 In the [Module details], double-click the No. field's numeric portion.
Double-click the number associated with the slot number connected to the Ethernet unit.

Setup Items		Setup Description
Transmission parameter	This Station IP address	PLC IP address

IMPORTANT
- Please make the connection parameter blank.
  Communication is not possible when a connection parameter is set.

6 Save the settings and exit [Engineering Manager].

7 After turning ON the communication module's "INIT" DIP Switch, turn ON the power supply.

8 Write the settings to the communication module.

IMPORTANT
- To write the settings, select the [Save to flash after transferring to the controller] check box.
  If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

9 Turn OFF the External Device's power supply, turn OFF the "INIT" DIP Switch, and turn the External Device's power back ON.

◆ Notes

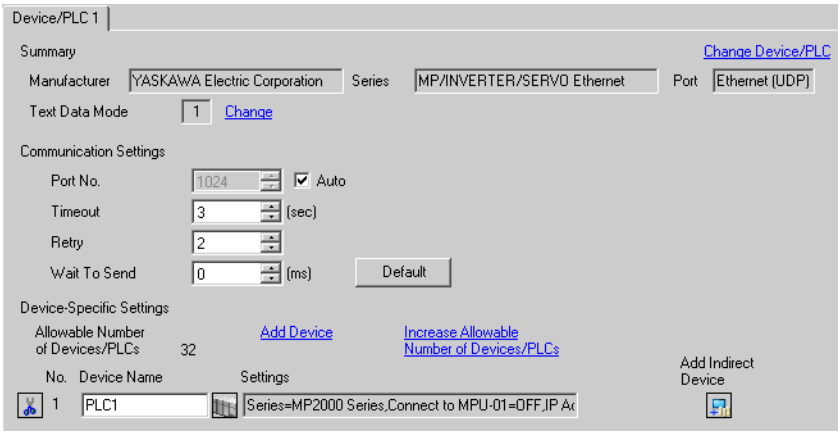
- Check with a network administrator about IP address. Do not set the duplicate IP address.

3.4 Setting Example 4

■ Settings of GP-Pro EX

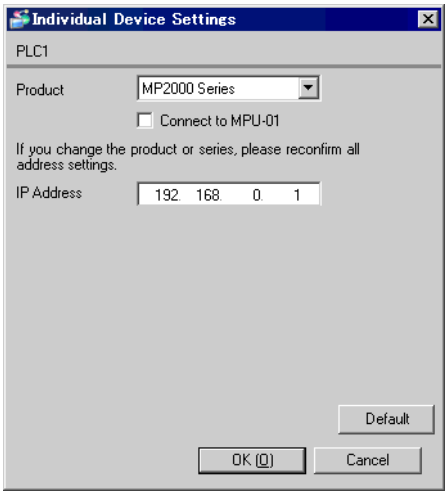
◆ Communication Settings

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



◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set IP address on the Display in the offline mode of the Display.

■ Settings of External Device

Use the ladder software (MPE720) to set up communication settings for the communication module 218IF-01.

For details on communication settings, please refer to the manual of the External Device.

The setup procedure differs depending on the version of your ladder software.

◆ Ladder Software Setting (for MPE720 Ver.5)

1 Start the ladder software, and in the root folder make the order and PLC folders.

2 Right-click the generated External Device, and from the shortcut menu select Logon.

NOTE

- In the shortcut menu, please confirm there is no check mark beside the [Online] command before logging on.
- For methods on logging on, refer to the User's Manual of the External Device.

3 From the PLC folder, double-click the [Definition folder]'s [Module Configuration] to display the [Engineering Manager].

4 In the [Engineering Manager]'s [Controller], use the pull-down menu to select the rack classification and communication module.

Set the number associated with the slot number used by the communication module.

When you select the communication module, its setting information is displayed in the [Engineering Manager]'s [Module details].

5 In the [Module details], double-click the No. field's numeric portion.

Double-click the number associated with the slot number connected to the Ethernet unit.

Setup Items		Setup Description
Transmission parameter	This Station IP address	PLC IP address

IMPORTANT

- Please make the connection parameter blank.
  Communication is not possible when a connection parameter is set.

6 Save the settings and exit [Engineering Manager].

7 After turning ON the communication module's "INIT" DIP Switch, turn ON the power supply.

8 Transfer the settings to the communication module.

9 While online, logon to the External Device. Write the transferred data to FLASH memory.

10 Turn OFF the External Device's power supply, turn OFF the "INIT" DIP Switch, and turn the External Device's power back ON.

◆ Ladder Software Setting (for MPE720 Ver.6)

1 Start the ladder software.

2 Make a project file.

3 From the tree view, double-click [Module Configuration].
[Engineering Manager] starts.

4 In the [Engineering Manager]'s [Controller], use the pull-down menu to select the rack classification and communication module.
Set the number associated with the slot number used by the communication module.
When you select the communication module, its setting information is displayed in the [Engineering Manager]'s [Module details].

5 In the in [Module details], double-click the No. field's numeric portion.
Double-click the number associated with the slot number connected to the Ethernet unit.

Setup Items		Setup Description
Transmission parameter	This Station IP address	PLC IP address

IMPORTANT
- Please make the connection parameter blank.
  Communication is not possible when a connection parameter is set.

6 Save the settings and exit [Engineering Manager].

7 After turning ON the communication module's "INIT" DIP Switch, turn ON the power supply.

8 Write the settings to the communication module.

IMPORTANT
- To write the settings, select the [Save to flash after transferring to the controller] check box.
  If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

9 Turn OFF the External Device's power supply, turn OFF the "INIT" DIP Switch, and turn the External Device's power back ON.

◆ Notes

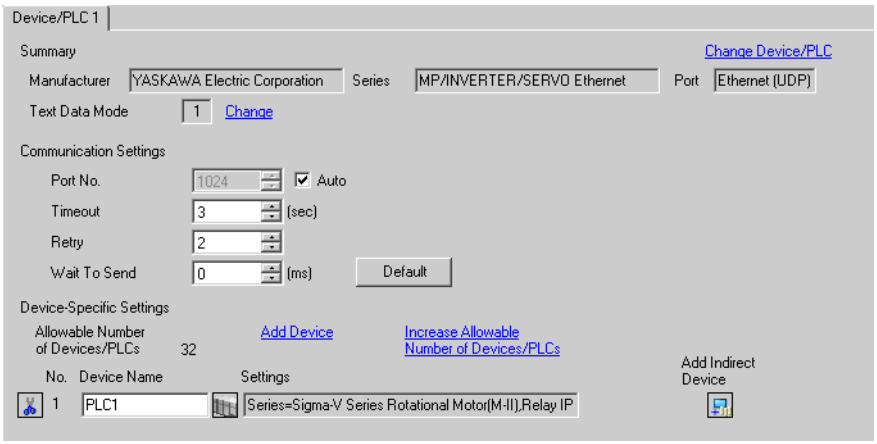
- Check with a network administrator about IP address. Do not set the duplicate IP address.

3.5 Setting Example 5

■ Settings of GP-Pro EX

◆ Communication Settings

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

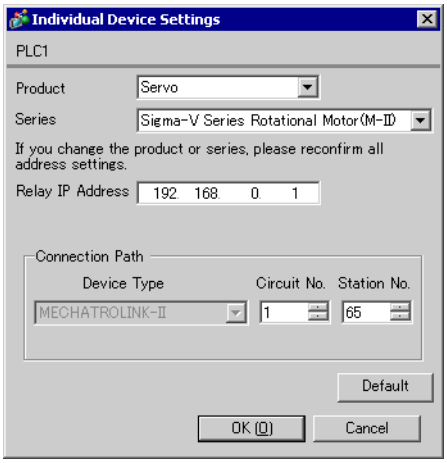


IMPORTANT

- To connect Σ-V Series using a 1:n connection, [Wait To Send] must be 100ms or more.

◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set IP address on the Display in the offline mode of the Display.

■ Settings of External Device

Set communication settings for both MP and Σ-V Series.

◆ MP Series Setting

Use the ladder software (MPE720) to set up communication settings.

For details on communication settings, please refer to the manual of the External Device.

1 Start the ladder software.

2 Make a project file.

3 From the tree view, double-click [Module Configuration].

[Engineering Manager] starts.

4 In the [Create new file] dialog box, click [OK].

5 In the [Engineering Manager]'s [Controller], use the pull-down menu to select MECHATROLINK connection module.

Select the number associated with the slot number used by the module.

When you select the MECHATROLINK connection module, its setting information is displayed in the [Engineering Manger]'s [Module details].

6 In the [module Details]'s [Circuit Number] field, enter "01".

Set up the same value as the Display's circuit number.

7 In [Details], double-click [MECHATROLINK].

8 Click the [Link Assignments] tab, and then set [ST#]'s [01] field as follows.

Setup Items	Setup Description
TYPE	Select the type of Σ-V Series you are using.

NOTE

- [ST#] is defined based on the Σ-V Series station address.
  When the station address is 41H, define "ST#01".

9 In the [Engineering Manager]'s [Controller], select CPU.

10 In the [Module details], double-click the communication module's No. field.

11 Set [Transmission Parameters] as follows.

Setup Items	Setup Description
IP Address	192.168.0.1
Subnet Mask	255.255.255.0

12 From the [File] menu select [Save] to save your settings, and exit [Engineering Manager].

13 Write the settings to the MP Series.

IMPORTANT

- To write the settings, select the [Save to flash after transferring to the controller] check box.
  If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

◆ Σ-V Series Setting

Set up communication settings with the DIP Switch (SW2) and the rotary switch (SW1). For example, when the SW2-3 is OFF and SW1 is 1, the station address is 41H.

For details on communication settings, please refer to the manual for the External Device.

- DIP Switch (SW2) Setting

DIP Switch	Settings	Setup Description
1	ON	Communication speed: 10Mbps (MECHATROLINK-II)
2	Optional	Data transfer size. ON: 32-byte data transfer OFF: 17-byte data transfer
3	OFF	Define the station address in combination with the rotary switch (SW1). ON: Tenth's position of station address is 0x5 OFF: Tenth's position of station address is 0x4
4	OFF	Always OFF

- Rotary Switch (SW1) Setting

  Set the station address in combination with the DIP Switch (SW2), number 3.

Rotary Switch	Settings	Setup Description
SW1	1	Ones place of the station address

◆ Notes

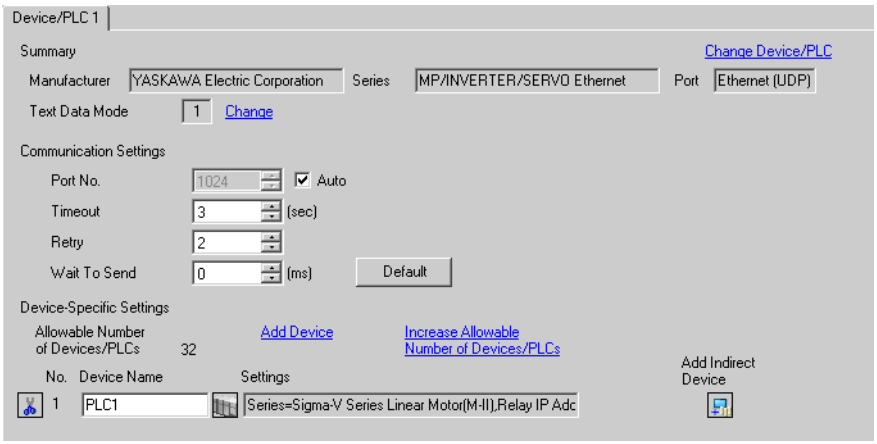
- Check with a network administrator about IP address. Do not set the duplicate IP address.

3.6 Setting Example 6

■ Settings of GP-Pro EX

◆ Communication Settings

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

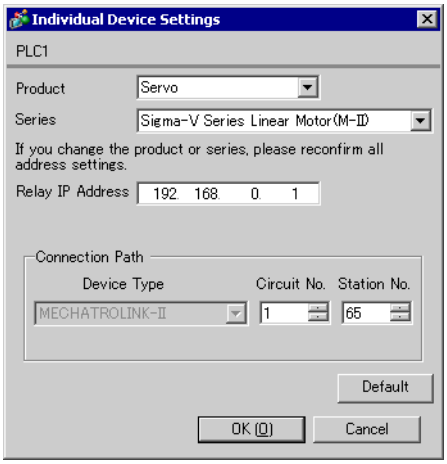


IMPORTANT

- To connect Σ-V Series using a 1:n connection, [Wait To Send] must be 100ms or more.

◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set IP address on the Display in the offline mode of the Display.

■ Settings of External Device

Set communication settings for both MP and Σ-V Series.

◆ MP Series Setting

Use the ladder software (MPE720) to set up communication settings.

For details on communication settings, please refer to the manual of the External Device.

1 Start the ladder software.

2 Make a project file.

3 From the tree view, double-click [Module Configuration].

[Engineering Manager] starts.

4 In the [Create new file] dialog box, click [OK].

5 In the [Engineering Manager]'s [Controller], use the pull-down menu to select MECHATROLINK connection module.

Select the number associated with the slot number used by the module.

When you select the MECHATROLINK connection module, its setting information is displayed in the [Engineering Manger]'s [Module details].

6 In the [module Details]'s [Circuit Number] field, enter "01".

Set up the same value as the Display's circuit number.

7 In [Details], double-click [MECHATROLINK].

8 Click the [Link Assignments] tab, and then set [ST#]'s [01] field as follows.

Setup Items	Setup Description
TYPE	Select the type of Σ-V Series you are using.

NOTE

- [ST#] is defined based on the Σ-V Series station address.
  When the station address is 41H, define "ST#01".

9 In the [Engineering Manager]'s [Controller], select CPU.

10 In the [Module details], double-click the communication module's No. field.

11 Set [Transmission Parameters] as follows.

Setup Items	Setup Description
IP Address	192.168.0.1
Subnet Mask	255.255.255.0

12 From the [File] menu select [Save] to save your settings, and exit [Engineering Manager].

13 Write the settings to the MP Series.

IMPORTANT

- To write the settings, select the [Save to flash after transferring to the controller] check box.
  If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

◆ Σ-V Series Setting

Set up communication settings with the DIP Switch (SW2) and the rotary switch (SW1). For example, when the SW2-3 is OFF and SW1 is 1, the station address is 41H.

For details on communication settings, please refer to the manual for the External Device.

- DIP Switch (SW2) Setting

DIP Switch	Settings	Setup Description
1	ON	Communication speed: 10Mbps (MECHATROLINK-II)
2	Optional	Data transfer size. ON: 32-byte data transfer OFF: 17-byte data transfer
3	OFF	Define the station address in combination with the rotary switch (SW1). ON: Tenth's position of station address is 0x5 OFF: Tenth's position of station address is 0x4
4	OFF	Always OFF

- Rotary Switch (SW1) Setting

  Set the station address in combination with the DIP Switch (SW2), number 3.

Rotary Switch	Settings	Setup Description
SW1	1	Ones place of the station address

◆ Notes

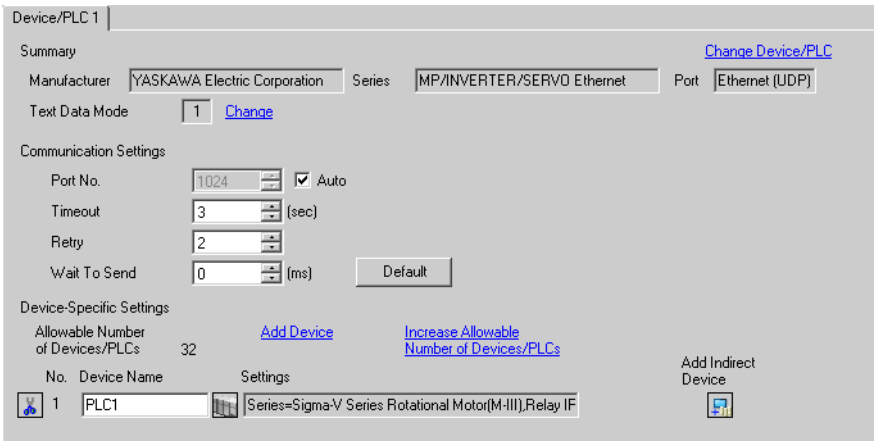
- Check with a network administrator about IP address. Do not set the duplicate IP address.

3.7 Setting Example 7

■ Settings of GP-Pro EX

◆ Communication Settings

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

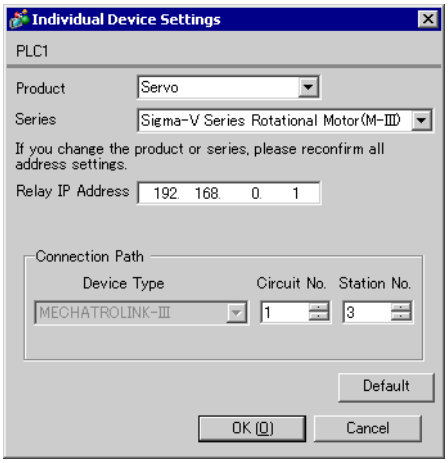


IMPORTANT

- To connect Σ-V Series using a 1:n connection, [Wait To Send] must be 100ms or more.

◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set IP address on the Display in the offline mode of the Display.

■ Settings of External Device

Set communication settings for both MP and Σ-V Series.

◆ MP Series Setting

Use the ladder software (MPE720) to set up communication settings.

For details on communication settings, please refer to the manual of the External Device.

1 Start the ladder software.

2 Make a project file.

3 From the tree view, double-click [Module Configuration].

[Engineering Manager] starts.

4 In the [Create new file] dialog box, click [OK].

5 In the [Engineering Manager]'s [Controller], use the pull-down menu to select MECHATROLINK connection module.

Select the number associated with the slot number used by the module.

When you select the MECHATROLINK connection module, its setting information is displayed in the [Engineering Manger]'s [Module details].

6 In the [module Details]'s [Circuit Number] field, enter "01".

Set up the same value as the Display's circuit number.

7 In [Details], double-click [MECHATROLINK].

8 Click the [Link Assignments] tab, and then [ST#]'s [01] as follows.

Setup Items	Setup Description
ADR	03H
ExADR	00
VENDOR	Yaskawa Electric co.
DEVICE	Σ-V Series type

NOTE

- [PROFILE], [BYTE] and [SCAN] are defined automatically.

9 In the [Engineering Manager]'s [Controller], select CPU.

10 In the [Module details], double-click the communication module's No. field.

11 Set [Transmission Parameters] as follows.

Setup Items	Setup Description
IP Address	192.168.0.1
Subnet Mask	255.255.255.0

12 From the [File] menu select [Save] to save your settings, and exit [Engineering Manager].

13 Write the settings to MP Series.

IMPORTANT

- To write the settings, select the [Save to flash after transferring to the controller] check box.
  If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

◆ Σ-V Series Setting

Set up communication settings with rotary switches (S1 and S2).

For details on communication settings, please refer to the manual of the External Device.

Rotary Switch	Settings	Setup Description
S1 (x16)	0	Station address
S2 (x1)	3	

◆ Notes

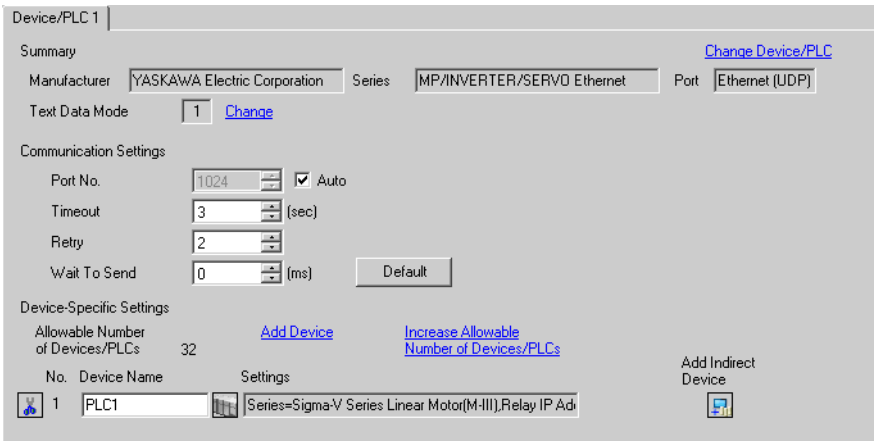
- Check with a network administrator about IP address. Do not set the duplicate IP address.

3.8 Setting Example 8

■ Settings of GP-Pro EX

◆ Communication Settings

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

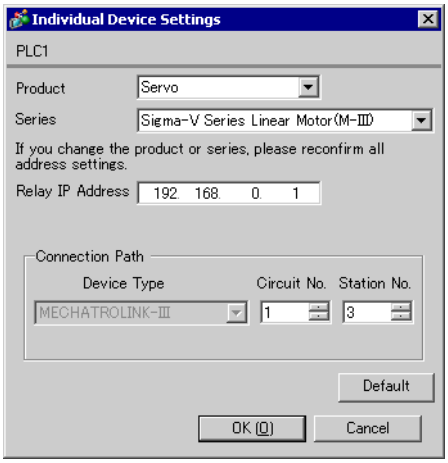


IMPORTANT

- To connect Σ-V Series using a 1:n connection, [Wait To Send] must be 100ms or more.

◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set IP address on the Display in the offline mode of the Display.

■ Settings of External Device

Set communication settings for both MP and Σ-V Series.

◆ MP Series Setting

Use the ladder software (MPE720) to set up communication settings.

For details on communication settings, please refer to the manual of the External Device.

1 Start the ladder software.

2 Make a project file.

3 From the tree view, double-click [Module Configuration].

[Engineering Manager] starts.

4 In the [Create new file] dialog box, click [OK].

5 In the [Engineering Manager]'s [Controller], use the pull-down menu to select MECHATROLINK connection module.

Select the number associated with the slot number used by the module.

When you select the MECHATROLINK connection module, its setting information is displayed in the [Engineering Manger]'s [Module details].

6 In the [module Details]'s [Circuit Number] field, enter "01".

Set up the same value as the Display's circuit number.

7 In [Details], double-click [MECHATROLINK].

8 Click the [Link Assignments] tab, and then [ST#]'s [01] as follows.

Setup Items	Setup Description
ADR	03H
ExADR	00
VENDOR	Yaskawa Electric co.
DEVICE	Σ-V Series type

NOTE

- [PROFILE], [BYTE] and [SCAN] are defined automatically.

9 In the [Engineering Manager]'s [Controller], select CPU.

10 In the [Module details], double-click the communication module's No. field.

11 Set [Transmission Parameters] as follows.

Setup Items	Setup Description
IP Address	192.168.0.1
Subnet Mask	255.255.255.0

12 From the [File] menu select [Save] to save your settings, and exit [Engineering Manager].

13 Write the settings to MP Series.

IMPORTANT

- To write the settings, select the [Save to flash after transferring to the controller] check box.
  If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

◆ Σ-V Series Setting

Set up communication settings with rotary switches (S1 and S2).

For details on communication settings, please refer to the manual of the External Device.

Rotary Switch	Settings	Setup Description
S1 (x16)	0	Station address
S2 (x1)	3	

◆ Notes

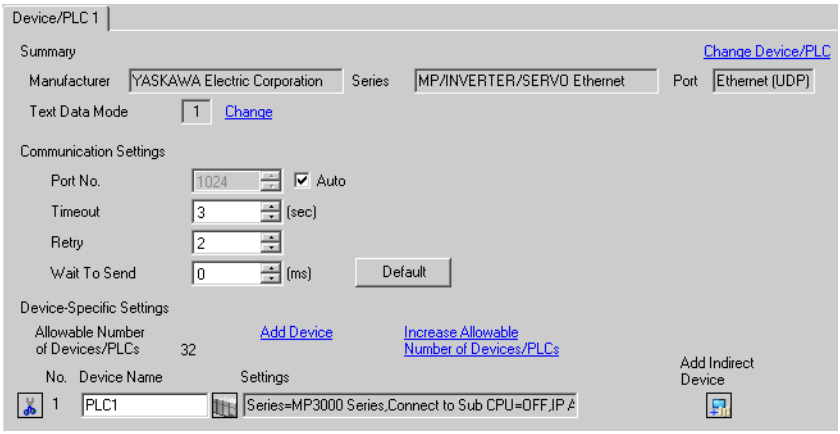
- Check with a network administrator about IP address. Do not set the duplicate IP address.

3.9 Setting Example 9

■ Settings of GP-Pro EX

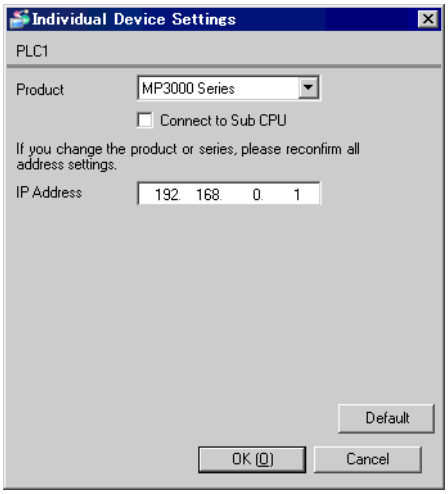
◆ Communication Settings

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



◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set the Display's IP address in its offline mode.

■ Settings of External Device

Use the ladder software (MP720 Ver.7) to set up communication settings.

For details on communication settings, please refer to the manual of the External Device.

1 Start the ladder software.

2 Make a project file.

3 Click [Module Configuration] to start [MC-Configurator].

4 Double-click [218IFD] on the CPU you want to use.

5 Click the [Transmission Parameters] tab.

6 In the [Transmission Parameters], set the [IP Address] and [Subnet Mask].

Setup Items	Setup Description
IP Address	192.168.0.1
Subnet Mask	255.255.255.0

7 Write the settings to the External Device.

8 Turn ON the External Device again.

◆ Notes

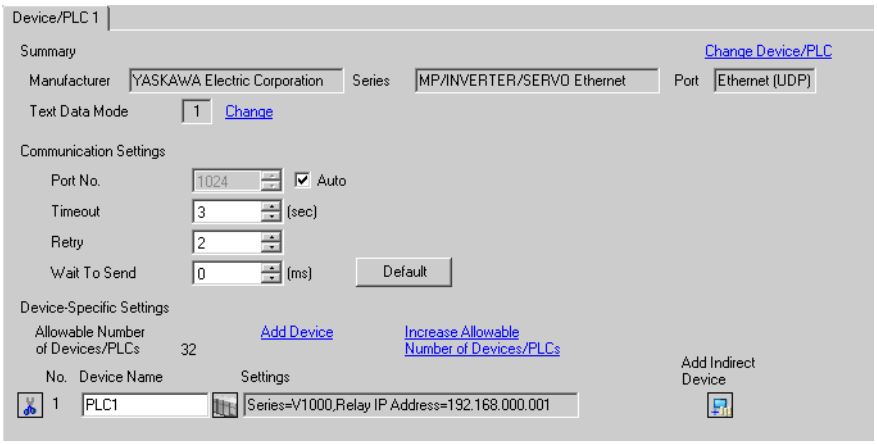
- Check with a network administrator about IP address. Do not set the duplicate IP address.

3.10 Setting Example 10

■ Settings of GP-Pro EX

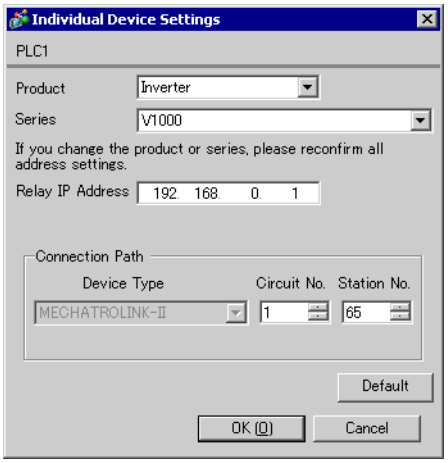
◆ Communication Settings

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



◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set the Display's IP address in offline mode.

■ Settings of External Device

For details on communication settings, please refer to the manual of the External Device.

◆ Setup Procedure

1 Press UP to display the Parameter Setting Mode screen. Press ENTER to change to Set Up Mode.

2 Press UP to display setup items. Press ENTER key to change to setup screen.

3 Press UP or RESET to select the setup value. Press ENTER to set up a description.

◆ Setup Description

Setup Items	Setup value	Description
b1-02[*1]	3	Run Command Selection (Option Card)
F60-20	21	MECHATROLINK station address
F60-22	0	MECHATROLINK link rate (10Mbps)

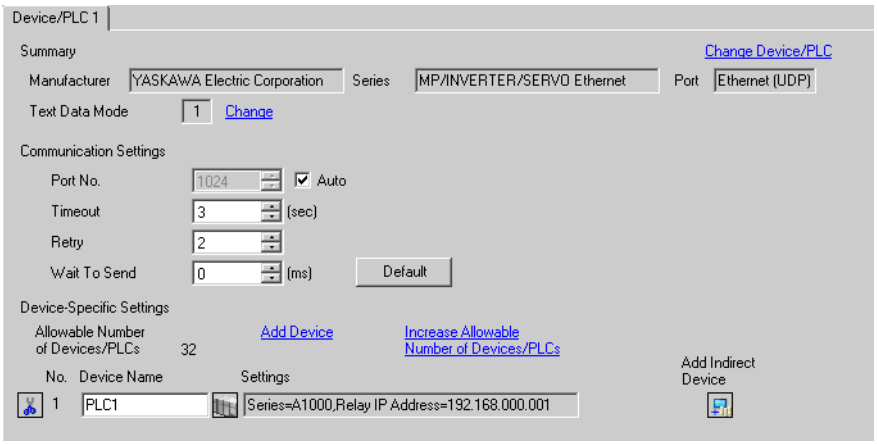
*1 Set b1-01 to 3 when you set the frequency via MECHATROLINK.

3.11 Setting Example 11

■ Settings of GP-Pro EX

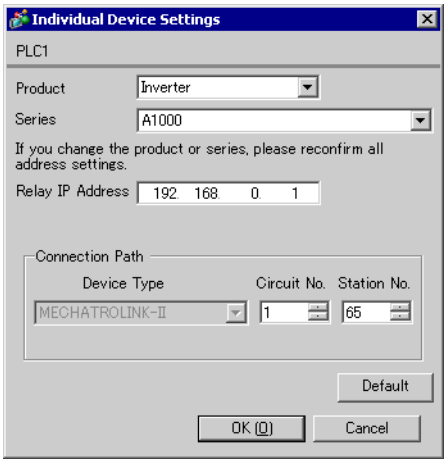
◆ Communication Settings

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



◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set the Display's IP address in offline mode.

■ Settings of External Device

For details on communication settings, please refer to the manual of the External Device.

◆ Setup Procedure

1 Press UP to display the Parameter Setting Mode screen. Press ENTER to change to Set Up Mode.

2 Press UP to display setup items. Press ENTER key to change to setup screen.

3 Press UP or RESET to select the setup value. Press ENTER to set up a description.

◆ Setup Description

Setup Items	Setup value	Description
b1-02[*1]	3	Run Command Selection (Option Card)
F60-20	21	MECHATROLINK station address
F60-22	0	MECHATROLINK link rate (10Mbps)

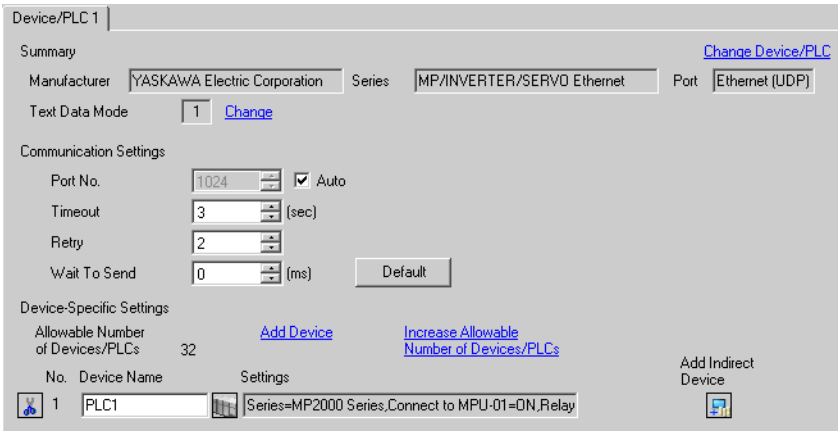
*1 Set b1-01 to 3 when you set the frequency via MECHATROLINK.

3.12 Setting Example 12

■ Settings of GP-Pro EX

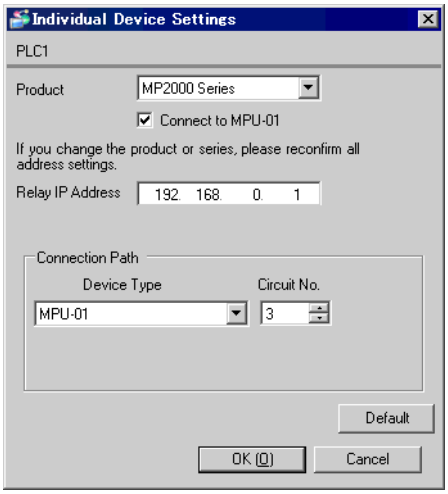
◆ Communication Settings

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



◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set IP address on the Display in the offline mode of the Display.

■ Settings of External Device

Use the ladder software (MP720 Ver.7) to set up communication settings.

For details on communication settings, please refer to the manual of the External Device.

1 Start the ladder software.

2 Make a project file. Select the main CPU models from [Model].

3 From the tree view, double-click [Module Configuration].

[MC-Configurator] starts.

4 Double-click [218IFD] on the CPU to use.

5 Click [Parameters] tab.

6 Set "IP Address" and "Subnet Mask" of "Transmission Parameters".

Setup Items	Setup Description
IP Address	192.168.0.1
Subnet Mask	255.255.255.0

7 Double-click the module number corresponding to the option slot which attaches MPU-01 in the [MC-Configurator]

8 Select [MPU-01] in the [Module] dialog box, and click [OK].

9 Set "3" to the circuit number of MPU-01 that displayed in the [MC-Configurator].

Set up the same value as the Display's circuit number.

10 Write the settings to the External Device.

IMPORTANT

- To write the settings, select the [Save to flash after transferring to the controller] check box.
  If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

◆ Notes

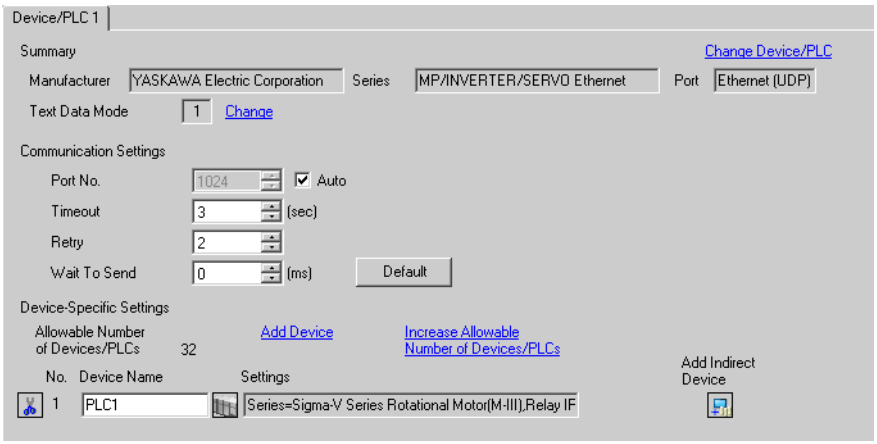
- Check with a network administrator about IP address. Do not set the duplicate IP address.

3.13 Setting Example 13

■ Settings of GP-Pro EX

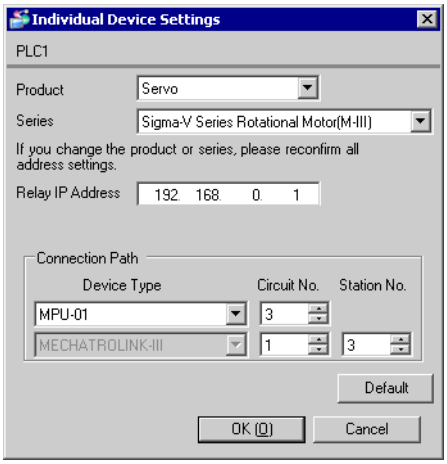
◆ Communication Settings

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



◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set IP address on the Display in the offline mode of the Display.

■ Settings of External Device

Use the ladder software (MP720 Ver.7) to set up communication settings. Set the next contents.

(1) Main CPU settings

(2) MPU-01 settings

(3) Σ-Vseries settings

For details on communication settings, please refer to the manual of the External Device.

◆ Main CPU Settings

1 Start the ladder software.
2 Make a project file. Select the main CPU models from [Model].
3 From the tree view, double-click [Module Configuration].
[MC-Configurator] starts.
4 Double-click [218IFD] on the CPU to use.
5 Click [Parameters] tab.
6 Set "IP Address" and "Subnet Mask" of "Transmission Parameters".

Setup Items	Setup Description
IP Address	192.168.0.1
Subnet Mask	255.255.255.0

7 Double-click the module number corresponding to the option slot which attaches MPU-01 in the [MC-Configurator]
8 Select [MPU-01] in the [Module] dialog box, and click [OK].
9 Set "3" to the circuit number of MPU-01 that displayed in the [MC-Configurator].
Set up the same value as the Display's circuit number.
10 Write the settings to the External Device.

IMPORTANT
- To write the settings, select the [Save to flash after transferring to the controller] check box.
If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

◆ MPU-01 Settings

1 Start the ladder software.
2 Make a project file. Select "MPU-01" from [Model].
3 From the tree view, double-click [Module Configuration].
[MC-Configurator] starts.
4 Expand [SVC] of [MPU-01] module, and double-click [01 UNDEFINED].
5 Select the using Σ-V series of [Slave] dialog box, and click [OK].
6 Set "1" to the circuit number of [SVC].
7 Set "3" to the station address of the added V-series.

8 Write the settings to the MPU-01 series.

IMPORTANT
- To write the settings, select the [Save to flash after transferring to the controller] check box.
  If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

◆ Σ-V Series Setting

Set up communication settings with rotary switches (S1 and S2).

For details on communication settings, please refer to the manual of the External Device.

Rotary Switch	Settings	Setup Description
S1 (x16)	0	Station address
S2 (x1)	3	

◆ Notes

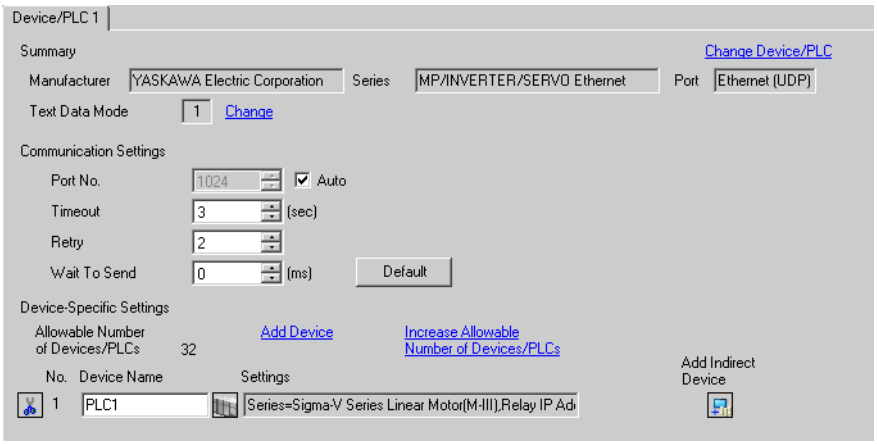
- Check with a network administrator about IP address. Do not set the duplicate IP address.

3.14 Setting Example 14

■ Settings of GP-Pro EX

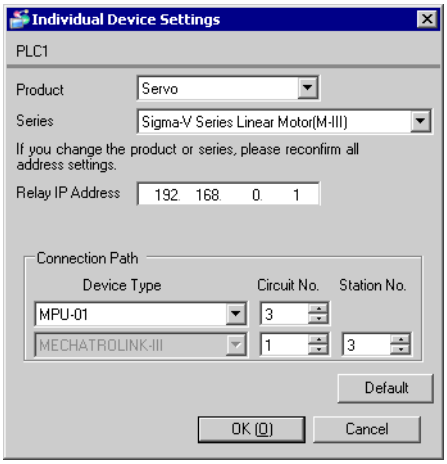
◆ Communication Settings

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



◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set IP address on the Display in the offline mode of the Display.

■ Settings of External Device

Use the ladder software (MP720 Ver.7) to set up communication settings. Set the next contents.

(1) Main CPU settings

(2) MPU-01 settings

(3) Σ-Vseries settings

For details on communication settings, please refer to the manual of the External Device.

◆ Main CPU Settings

1 Start the ladder software.
2 Make a project file. Select the main CPU models from [Model].
3 From the tree view, double-click [Module Configuration].
[MC-Configurator] starts.
4 Double-click [218IFD] on the CPU to use.
5 Click [Parameters] tab.
6 Set "IP Address" and "Subnet Mask" of "Transmission Parameters".

Setup Items	Setup Description
IP Address	192.168.0.1
Subnet Mask	255.255.255.0

7 Double-click the module number corresponding to the option slot which attaches MPU-01 in the [MC-Configurator]
8 Select [MPU-01] in the [Module] dialog box, and click [OK].
9 Set "3" to the circuit number of MPU-01 that displayed in the [MC-Configurator].
Set up the same value as the Display's circuit number.
10 Write the settings to the External Device.

IMPORTANT
- To write the settings, select the [Save to flash after transferring to the controller] check box.
If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

◆ MPU-01 Settings

1 Start the ladder software.
2 Make a project file. Select "MPU-01" from [Model].
3 From the tree view, double-click [Module Configuration].
[MC-Configurator] starts.
4 Expand [SVC] of [MPU-01] module, and double-click [01 UNDEFINED].
5 Select the using Σ-V series of [Slave] dialog box, and click [OK].
6 Set "1" to the circuit number of [SVC].
7 Set "3" to the station address of the added V-series.

8 Write the settings to the MPU-01 series.

IMPORTANT
- To write the settings, select the [Save to flash after transferring to the controller] check box.
  If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

◆ Σ-V Series Setting

Set up communication settings with rotary switches (S1 and S2).

For details on communication settings, please refer to the manual of the External Device.

Rotary Switch	Settings	Setup Description
S1 (x16)	0	Station address
S2 (x1)	3	

◆ Notes

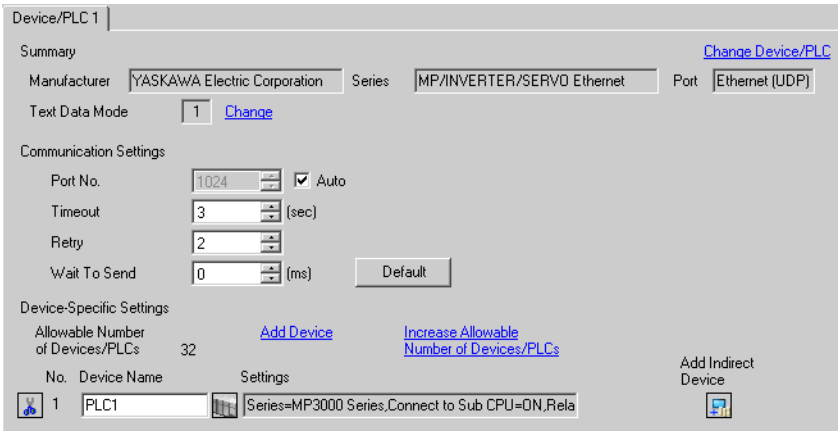
- Check with a network administrator about IP address. Do not set the duplicate IP address.

3.15 Setting Example 15

■ Settings of GP-Pro EX

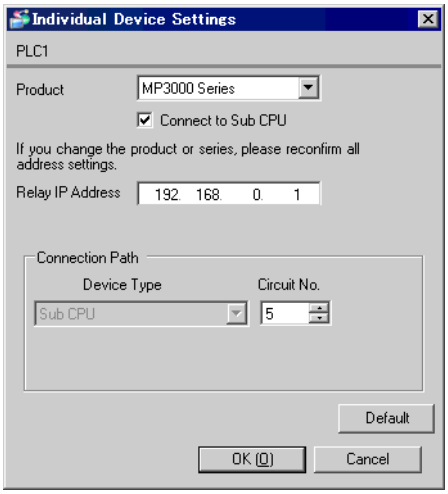
◆ Communication Settings

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



◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set IP address on the Display in the offline mode of the Display.

■ Settings of External Device

Use the ladder software (MP720 Ver.7) to set up communication settings.

For details on communication settings, please refer to the manual of the External Device.

1 Start the ladder software.

2 Make a project file. Select the main CPU models from [Model].

3 From the tree view, double-click [Module Configuration].

[MC-Configurator] starts.

4 Double-click [218IFD] on the CPU to use.

5 Click [Parameters] tab.

6 Set "IP Address" and "Subnet Mask" of "Transmission Parameters".

Setup Items	Setup Description
IP Address	192.168.0.1
Subnet Mask	255.255.255.0

7 Double-click the number of module which attaches a sub CPU in [MC-Configurator].

8 Select a sub CPU to be used in the [Module] dialog box, and click [OK].

9 Set "5" to the circuit number of Sub CPU that displayed in the [MC-Configurator].

Set up the same value as the Display's circuit number.

10 Write the settings to the External Device.

IMPORTANT
- To write the settings, select the [Save to flash after transferring to the controller] check box.
  If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

◆ Notes

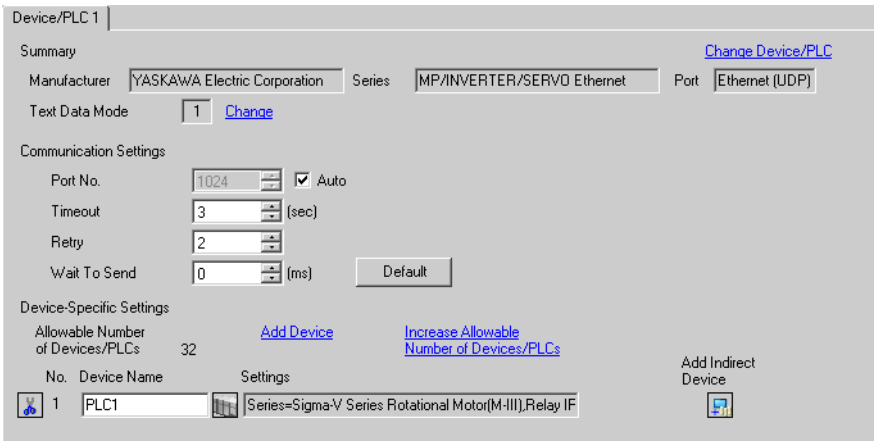
- Check with a network administrator about IP address. Do not set the duplicate IP address.

3.16 Setting Example 16

■ Settings of GP-Pro EX

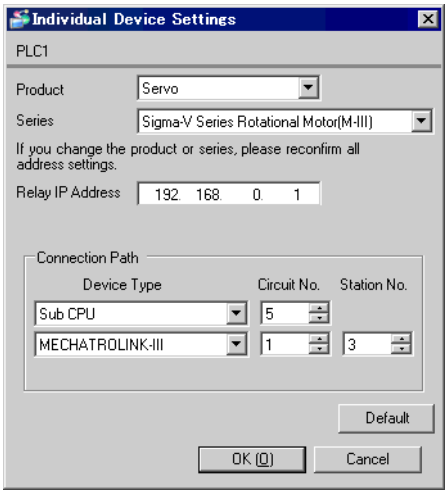
◆ Communication Settings

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



◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set IP address on the Display in the offline mode of the Display.

■ Settings of External Device

Use the ladder software (MP720 Ver.7) to set up communication settings. Set the next contents.

(4) Main CPU settings

(5) Sub CPU settings

(6) Σ-Vseries settings

For details on communication settings, please refer to the manual of the External Device.

◆ Main CPU Settings

1 Start the ladder software.
2 Make a project file. Select the main CPU models from [Model].
3 From the tree view, double-click [Module Configuration].
[MC-Configurator] starts.
4 Double-click [218IFD] on the CPU to use.
5 Click [Parameters] tab.
6 Set "IP Address" and "Subnet Mask" of "Transmission Parameters".

Setup Items	Setup Description
IP Address	192.168.0.1
Subnet Mask	255.255.255.0

7 Double-click the number of module which attaches a sub CPU in [MC-Configurator].
8 Select a sub CPU to be used in the [Module] dialog box, and click [OK].
9 Set "5" to the circuit number of Sub CPU that displayed in the [MC-Configurator].
Set up the same value as the Display's circuit number.
10 Write the settings to the External Device.

IMPORTANT
- To write the settings, select the [Save to flash after transferring to the controller] check box.
If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

◆ Sub CPU Settings

1 Start the ladder software.
2 Make a project file. Select a Sub CPU to be used from [Model].
3 From the tree view, double-click [Module Configuration].
[MC-Configurator] starts.
4 Expand [SVC] of Sub CPU, and double-click [01 UNDEFINED].
5 Select the using Σ-V series of [Slave] dialog box, and click [OK].
6 Set "1" to the circuit number of [SVC].
7 Set "3" to the station address of the added V-series.

8 Write the settings to the Sub CPU.

IMPORTANT
- To write the settings, select the [Save to flash after transferring to the controller] check box.
  If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

◆ Σ-V Series Setting

Set up communication settings with rotary switches (S1 and S2).

For details on communication settings, please refer to the manual of the External Device.

Rotary Switch	Settings	Setup Description
S1 (x16)	0	Station address
S2 (x1)	3	

◆ Notes

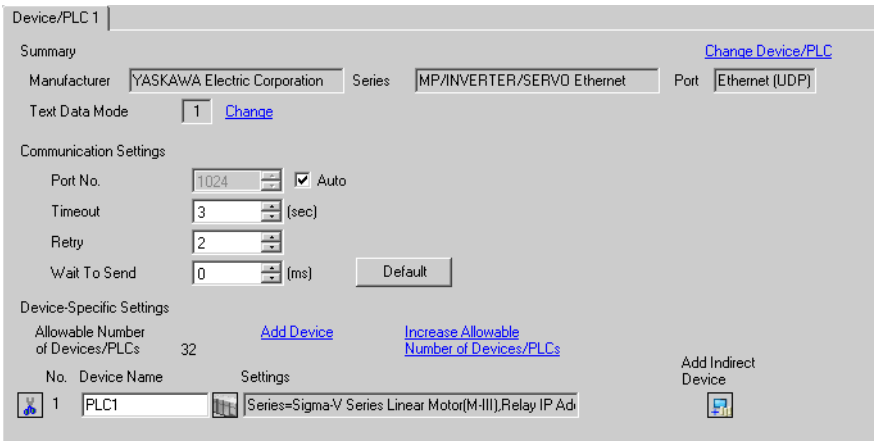
- Check with a network administrator about IP address. Do not set the duplicate IP address.

3.17 Setting Example 17

■ Settings of GP-Pro EX

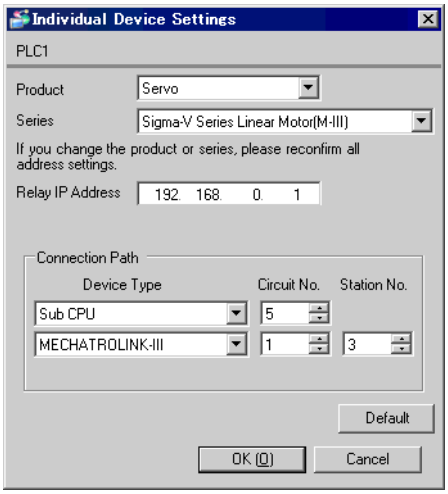
◆ Communication Settings

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



◆ 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.



◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.
- Set IP address on the External Device address in the [Individual Device Settings] dialog box.
- You need to set IP address on the Display in the offline mode of the Display.

■ Settings of External Device

Use the ladder software (MP720 Ver.7) to set up communication settings. Set the next contents.

(1) Main CPU settings

(2) Sub CPU settings

(3) Σ-Vseries settings

For details on communication settings, please refer to the manual of the External Device.

◆ Main CPU Settings

1 Start the ladder software.
2 Make a project file. Select the main CPU models from [Model].
3 From the tree view, double-click [Module Configuration].
[MC-Configurator] starts.
4 Double-click [218IFD] on the CPU to use.
5 Click [Parameters] tab.
6 Set "IP Address" and "Subnet Mask" of "Transmission Parameters".

Setup Items	Setup Description
IP Address	192.168.0.1
Subnet Mask	255.255.255.0

7 Double-click the number of module which attaches a sub CPU in [MC-Configurator].
8 Select a sub CPU to be used in the [Module] dialog box, and click [OK].
9 Set "5" to the circuit number of Sub CPU that displayed in the [MC-Configurator].
Set up the same value as the Display's circuit number.
10 Write the settings to the External Device.

IMPORTANT
- To write the settings, select the [Save to flash after transferring to the controller] check box.
If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

◆ Sub CPU Settings

1 Start the ladder software.
2 Make a project file. Select a sub CPU to be used from [Model].
3 From the tree view, double-click [Module Configuration].
[MC-Configurator] starts.
4 Expand [SVC] of Sub CPU, and double-click [01 UNDEFINED].
5 Select the using Σ-V series of [Slave] dialog box, and click [OK].
6 Set "1" to the circuit number of [SVC].
7 Set "3" to the station address of the added V-series.

8 Write the settings to the Sub CPU.

IMPORTANT
- To write the settings, select the [Save to flash after transferring to the controller] check box.
  If the data is transferred without selecting the check box, the transferred data is deleted when restarting the External Device.

◆ Σ-V Series Setting

Set up communication settings with rotary switches (S1 and S2).

For details on communication settings, please refer to the manual of the External Device.

Rotary Switch	Settings	Setup Description
S1 (x16)	0	Station address
S2 (x1)	3	

◆ Notes

- Check with a network administrator about IP address. Do not set the duplicate IP address.

4 Setup Items

Set up the Display's communication settings in GP Pro-EX or in the Display's offline mode.

The setting of each parameter must match that of the External Device.

☞"3 Communication Settings" (page 13)

NOTE

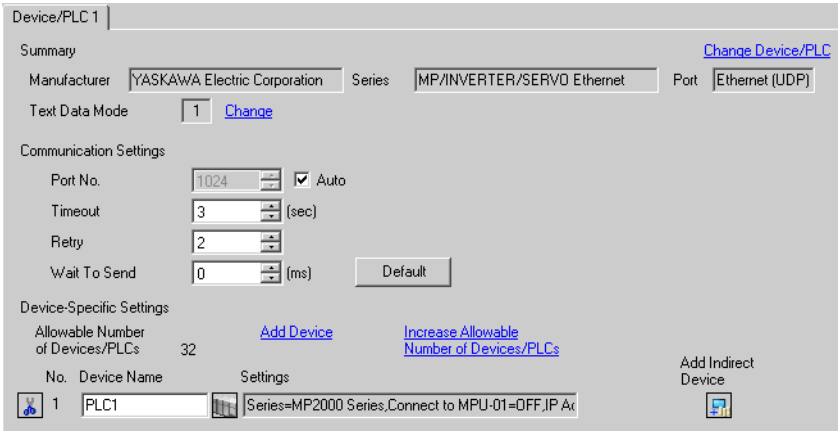
- Set the Display's IP address in offline mode.

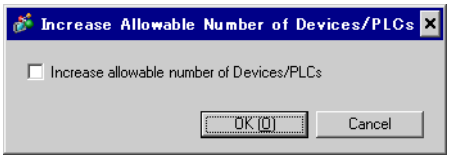
  Cf. Maintenance/Troubleshooting Guide "Ethernet Settings"

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].



Setup Items	Setup Description
Port No.	Enter a port number of the External Device, using 1024 to 65535. Check into [Auto], and a port number is set automatically.
Timeout	Use an integer from 1 to 127 to enter the time (s) for which Display waits for the response from 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.
Increase Allowable Number of Devices/ PLCs	When clicked, the [Increase Allowable Number of Devices/PLCs] dialog box is displayed. When you check [Increase allowable number of Devices/PLCs], the settings for [Allowable Number of Devices/PLCs] can be extended to "64". 

NOTE

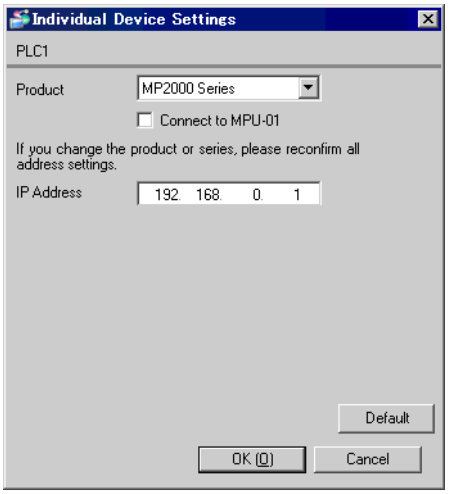
- Refer to the GP-Pro EX Reference Manual for Indirect Device.

  Cf. GP-Pro EX Reference Manual "Changing the Device/PLC at Runtime (Indirect Device)"

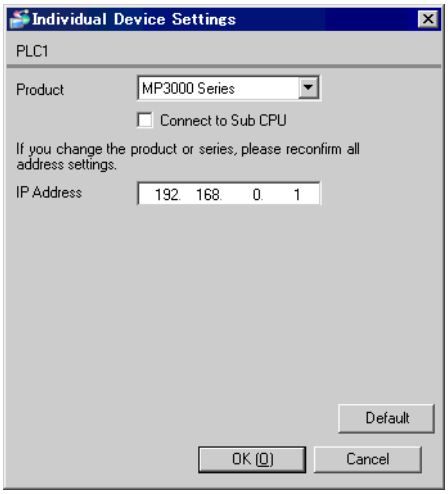
◆ Device Setting

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.

MP2000 Series

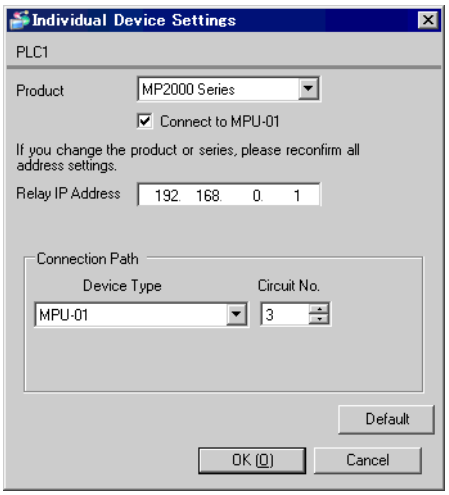


MP3000 Series

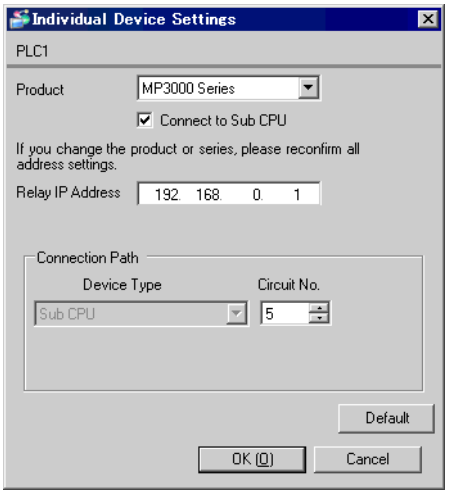


Setup Items	Setup Description
Product	Select the product name of the External Device.
Connect to MPU-01 / Connect to Sub CPU	Uncheck the check box when communicating with MP2000 series / MP3000 series.
IP Address	Set IP address of the External Device. **NOTE** • Check with a network administrator about IP address. Do not set the duplicate IP address.

MPU-01

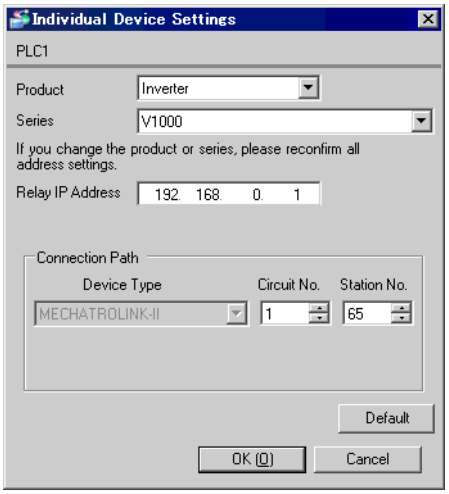


Sub CPU

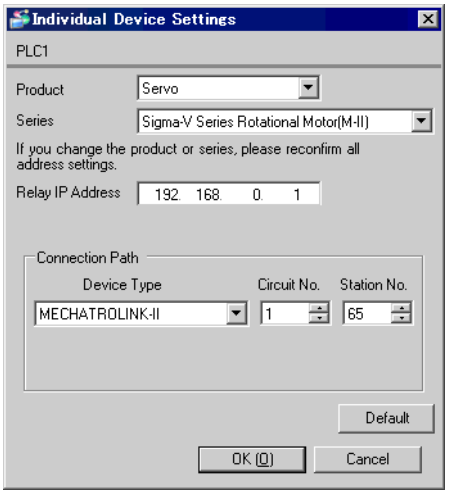


Setup Items	Setup Description
Product	Select the product name of the External Device.
Connect to MPU-01 / Connect to Sub CPU	Check the check box when using MPU-01 and Sub CPU. **NOTE** Uncheck the check box when using an Ethernet port on the Sub CPU.
Relay IP Address	Set IP address of the relay device (MP Series). **NOTE** • Check with a network administrator about IP address. Do not set the duplicate IP address.
Device Type	Select a device type to be used for relay.
Circuit No.	Enter the circuit number, from 1 to 16.

Inverter Series



Σ-V Series



Setup Items	Setup Description
Product	Select the product name of the External Device.
Series	Select the series of the External Device.
Relay IP Address	Set IP address of the relay device (MP Series). **NOTE** • Check with a network administrator about IP address. Do not set the duplicate IP address.
Device Type	Select a device type to be used for relay.
Circuit No.	Enter the circuit number, from 1 to 16.
Station No.	Inverter Series: Enter the station number, from 1 to 255. Σ-V Series: Enter the station number as follows. MECHATROLINK-II: "65 to 79" and "80 to 95" MECHATROLINK-III: "3 to 239"

IMPORTANT

- When communicating with the Σ-V Series, the first three octets in the subnet mask should be set to 255.
  e.g.: 255.255.255.0

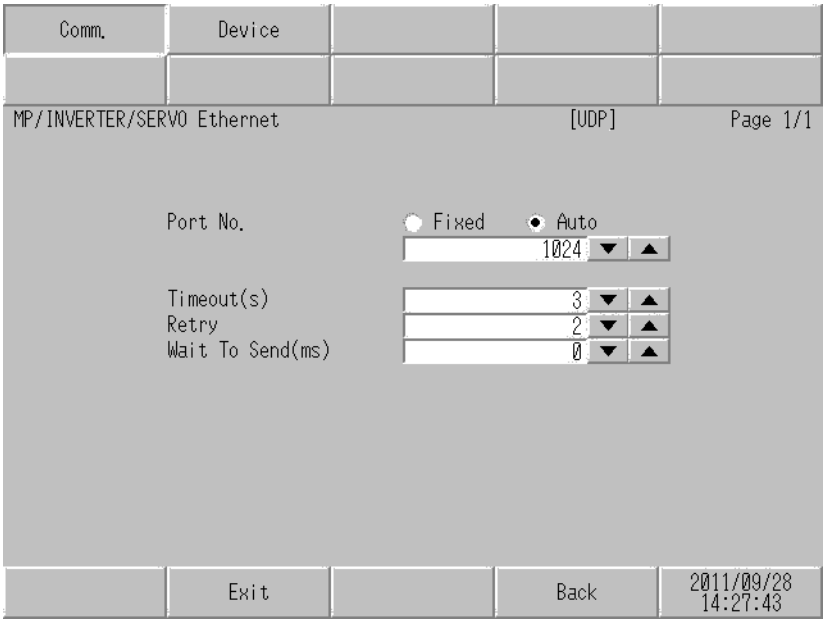
4.2 Setup Items in Offline Mode

NOTE

- Please refer to Maintenance/Troubleshooting Guide for more information on how to enter offline mode or about operation.
  Cf. Maintenance/Troubleshooting Guide "Offline Mode"
- The number of the setup items to be displayed for 1 page in the offline mode depends on the Display in use. Please refer to the Reference manual for details.

◆ 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.



Setup Items	Setup Description
Port No.	Enter a port number of the Display. Select either of "Fixed" "Auto". Enter a port number of the Display with "1024-65535", when select "Fixed". Assign automatically without affecting the input value, when select "Auto".
Timeout	Use an integer from 1 to 127 to enter the time (s) for which Display waits for the response from 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.

■ Device Setting

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, and touch [Device].

Setup Items	Setup Description
Device/PLC Name	Select the External Device for device setting. Device name is a title of the External Device set with GP-Pro EX. (Initial value [PLC1])
Series	Display the series of the External Device.
IP Address	Set IP addresses used by the External Device or relay device (MP Series). **NOTE** • Check with a network administrator about IP address. Do not set the duplicate IP address.

5 Supported Devices

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 connecting equipment.

5.1 MP2000 Series / MPU-01

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Notes
System registers	SB000000 - SB08191F	SW00000 - SW08191	L/H	
Input registers	IB00000 - IBFFFFF	IW0000 - IWFFFF		*1
Output registers	OB00000 - OBFFFFF	OW0000 - OWFFFF		*1
Data registers	MB000000 - MB65534F	MW00000 - MW65534		

*1 As for Input and Output registers, device 0x9000-0xFFFF cannot be written.

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 MP3000 Series / Sub CPU

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Notes
System registers	SB000000 - SB65534F	SW00000 - SW65534	L/H	
Input registers	IB000000 - IB27FFFF	IW00000 - IW27FFF		*1
Output registers	OB000000 - OB27FFFF	OW00000 - OW27FFF		*1
Data registers	MB00000000 - MB1048575F	MW0000000 - MW1048575		
G registers	GB000000000 - GB02097151F	GW00000000 - GW02097151		

*1 As for Input and Output registers, device 0x9000-0xFFFF cannot be written.

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 Inverter Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Notes
Bit registers*1	BR0000.0 - BR195C.F	-	-	*2
Registers*1	-	0000~195C	L/H	Bit F *2

*1 In the Inverter, bit registers and registers use the same device. Bit registers are used only for bit addresses.
The access method when specifying bits varies depending on the device.

Bit registers.....BR0000.0 - BR195C.F

Registers ..... Bit F

*2 The available register numbers and available read/write operations differ depending on the External Device model. For further information, refer to the instruction manual for your External Device.

NOTE

- You can only set the Read Area Size for the system area in the External Device. Please refer to the GP-Pro EX Reference Manual for Read Area Size.
- 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 Σ-V Series

This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Notes
Normal Parameters Area	0000.0 - 0FFF.F	0000 - 0FFF	L/H	*1 *2
Temporary Parameters Area	1000.0 - 1FFF.F	1000 - 1FFF		*1 *2
Monitor Area	E000.0 - EFFF.F	E000 - EFFF		*1 *2

*1 When you write to the bit address, the Display reads the entire word, sets the defined bit, then returns the new word value to the External Device. If the ladder program writes data to this word address during the bit write process, the resulting data may be incorrect.

*2 The following addresses are 32 bit parameters. Please use two words when reading or writing.

• Normal Parameters Area

020AH / 020EH / 0210H / 0212H / 0282H / 051BH / 0520H / 0522H / 0524H / 0526H / 0531H / 0804H / 0806H / 0808H / 0814H / 0819H / 0820H / 0822H / 0834H / 0836H / 0838H / 083AH / 083CH / 083EH / 0840H / 0890H / 0892H / 0894H / 0896H / 0898H / 089AH / 089CH / 089EH / 08A0H / 08A2H / 08A4H / 08A6H / 08A8H / 08AAH / 08ACH / 08AEH / 08B0H / 08B2H / 08B4H / 08B6H / 08B8H / 08BAH / 08BCH / 08BEH / 0A02H / 0A04H / 0A06H / 0A08H / 0A0AH / 0A0CH / 0A0EH / 0A10H / 0A12H / 0A14H / 0A16H / 0A18H / 0A42H / 0A44H / 0A46H / 0A48H / 0A4AH / 0A4CH / 0A4EH / 0A50H / 0A52H / 0A82H / 0A84H / 0A86H / 0A88H / 0A8AH / 0A8CH / 0A8EH / 0A90H / 0A92H / 0AC2H / 0AC4H / 0AC6H / 0AC8H / 0ACAH / 0ACCH / 0ACEH / 0B02H / 0B04H / 0B06H / 0B08H / 0B0AH / 0B0CH / 0B0EH / 0B10H / 0B12H / 0B14H / 0B16H / 0B18H / 0B1AH / 0B1CH / 0B1EH / 0B20H / 0B22H / 0B24H / 0B26H /

• Temporary Parameters Area

120AH / 120EH / 1210H / 1212H / 1282H / 151BH / 1520H / 1522H / 1524H / 1526H / 1531H / 1804H / 1806H / 1808H / 1814H / 1819H / 1820H / 1822H / 1834H / 1836H / 1838H / 183AH / 183CH / 183EH / 1840H / 1890H / 1892H / 1894H / 1896H / 1898H / 189AH / 189CH / 189EH / 18A0H / 18A2H / 18A4H / 18A6H / 18A8H / 18AAH / 18ACH / 18AEH / 18B0H / 18B2H / 18B4H / 18B6H / 18B8H / 18BAH / 18BCH / 18BEH / 1A02H / 1A04H / 1A06H / 1A08H / 1A0AH / 1A0CH / 1A0EH / 1A10H / 1A12H / 1A14H / 1A16H / 1A18H / 1A42H / 1A44H / 1A46H / 1A48H / 1A4AH / 1A4CH / 1A4EH / 1A50H / 1A52H / 1A82H / 1A84H / 1A86H / 1A88H / 1A8AH / 1A8CH / 1A8EH / 1A90H / 1A92H / 1AC2H / 1AC4H / 1AC6H / 1AC8H / 1ACAH / 1ACCH / 1ACEH / 1B02H / 1B04H / 1B06H / 1B08H / 1B0AH / 1B0CH / 1B0EH / 1B10H / 1B12H / 1B14H / 1B16H / 1B18H / 1B1AH / 1B1CH / 1B1EH / 1B20H / 1B22H / 1B24H / 1B26H /

• Monitor Area

E003H / E009H / E00EH / E010H / E012H / E016H / E01BH / E084H / E52AH / E52CH / E52EH / E530H / E532H / E534H / E536H / E538H / E53AH / E53CH / E601H / E603H / E605H / E707H

NOTE

- You can only set the Read Area Size for the system area available to use in the External Device. Please refer to the GP-Pro EX Reference Manual for Read Area Size.
- 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"

■ Normal Parameters Area

This area is used to map the External Device's user constant parameters. The register number is defined by adding the Pn number and the offset value. The normal parameters area offset value is 0000H.

For details on the Pn number and register mapping, please refer to the manual of the External Device.

Operation	Description
Read	Reads volatile memory such as RAM for values. Unable to read values from non-volatile memory such as EEPROM.
Write	Writes values to volatile memory such as RAM, and non-volatile memory such as EEPROM.

NOTE

- You cannot run consecutive reads from, or consecutive writes to, different register groups. Example: When consecutively reading from or writing to 07FFH to 0800H, the message "Data Consistency Error (33H)" or "Access Denied Error (31H)" is displayed.
- If you specify a nonexistent register number, the message "Access Denied Error (31H)," is displayed.

■ Temporary Parameters Area

This area is used to map the External Device's user constant parameters. The register number is defined by adding the Pn number and the offset value. The temporary parameters area offset value is 1000H.

For details on the Pn number and register mapping, please refer to the manual of the External Device.

Operation	Description
Read	Reads volatile memory such as RAM for values.
Write	Writes values to volatile memory such as RAM.

Since writing to Temporary Parameters Area is run in volatile memory (such as RAM), values are cleared when the External Device is turned OFF.

If there is an operation, such as servo tuning, that requires an extreme number of write operations to memory, running the operation in the Temporary Parameters Area generates the following advantages.

- You can increase the life of non-volatile memory.
- You can reduce processing time.

NOTE

- You cannot run consecutive reads from, or consecutive writes to, different register groups. Example: When consecutively reading from or writing to 07FFH to 0800H, the message "Data Consistency Error (33H)" or "Access Denied Error (31H)" is displayed.
- If you specify a nonexistent register number, the message "Access Denied Error (31H)," is displayed.

■ Monitor Area

This area is used to reference internal information (such as operating condition, alarm status, and various status flags) on the External Device. By referring to the value of a register number, you can check the status of the External Device. While the External Device is running, register values change constantly.

Register No.	Name	Unit	No. of Registers	Sign	Remarks
E000H	Motor Rotational/Translational Speed	Rotary: min^{-1} Linear: mm/s	1	S	Un000
E001H	Reference Speed	Rotary: min^{-1} Linear: mm/s	1	S	Un001
E002H	Internal Torque/Thrust Force Reference	%	1	S	Un002
E003H	Rotational Angle 1 (Number of Pulses from the Origin)	Pulse	2	U	Un003
E005H	Rotational Angle 2 (Angle from the Origin)	deg	1	U	Un004
E006H	Input Signal Monitor	-	1	-	Un005
E007H	Output Signal Monitor	-	1	-	Un006
E008H	Input Reference Pulse Speed	Rotary: min^{-1} Linear: mm/s	1	S	Un007
E009H	Position Error Counter	Reference unit	2	S	Un008
E00BH	Accumulated Load Rate	%(10s cycle)	1	U	Un009
E00CH	Regenerative Load Rate	%(10s cycle)	1	U	Un00A
E00DH	Dynamic Break Consumption Power	%(10s cycle)	1	U	Un00B
E00EH	Input Reference Pulse Counter (32bit)	Pulse	2	S	Un00C
E010H	Feedback Pulse Counter (32bit)	Pulse	2	S	Un00D
E012H	Fully-closed Feedback Pulse Counter (32bit)	Pulse	2	S	Un00E
E016H	Total Operation Time	100ms	2	U	Un012
E018H	Upper Limit of Maximum Motor Speed	mm/s	1	U	Un010 (Available only in linear motor)
E019H	Upper Limit of Divided Pulse Output Setting	Pulse/Pitch	1	U	Un010 (Available only in linear motor)
E01AH	Magnetic Pole Sensor Information	-	1	-	Un011
E01BH	Feedback Pulse Counter	Reference unit	2	S	Un013
E01DH	Effective Gain Set Number	-	1	U	Un014
E01EH	Safety I/O Signal Monitor	-	1	-	Un015
E084H	Linear Scale Pitch	pm	2	U	Un084
E086H	Linear Scale Pitch Scaling Exponent	Power of Ten	1	S	Un085

Register No.	Name	Unit	No. of Registers	Sign	Remarks
E500H	Alarm History Alarm Code No. = 0	Code	1	U	Fn000-0
E501H	Alarm History Alarm Code No. = 1	Code	1	U	Fn000-1
E502H	Alarm History Alarm Code No. = 2	Code	1	U	Fn000-2
E503H	Alarm History Alarm Code No. = 3	Code	1	U	Fn000-3
E504H	Alarm History Alarm Code No. = 4	Code	1	U	Fn000-4
E505H	Alarm History Alarm Code No. = 5	Code	1	U	Fn000-5
E506H	Alarm History Alarm Code No. = 6	Code	1	U	Fn000-6
E507H	Alarm History Alarm Code No. = 7	Code	1	U	Fn000-7
E508H	Alarm History Alarm Code No. = 8	Code	1	U	Fn000-8
E509H	Alarm History Alarm Code No. = 9	Code	1	U	Fn000-9
E50AH	Current Alarm Information	Code	1	U	
E51BH	Servo Running Status	-	1	U	
E51CH	Control Mode Status	-	1	U	
E52AH	Alarm History Time Stamp No. = 0	100ms	2	U	
E52CH	Alarm History Time Stamp No. = 1	100ms	2	U	
E52EH	Alarm History Time Stamp No. = 2	100ms	2	U	
E530H	Alarm History Time Stamp No. = 3	100ms	2	U	
E532H	Alarm History Time Stamp No. = 4	100ms	2	U	
E534H	Alarm History Time Stamp No. = 5	100ms	2	U	
E536H	Alarm History Time Stamp No. = 6	100ms	2	U	
E538H	Alarm History Time Stamp No. = 7	100ms	2	U	
E53AH	Alarm History Time Stamp No. = 8	100ms	2	U	
E53CH	Alarm History Time Stamp No. = 9	100ms	2	U	

- Input Signal Monitor (E006H)

  MECHATROLINK Interface Type

Bit	Status Signal	Logic	Un No.
0	SI0(CN1-13)	0 = Lo (Close) 1 = Hi (Open)	Un005
1	SI1(CN1-7)	0 = Lo (Close) 1 = Hi (Open)	
2	SI2(CN1-8)	0 = Lo (Close) 1 = Hi (Open)	
3	SI3(CN1-9)	0 = Lo (Close) 1 = Hi (Open)	
4	SI4(CN1-10)	0 = Lo (Close) 1 = Hi (Open)	
5	SI5(CN1-11)	0 = Lo (Close) 1 = Hi (Open)	
6	SI6(CN1-12)	0 = Lo (Close) 1 = Hi (Open)	
7	Reserved		

- Output Signal Monitor (E007H)

  MECHATROLINK Interface Type

Bit	Status Signal	Logic	Un No.
0	ALM(CN1-3,4)	0 = Lo (Close) 1 = Hi (Open)	Un006
1	SO1(CN1-1,2)	0 = Lo (Close) 1 = Hi (Open)	
2	SO2(CN1-23,24)	0 = Lo (Close) 1 = Hi (Open)	
3	SO3(CN1-25,26)	0 = Lo (Close) 1 = Hi (Open)	
4	Reserved		
5	Reserved		
6	Reserved		
7	Reserved		

- Safety I/O Signal Monitor (E01EH)

Bit	Status Signal	Logic	Un No.
0	/HWBB1(CN8-3,4)	0 = Lo (Close) 1 = Hi (Open)	Un015
1	/HWBB2(CN8-5,6)	0 = Lo (Close) 1 = Hi (Open)	
2 to 7	Reserved		

NOTE

- /HWBB1 and /HWBB2 are valid only when the safety option card is not connected. When the safety option card is connected, they become indefinite.

- Servo Running Status (E51BH)

Reading	Description
0000H	Reserved (Initial State)
0001H	Alarm Occurred (A.***)
0002H	Hardwired Base Blocked (HWBB)
0003H	Forward / Reverse Run Prohibited (PTNT)
0004H	Forward Run Prohibited (P-OT)
0005H	Reverse Run Prohibited (N-OT)
0006H	Base Blocked (BB)
0007H	Base Enabled (RUN)
0008H	Magnetic Pole Detecting (PDET)

- Control Mode Status (E51CH)

Reading	Description
0000H	Speed Control Mode
0001H	Position Control Mode
0002H	Torque Control Mode

NOTE

- JOG Drive Mode, Origin Search Mode, and Internally Set Speed Control Mode become Speed control mode.
- Programmed JOG Drive Mode, Advanced Auto-Tuning Mode, and Easy FFT Mode become Position Control Mode.

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.

6.1 MP2000 Series / MPU-01

Device	Device Name	Device Code (HEX)	Address Code
System registers	SW/SB	0080	Word address
Input registers	IW/IB	0001	Word address
Output registers	OW/OB	0081	Word address
Data registers	MW/MB	0000	Word address

6.2 MP3000 Series / Sub CPU

Device	Device Name	Device Code (HEX)	Address Code
System registers	SW/SB	0080	Word address
Input registers	IW/IB	0001	Word address
Output registers	OW/OB	0081	Word address
Data registers	MW/MB	0000	Word address
G registers	GW/GB	0002	Word address

6.3 Inverter Series

Device	Device Name	Device Code (HEX)	Address Code
Bit registers	BR	0080	Address
Registers	-	0000	Address

6.4 Σ-V Series

Device	Device Name	Device Code (HEX)	Address Code
Normal Parameters Area	0	0000	Word address
Temporary Parameters Area	1	0001	Word address
Monitor Area	E	0009	Word address

7 Error Messages

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

Item	Description
No.	Error No.
Device Name	Name of External Device where error occurs. Device name is a title of External Device set with GP-Pro EX.((Initial value [PLC1])
Error Message	Displays messages related to the error which occurs.
Error Occurrence Area	Displays IP address or device address of External Device where error occurs, or error codes received from External Device. **NOTE** • 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

- Please refer to the manual of External Device for more detail of received error codes.
- Please refer to "Display-related errors" of "Maintenance/Troubleshooting Guide" for a common error message to the driver.

7.1 MP Series

■ Error Codes Unique to External Device

Error code	Description
0x90	Transfer error.
0x92	Illegal parameter.
0x96	Register No. over.
0x9C	File is modified.
0x9D	Data access error.

■ Error Messages Unique to External Device

Message ID	Error Message	Description
RHxx128	"(Node Name):PLC is busy now(Error Code: [Hex])"	PLC is "Busy"
RHxx129	"(Node Name):Option module is not mounted(Error Code: [Hex])"	Option module not mount.
RHxx130	"(Node Name):Module is not ready(Error Code: [Hex])"	Module is not ready
RHxx131	"(Node Name):CPU is stopped(Error Code: [Hex])"	CPU is stopped
RHxx132	"(Node Name): Write protected(Error Code: [Hex])"	Write protected

7.2 Inverter Series

■ Error Codes Unique to External Device

Error code	Description
0x01	Function code error
0x02	Invalid register number error
0x03	Invalid quantity error
0x21	Date setting error
0x22	Write mode error
0x23	Main circuit undervoltage (UV) error during write
0x24	Write error during processing of constants

■ Error Messages Unique to External Device

Message ID	Error Message	Description
RHxx133	"(Node Name): The Series and Device Type is not correct. Connecting via (MECHATROLINK-II or MECHATROLINK-III)"	This message appears when the connected Device Type does not match the Inverter Series selected in offline mode. Check the Device Type.

7.3 Σ-V Series

■ Error Codes Unique to External Device

Error code	Description
0x01	Function Code Error • Unsupported function code or sub function code.
0x02	Faulty Register Number • Accessing register number that is not registered.
0x03	Faulty Quantity • The number of read or write data for reading is not between one and the maximum quantity (as defined per model). • In write mode, the number of data in the message is not the specified quantity.
0x30	Faulty Register Number (High Level) • Accessing register number that is not registered.
0x31	Access Limit Error • Access to the specified register is not permitted.
0x32	Outside Setting Range Error • The write data value is outside the maximum and minimum limit.
0x33	Data Matching Error • Tried to access only a portion of registers in the multiple register unit. • Tried to access multiple registers that exceed the register group.
0x34	Condition Error • Command message content cannot be processed due to the condition defined by the register.
0x35	Process Conflict Error • Cannot be processed due to priority issues with other channels.

■ Error Messages Unique to External Device

Message ID	Error Message	Description
RHxx133	"(Node Name): The Series and Device Type is not correct. Connecting via (MECHATROLINK-II or MECHATROLINK-III)"	This message is displayed when the connected Device Type does not match the Σ-V Series selected in offline mode. Check the Device Type.