



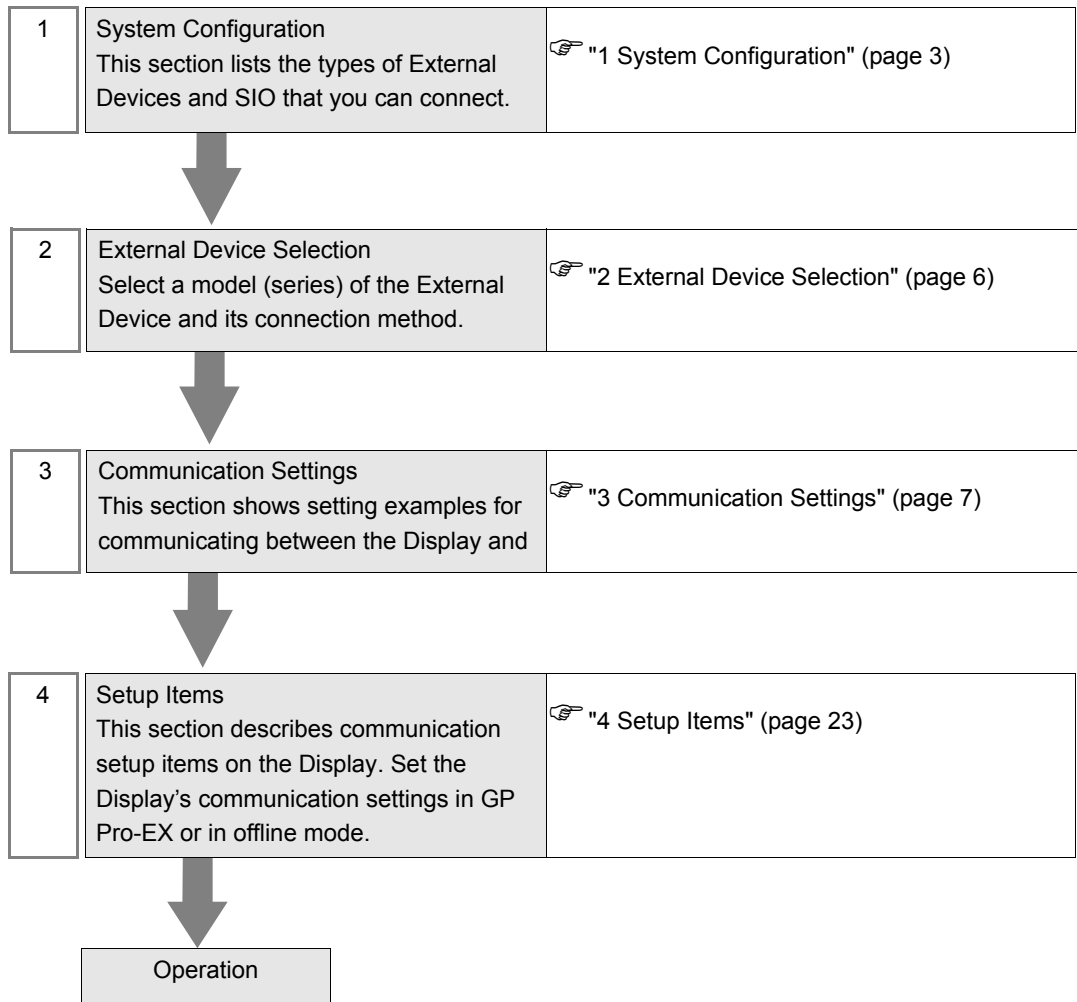
MEWTOCOL-COM Ethernet Driver

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Introduction

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

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



1 System Configuration

The system configuration in the case when the External Device of Panasonic Industrial Devices SUNX and the Display are connected is shown.

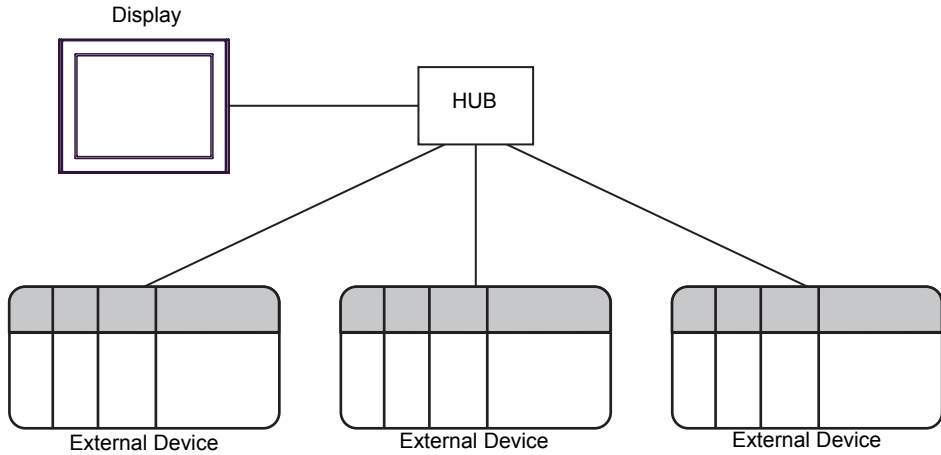
Series	CPU	Link I/F	SIO Type	Setting Example
FP7	AFP7CPS41E AFP7CPS31E AFP7CPS41ES AFP7CPS31ES	Built-In ET-LAN	Ethernet (UDP)	"3.1 Setting Example 1" (page 7)
			Ethernet (TCP)	"3.2 Setting Example 2" (page 9)
		AFP7CCET1	Ethernet (UDP)	"3.3 Setting Example 3" (page 11)
			Ethernet (TCP)	"3.4 Setting Example 4" (page 13)
	AFP7CPS31 AFP7CPS21 AFP7CPS31S	AFP7CCET1	Ethernet (UDP)	"3.3 Setting Example 3" (page 11)
			Ethernet (TCP)	"3.4 Setting Example 4" (page 13)
FP0H	AFP0HC32ET AFP0HC32EP	Built-In ET-LAN	Ethernet (UDP)	"3.5 Setting Example 5" (page 15)
			Ethernet (TCP)	"3.6 Setting Example 6" (page 17)
FP2/ FP2SH	AFP2211 AFP2212 AFP2213 AFP2221 AFP2231 AFP2235 AFP2255	AFP2790 AFP27901	Ethernet (UDP)	"3.7 Setting Example 7" (page 19)
			Ethernet (TCP)	"3.8 Setting Example 8" (page 21)

■ Connection Configuration

- 1:1 Connection

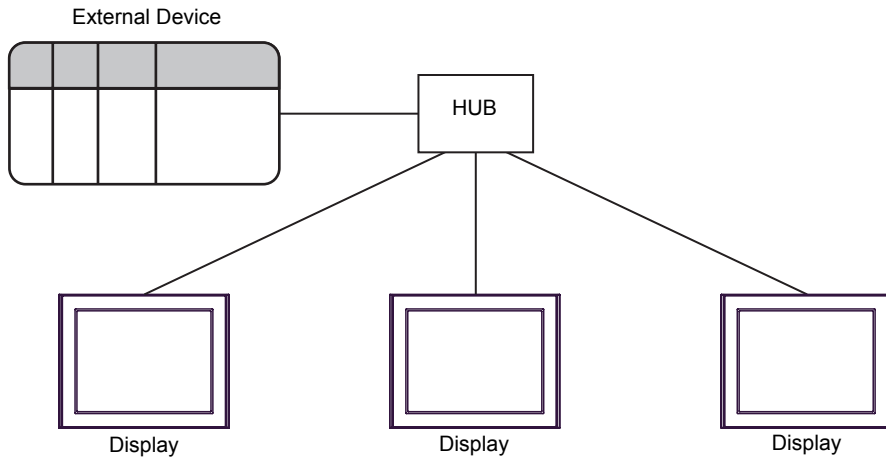


- 1:n Connection



NOTE • The maximum number of connected External Device for one Display is 32 over UDP, or 16 over TCP.

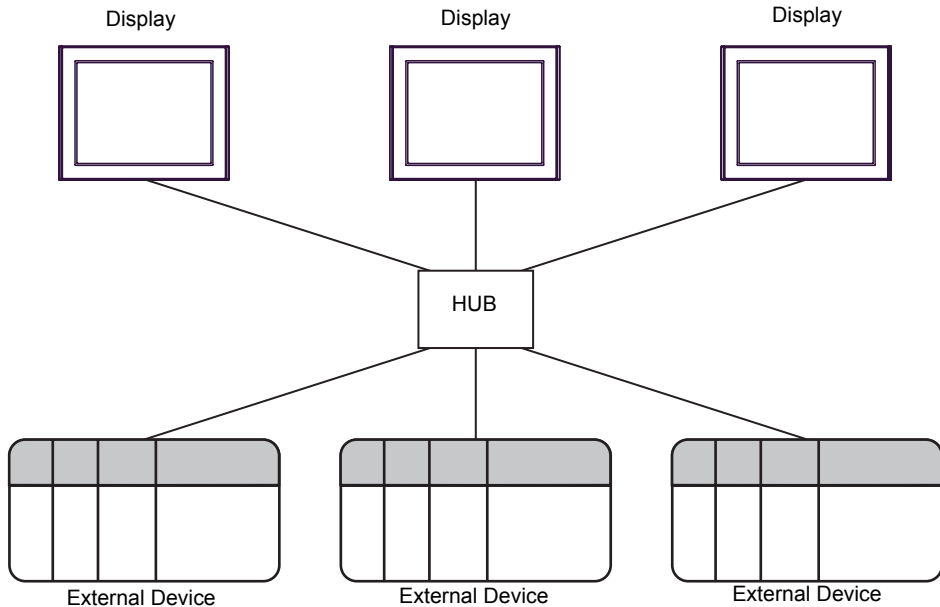
- n:1 Connection



NOTE • The maximum number of connected Displays for one External Device is as follows.

- 16 Displays via FP7 built-in ET-LAN. (total includes serial and USB connections on the CPU unit)
- 9 Displays via FP0H built-in ET-LAN.
- 4 Displays via AFP7CCET1.
- 8 Displays via AFP2790/AFP27901.

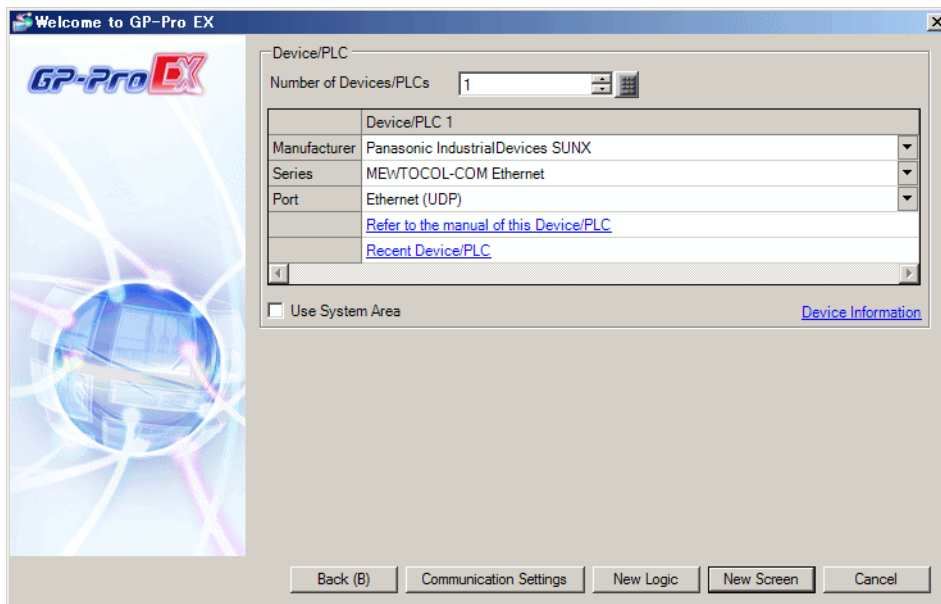
- n:m Connection


**NOTE**

- The maximum number of connected Displays for one External Device is as follows.
 - 16 Displays via FP7 built-in ET-LAN. (total includes serial and USB connections on the CPU unit)
 - 9 Displays via FP0H built-in ET-LAN.
 - 4 Displays via AFP7CCET1.
 - 8 Displays via AFP2790/AFP27901.
- The maximum number of connected External Devices for one Display is 32 over UDP, or 16 over TCP.

2 External Device Selection

Select the External Device to be connected to the Display.



Setup Items	Setup Description
Number of Devices/ PLCs	Enter an integer from 1 to 4 to define the number of Devices/PLCs to connect to the display.
Manufacturer	Select the manufacturer of the External Device to connect. Select "Panasonic Industrial Devices SUNX".
Series	Select the External Device model (series) and the connection method. Select "MEWTOCOL-COM Ethernet". In System configuration, make sure the External Device you are connecting is supported by "MEWTOCOL-COM Ethernet".  "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

This section provides examples of communication settings recommended by Pro-face for the Display and the External Device.


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.

■ External Device Settings

Use the programming software (FPWIN GR7S) to set up communication settings on the External Device.

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

- 1 Select the [Create a New Project] option and click [OK].
- 2 From [Select PLC Type], select the [FP7] option and click [OK].
- 3 In the project tree, double-click [FP7 configuration].
- 4 From the [Selection of function] window, select the [Built-in ET-LAN] option and click [OK].
- 5 From the [Built-in ET-LAN] window, click [Basic communications information].
- 6 Set the [Home IP address (IPv4)] property to "192.168.1.5".
- 7 From the [Built-in ET-LAN] window, click [User connection information settings].
- 8 Define the External Device setup items with the following values.

Setup Item	Setting description
Connection to use specification	Use
Connection type	UDP/IP
Open type (server/client)	Server connection(any destination)
Open type(automatic/manual)	Open automatically.
Operating mode setting	MEWTOCOL-7
Home port number	60001
Unused connection disconnect time	0
Destination setting method	Specify by IP address (IPv4).
Destination IP address/name	192.168.1.1
Destination port number	1024

- 9 Click [OK].

◆ 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.

■ External Device Settings

Use the programming software (FPWIN GR7S) to set up communication settings on the External Device.

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

- 1 Select the [Create a New Project] option and click [OK].
- 2 From [Select PLC Type], select the [FP7] option and click [OK].
- 3 In the project tree, double-click [FP7 configuration].
- 4 From the [Selection of function] window, select the [Built-in ET-LAN] option and click [OK].
- 5 From the [Built-in ET-LAN] window, click [Basic communications information].
- 6 Set the [Home IP address (IPv4)] property to "192.168.1.5".
- 7 From the [Built-in ET-LAN] window, click [User connection information settings].
- 8 Define the External Device setup items with the following values.

Setup Item	Setting description
Connection to use specification	Use
Connection type	TCP/IP
Open type (server/client)	Server connection(any destination)
Open type(automatic/manual)	Open automatically.
Operating mode setting	MEWTOCOL-7
Home port number	60001
Unused connection disconnect time ^{*1}	10

*1 Set Unused connection disconnect time to 10 (sec) or more.

- 9 Click [OK].

◆ 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.

■ External Device Settings

Use the configuration software (ConfiguratorWD) to set up communication settings on the External Device.

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

- 1 Start up the configuration software.
- 2 From the [Option] menu, select [Select the IP of PC] to display the [Setting IP Address] window.
- 3 Select the [Specify the IP address of PC] option, and click [OK].
- 4 From the [Search] menu, select the [Search BroadCast] option.
The connected External Device will appear.
- 5 Click the External Device to set up its IP address, and from the [Edit] menu select the [Setting IP Address] command.
- 6 Select the [Use this IP Address] option.
- 7 Set the IP Address to "192.168.1.5", and click [OK].
- 8 From the [Edit] menu, select [Communication Setting] to display the [Communication Setting] window.
- 9 Set the items to the following values, and click [OK].

Setup Item	Setting description
Protocol Mode	UDP
Action Mode	Server Mode
Communication Mode	MEWTOCOL
Source Port No.	60001
Timeout	15

- 10 Click [OK].

◆ 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.

■ External Device Settings

Use the configuration software (ConfiguratorWD) to set up communication settings on the External Device.

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

- 1 Start up the configuration software.
- 2 From the [Option] menu, select [Select the IP of PC] to display the [Setting IP Address] window.
- 3 Select the [Specify the IP address of PC] option, and click [OK].
- 4 From the [Search] menu, select the [Search BroadCast] option.
The connected External Device will appear.
- 5 Click the External Device to set up its IP address, and from the [Edit] menu select the [Setting IP Address] command.
- 6 Select the [Use this IP Address] option.
- 7 Set the IP Address to "192.168.1.5", and click [OK].
- 8 From the [Edit] menu, select [Communication Setting] to display the [Communication Setting] window.
- 9 Set the items to the following values, and click [OK].

Setup Item	Setting description
Protocol Mode	TCP
Action Mode	Server Mode
Communication Mode	MEWTOCOL
Source Port No.	60001
Timeout*1	15

*1 Set Timeout to 10 (sec) or more.

- 10 Click [OK].

◆ 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].

◆ 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

- When use FP0H, select "FP Series" from [Series]
- 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.

■ External Device Settings

Use the programming software (FPWIN GR7) to set up communication settings on the External Device.

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

- 1 Select [Create a New Project] and click [OK].
- 2 From the [Select PLC Type] window select the Series and Model then click [OK].
- 3 From the project tree double click [Ethernet settings].
- 4 From the [Ethernet settings] window click [Basic communications information].
- 5 Set items to the following values.

Setup Item	Setting description
IPv4 address automatic acquisition	No
Home IP address	192.168.1.5
Subnet mask	255.255.255.0

- 6 Click [OK].
- 7 From the [Ethernet settings] window click [Connection 1].
- 8 Set items to the following values.

Setup Item	Setting description
Connection to use specification	Use
Communication type	UDP/IP
Open type (automatic/manual)	Open automatically
Operating mode setting	MEWTOCOL-COM
MEWTOCOL communications type	Not connect with FP2 ET-LAN
Home port number	60001
Destination unit IP address	192.168.1.1
Destination port number	1024

- 9 Click [OK].
- 10 Download the project to the External Device.
- 11 Reboot the External Device.

◆ 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].

◆ 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

- When use FP0H, select "FP Series" from [Series]
- 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.

■ External Device Settings

Use the programming software (FPWIN GR7) to set up communication settings on the External Device.

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

- 1 Select [Create a New Project] and click [OK].
- 2 From the [Select PLC Type] window select the Series and Model then click [OK].
- 3 From the project tree double click [Ethernet settings].
- 4 From the [Ethernet settings] window click [Basic communications information].
- 5 Set items to the following values.

Setup Item	Setting description
IPv4 address automatic acquisition	No
Home IP address	192.168.1.5
Subnet mask	255.255.255.0

- 6 Click [OK].
- 7 From the [Ethernet settings] window click [Connection 1].
- 8 Set items to the following values.

Setup Item	Setting description
Connection to use specification	Use
Communication type	TCP/IP
Open type (server/client)	Server connection(any destination)
Open type (automatic/manual)	Open automatically
Operating mode setting	MEWTOCOL-COM
MEWTOCOL communications type	Not connect with FP2 ET-LAN
Home port number	60001
Unused connection disconnect time	0

- 9 Click [OK].
- 10 Download the project to the External Device.
- 11 Reboot the External Device.

◆ 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].

◆ 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

- When use FP2/FP2SH, select "FP Series" from [Series]
- 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.

■ External Device Settings

Use the setting tool (Control Configurator ET) to set up communication settings on the External Device.

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

- 1 Start up Control Configurator ET.
- 2 To change the communication settings, in the tree view select [Initialization Settings].
- 3 Click [Change].
- 4 To set the value for communication with the Display, in the tree view select [Connection Settings].
- 5 Click [Change].
- 6 From the [Online] menu select [Download].

◆ 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].

◆ 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

- When use FP2/FP2SH, select "FP Series" from [Series]
- 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.

■ External Device Settings

Use the setting tool (Control Configurator ET) to set up communication settings on the External Device.

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

- 1 Start up Control Configurator ET.
- 2 To change the communication settings, in the tree view select [Initialization Settings].
- 3 Click [Change].
- 4 To set the value for communication with the Display, in the tree view select [Connection Settings].
- 5 Click [Change].
- 6 From the [Online] menu select [Download].

◆ 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 7)

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

Cf. Maintenance/Troubleshooting Guide "Ethernet Settings"

4.1 Setup Items in GP-Pro EX

■ Communication Settings

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

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer Series Port

Text Data Mode [Change](#)

Communication Settings

Port No. Auto

Timeout (sec)

Retry

Wait To Send (ms)

Device-Specific Settings

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

No.	Device Name	Settings	Add Indirect Device
1	PLC1	IP Address=192.168.001.005,Port No.=60001,Series=	<input type="button" value="Add Indirect Device"/>

Setup Items	Setup Description
Port No.	Enter a port number of the External Device, using 0 to 65535. Check into [Auto], and a port number is set automatically. NOTE <ul style="list-style-type: none"> [Auto] option is available to set only when you select "Ethernet (TCP)" in [Connecting Method].
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.

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)"

- If communication is interrupted during TCP communication, reconnecting communication will take some time.

The following tables show the amount of time required from interruption to reconnection. A communication error (RHxx065) displays until connection is re-established. The communication error does not appear if the time it takes for the Display to return to RUN mode exceeds the time it takes to re-establish communication.

As the amount of time required to reconnect depends on the Display port settings, we recommend using [Auto] with WinGP, and "Set value" with a display other than WinGP.

Using WinGP

Operation	Display's port is [Set value]	Display's port is [Auto]
Enter offline mode	2 minutes ^{*1}	Immediate recovery
Reset	2 minutes ^{*1}	Immediate recovery
Restart WinGP	2 minutes ^{*1}	Immediate recovery


*1 Differs depending on the Windows [Time_Wait] setting. (Default: 120 seconds)

Using a display other than WinGP

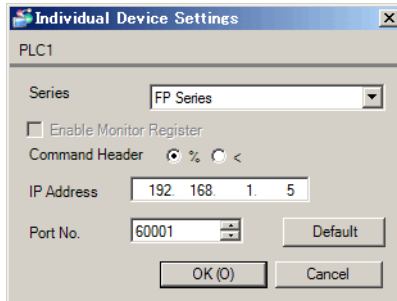
Operation	Display's port is [Set value]	Display's port is [Auto]
Enter offline mode	Immediate recovery	Immediate recovery
Reset	Immediate recovery	1 minute ^{*1}
Restart power	Immediate recovery	1 minute ^{*1}

*1 Differs depending on the External Device [Unused connection disconnect time] setting. (Default: 60 seconds)

◆ 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.



Setup Items	Setup Description
Series	Select series of the Display to use. Select "FP Series" except for FP7 series.
Enable Monitor Register	Displays the Monitor Register setting. This property is unavailable with this driver.
Command Header	Setting of communication format. Select "%" when the External Device to communicate is FP2, FP2SH, and select "<" for other models. [Command Header] option is available only when the [Series] is set to [FP Series].
IP Address	Set IP address of the External Device. <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;">NOTE</div> <ul style="list-style-type: none"> • Check with a network administrator about IP address. Do not set the duplicate IP address.
Port No.	Use an integer from 0 to 65535 to enter the port No. (Decimal) of the External Device.

4.2 Setup Items in Offline Mode

NOTE

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

Cf. Maintenance/Troubleshooting Guide "Offline Mode"

- In offline mode, the number of settings you can view on one screen varies depending on the Display in use. Please refer to the Reference Manual for more 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 list that appears.

Comm.	Device			
MEWTOCOL-COM Ethernet			[UDP]	Page 1/1
Port No.	<input checked="" type="radio"/> Fixed <input type="radio"/> Auto			
			1024	▼ ▲
Timeout(s)			5	▼ ▲
Retry			2	▼ ▲
Wait To Send(ms)			0	▼ ▲
	Exit		Back	2019/04/23 17:14:15

Setup Items	Setup Description
Port No.	Enter a port number of the Display. Select either "Fixed" or "Auto". Enter a port number of the Display with "0-65535", 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.

NOTE

- If communication is interrupted during TCP communication, reconnecting communication will take some time.

The following tables show the amount of time required from interruption to reconnection. A communication error (RHxx065) displays until connection is re-established. The communication error does not appear if the time it takes for the Display to return to RUN mode exceeds the time it takes to re-establish communication.

As the amount of time required to reconnect depends on the Display port settings, we recommend using [Auto] with WinGP, and [Fixed] with a display other than WinGP.

Using WinGP

Operation	Display's port is [Fixed]	Display's port is [Auto]
Enter offline mode	2 minutes ^{*1}	Immediate recovery
Reset	2 minutes ^{*1}	Immediate recovery
Restart WinGP	2 minutes ^{*1}	Immediate recovery

*1 Differs depending on the Windows [Time_Wait] setting. (Default: 120 seconds)

Using a display other than WinGP

Operation	Display's port is [Fixed]	Display's port is [Auto]
Enter offline mode	Immediate recovery	Immediate recovery
Reset	Immediate recovery	1 minute ^{*1}
Restart power	Immediate recovery	1 minute ^{*1}

*1 Differs depending on the External Device [Unused connection disconnect time] setting. (Default: 60 seconds)

◆ Device Setting

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

Comm.	Device			
MEWTOCOL-COM Ethernet		[UDP]	Page 1/1	
Device/PLC Name [PLC1] ▼				
Series		FP Series		
Enable Monitor Register		No		
Command Header		%		
IP Address		192 168 1 5		
Port No.		60001 ▼ ▲		
Exit		Back		2019/04/23 17:14:22

Setup Items	Setup Description
Device/PLC Name	Select the External Device to set. Device/PLC name is the title of the External Device set with GP-Pro EX. (Initial value [PLC1])
Series	Displays series of the External Device.
Enable Monitor Register	Displays the Monitor Register setting. This property is unavailable with this driver.
Command Header	Displays the setting for the communication format.
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.
Port No.	Use an integer from 0 to 65535 to enter the port No. (Decimal) of the External Device.

5 Supported Devices

The following table shows the range of supported device addresses. Please note that the actual supported range of the devices varies depending on the External Device to be used. Please check the actual range in the manual of your External Device.

5.1 FP7 Series

DT000000 : This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Remarks
External input relay	X00000 - X0511F	WX0000 - WX0511	L/H	*1
External output relay	Y00000 - Y0511F	WY0000 - WY0511		*1
Internal relay	R00000 - R02047F	WR0000 - WR2047		*1
Link relay	L00000 - L1023F	WL0000 - WL1023		*1
System relay	SR00000 - SR0223F	WS0000 - WS0223		*2
Timer(Contact)	T00000 - T04095	-		*1 *2
Counter(Contact)	C00000 - C01023	-		*1 *2
Pulse relay	P00000 - P0255F	-		*1 *2
Error alarm relay	E00000 - E04095	-		*1 *2
Direct input	IN00000 - IN0062F	WI0000 - WI0062		*2 *3
Direct output	OT00000 - OT0062F	WO0000 - WO0062		*3
Data register	DT000000.0 - DT999423.F	DT000000 - DT999423		*1
Link register	LD00000.0 - LD16383.F	LD00000 - LD16383		*1
Unit Memory	UM00000.0 - UM7FFFFF	UM00000 - UM7FFFF		*3 *5
System data	-	SD00000 - SD00255		*2
Timer set value register	-	TS00000 - TS04095		*1 *4
Timer elapsed value register	-	TE00000 - TE04095		*1 *4
Counter set value register	-	CS00000 - CS01023		*1 *4
Counter elapsed value register	-	CE00000 - CE01023		*1 *4
Index register	-	I0000 - I000E		*4 *5

*1 You can use these devices as a global device and local device. If used as a local device, configure a program block number. Please enter the program block number of the program with the local device.

Example:

X000 (Global external input device, address 000)

023_X000 (Local external input device, Program block 23, address 000)

*2 Write disabled

*3 You need to set the slot number for these devices. You can use these devices without the program block number.

Example:

S16:IN000 (Direct input device, Slot number 16, address 000)


*4 32-bit device




*5 Hexadecimal address

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

5.2 FP0H Series

 : This address can be specified as system data area.


Device	Bit Address	Word Address	32 bits	Remarks
External input relay	X0000 - X109F	WX000 - WX109	[L/H]	
External output relay	Y0000 - Y109F	WY000 - WY109		
Link relay	L0000 - L127F	WL000 - WL127		
Internal relay	R0000 - R511F	WR000 - WR511		
Special internal relay	R9000 - R951F	WR900 - WR951		*1
Data register	-	DT00000 - DT65532		
Link data register	-	LD000 - LD255		
Timer elapsed value register	-	EV0000 - EV1023		
Timer(Contact)	T0000 - T1023	-		*1
Counter elapsed value register	-	EV0000 - EV1023		
Counter(Contact)	C0000 - C1023	-		*1
Special data register (DT)	-	DT90000 - DT90999		 *1
Timer set value register	-	SV0000 - SV1023		
Counter set value register	-	SV0000 - SV1023		






*1 Write disabled

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

5.3 FP2/FP2SH Series

 : This address can be specified as system data area.

Device	Bit Address		Word Address		32 bits	Remarks
	FP2	FP2SH	FP2	FP2SH		
External input relay	X0000 - X127F	X0000 - X511F	WX000 - WX127	WX000 - WX511		
External output relay	Y0000 - Y127F	Y0000 - Y511F	WY000 - WY127	WY000 - WY511		
Internal relay (R)	R0000 - R252F	R0000 - R886F	WR000 - WR252	WR000 - WR886		
Link relay	L0000 - L127F	L0000 - L639F	WL000 - WL127	WL000 - WL639		
Timer	T000 - T999	T0000 - T2999	-	-		*1
Counter	C1000 - C1023	C3000 - C3071	-	-		*1
Special internal relay	R9000 - R910F	R9000 - R910F	WR900 - WR910	WR900 - WR910		*1
Data register	-	-	DT0000 - DT5999	DT00000 - DT10239		
Link data register	-	-	LD000 - LD255	LD0000 - LD8447		
Timer/Counter set	-	-	SV0000 - SV1023	SV0000 - SV3071		
Timer/Counter elapsed value area	-	-	EV0000 - EV1023	EV0000 - EV3071		
File register	-	-	FL00000 - FL14332*2 FL00000 - FL30716*3	32,765 words*4 32,765 words × 3 banks*5		
Special data register (DT)	-	-	DT90000 - DT90255	DT90000 - DT90511		 *1
Index register	-	-	I0 - ID			

*1 Write disabled

*2 For FP2 (16K)

*3 For FP2 (32K)

*4 For FP2-C2L

*5 For FP2-C2, FP2-C2P and FP2-C3P

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.
Cf. GP Pro-EX Reference Manual "LS Area (Direct Access Method Area)"
- Refer to the precautions on manual notation for icons in the table.

 "Manual Symbols and Terminology"

6 Device Code and Address Code

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

6.1 FP7 Series

■ Global Devices

Device	Device Name	Device Code (HEX)	Address Code
External input relay	X / WX	0080	Word Address
External output relay	Y / WY	0081	Word Address
Internal relay	R / WR	0082	Word Address
Link relay	L / WL	0084	Word Address
System relay	SR / WS	0089	Word Address
Data register	DT	0000	Word Address
Link register	LD	0002	Word Address
System data	SD	0004	Word Address
Timer set value register	TS	0064	Word Address
Timer elapsed value register	TE	0065	Word Address
Counter set value register	CS	0062	Word Address
Counter elapsed value register	CE	0063	Word Address
Index register	I	0005	Word Address

■ Unit / Local Devices

Device	Device Name	Device Code (HEX)	Address Code
External input relay	_X / _WX	0090	(Program No. × 0x10000) + Word Address
External output relay	_Y / _WY	0091	(Program No. × 0x10000) + Word Address
Internal relay	_R / _WR	0092	(Program No. × 0x10000) + Word Address
Link relay	_L / _WL	0094	(Program No. × 0x10000) + Word Address
Direct input	IN / WI	0097	(Unit No. × 0x10000) + Word Address
Direct output	OT / WO	0098	(Unit No. × 0x10000) + Word Address
Data register	_DT	0014	(Program No. × 0x10000) + Word Address

Device	Device Name	Device Code (HEX)	Address Code
Link register	_LD	0012	(Program No. × 0x10000) + Word Address
Unit Memory	UM	0013	(Unit No. × 0x10000) + Word Address
Timer set value register	_TS	0074	(Program No. × 0x10000) + Word Address
Timer elapsed value register	_TE	0075	(Program No. × 0x10000) + Word Address
Counter set value register	_CS	0072	(Program No. × 0x10000) + Word Address
Counter elapsed value register	_CE	0073	(Program No. × 0x10000) + Word Address

6.2 FP0/FP2/FP2SH Series

Device	Device Name	Device Code (HEX)	Address Code
External input relay	X / WX	0080	Word Address
External output relay	Y / WY	0081	Word Address
Internal relay	R / WR	0082	Word Address
Link relay	L / WL	0084	Word Address
Special internal relay	R9 / WR9	0083	Word Address
Timer/Counter (set value)	SV	0060	Word Address
Timer/Counter (elapsed value)	EV	0061	Word Address
Data register	DT	0000	Word Address
Link register	LD	0002	Word Address
File register	FL	0010	Word Address
Special data register	DT9	0001	Word Address

7 Error Messages

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

Item	Description
No.	Error No.
Device Name	Name of the External Device where error occurs. Device name is a title of the External Device set with GP-Pro EX. (Initial value [PLC1])
Error Message	Displays messages related to the error which occurs.
Error Occurrence Area	Displays IP address or device address of the External Device where error occurs, or error codes received from the External Device. <div style="border: 1px solid black; padding: 2px; margin: 5px 0;">NOTE</div> <ul style="list-style-type: none"> IP address is displayed such as "IP address(Decimal): MAC address(Hex)". Device address is displayed such as "Address: Device address". Received error codes are displayed such as "Decimal[Hex]".

Display Examples of Error Messages

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

- NOTE**

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

■ Error Code Unique to External Device

Error Code (HEX)	Description
41	Format error Received command in the wrong format.
42	NOT support error Received an unsupported command.
60	Parameter error Specified parameter contents do not exist, or cannot be used.
61	Data error There is an error in the contact, data area, data number, size, range, or format.
62	Registration over error Exceeded the registration limit, or operation run without any registrations.
63	PC mode error Invalid command executed in RUN mode.
71	Exclusive control error Executed a command that cannot be processed simultaneously with the command already in process.

Error Code (HEX)	Description
80	Guarantee data abnormality error CRC code indicates an error.
91	Expansion slave unit missing error Specified a slot number without an expansion slave unit installed.

