



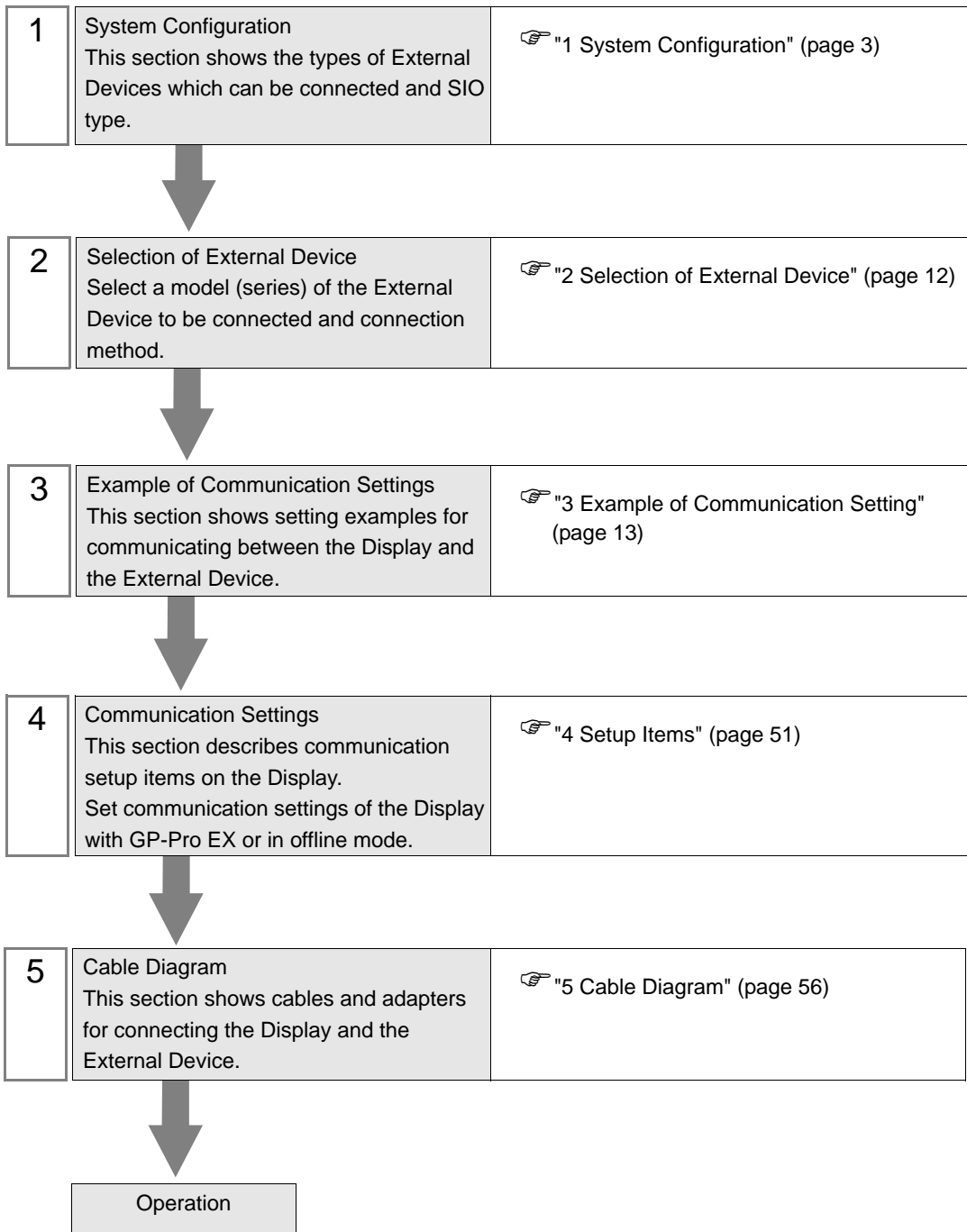
CS/CJ Series HOST Link Driver

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Introduction

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

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



1 System Configuration

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

Series	CPU*1	Connection Port	SIO Type	Communication Settings	Cable Diagram		
CS1	CS1G-CPU45 CS1G-CPU44 CS1G-CPU43 CS1G-CPU42 CS1G-CPU45H CS1G-CPU44H CS1G-CPU43H CS1G-CPU42H CS1G-CPU45-V1 CS1G-CPU44-V1 CS1G-CPU43-V1 CS1G-CPU42-V1 CS1H-CPU67 CS1H-CPU66 CS1H-CPU65 CS1H-CPU64 CS1H-CPU63 CS1H-CPU67H CS1H-CPU66H CS1H-CPU65H CS1H-CPU64H CS1H-CPU63H CS1H-CPU67-V1 CS1H-CPU66-V1 CS1H-CPU65-V1 CS1H-CPU64-V1 CS1H-CPU63-V1	RS232C port on the CPU unit	RS232C	Setting Example 1 (page 13)	Cable Diagram 1 (page 56)		
		Peripheral port on the CPU unit*2	RS232C	Setting Example 2 (page 16)	Cable Diagram 2 (page 58)		
		CS1W-SCU21	RS232C	Setting Example 5 (page 25)	Cable Diagram 1 (page 56)		
		CS1W-SCB21	RS232C	Setting Example 3 (page 19)			
		CS1W-SCB41	RS232C	Setting Example 3 (page 19)			
			RS422/485 (4wire)	Setting Example 4 (page 22)	Cable Diagram 3 (page 61)		
			RS422/485 (4wire) Multilink	Setting Example 4 (page 22)	Cable Diagram 4 (page 67)		
		CJ1	CJ1G-CPU45 CJ1G-CPU44 CJ1M-CPU23 CJ1M-CPU22 CJ1M-CPU21 CJ1M-CPU13 CJ1M-CPU12 CJ1M-CPU11 CJ1H-CPU66H CJ1H-CPU65H CJ1G-CPU45H CJ1G-CPU44H CJ1G-CPU43H CJ1G-CPU42H	RS232C port on the CPU unit	RS232C	Setting Example 1 (page 13)	Cable Diagram 1 (page 56)
				Peripheral port on the CPU unit*2	RS232C	Setting Example 2 (page 16)	Cable Diagram 2 (page 58)
				CJ1W-SCU41	RS232C	Setting Example 5 (page 25)	Cable Diagram 1 (page 56)
					RS422/485 (4wire)	Setting Example 6 (page 29)	Cable Diagram 3 (page 61)
					RS422/485 (4wire) Multilink	Setting Example 6 (page 29)	Cable Diagram 4 (page 67)

Series	CPU*1	Connection Port	SIO Type	Communication Settings	Cable Diagram
CJ2	CJ2H-CPU68-EIP CJ2H-CPU67-EIP CJ2H-CPU66-EIP CJ2H-CPU65-EIP CJ2H-CPU64-EIP	RS232C serial port on the CPU unit	RS-232C	Setting Example 11 (page 45)	Cable Diagram 1 (page 56)
		CJ1W-SCU21 CJ1W-SCU21-V1	RS-232C	Setting Example 5 (page 25)	
		CJ1W-SCU31-V1	RS422/485 (4wire)	Setting Example 6 (page 29)	Cable Diagram 3 (page 61)
			RS422/485 (4wire) Multilink	Setting Example 6 (page 29)	Cable Diagram 4 (page 67)
		CJ1W-SCU41 CJ1W-SCU41-V1	RS-232C	Setting Example 5 (page 25)	Cable Diagram 1 (page 56)
			RS422/485 (4wire)	Setting Example 6 (page 29)	Cable Diagram 3 (page 61)
			RS422/485 (4wire) Multilink	Setting Example 6 (page 29)	Cable Diagram 4 (page 67)
	CJ2H-CPU68 CJ2H-CPU67 CJ2H-CPU66 CJ2H-CPU65 CJ2H-CPU64 CJ2M-CPU15 CJ2M-CPU14 CJ2M-CPU13 CJ2M-CPU12 CJ2M-CPU11	RS232C serial port on the CPU unit	RS-232C	Setting Example 11 (page 45)	Cable Diagram 1 (page 56)
		CJ1W-SCU21-V1	RS-232C	Setting Example 5 (page 25)	Cable Diagram 1 (page 56)
		CJ1W-SCU31-V1	RS422/485 (4wire)	Setting Example 6 (page 29)	Cable Diagram 3 (page 61)
			RS422/485 (4wire) Multilink	Setting Example 6 (page 29)	Cable Diagram 4 (page 67)
		CJ1W-SCU41-V1	RS-232C	Setting Example 5 (page 25)	Cable Diagram 1 (page 56)
			RS422/485 (4wire)	Setting Example 6 (page 29)	Cable Diagram 3 (page 61)
			RS422/485 (4wire) Multilink	Setting Example 6 (page 29)	Cable Diagram 4 (page 67)

Series	CPU ^{*1}	Connection Port	SIO Type	Communication Settings	Cable Diagram
CJ2	CJ2M-CPU35 CJ2M-CPU34 CJ2M-CPU33 CJ2M-CPU32 CJ2M-CPU31	CJ1W-SCU21-V1	RS-232C	Setting Example 5 (page 25)	Cable Diagram 1 (page 56)
		CJ1W-SCU31-V1	RS422/485 (4wire)	Setting Example 6 (page 29)	Cable Diagram 3 (page 61)
			RS422/485 (4wire) Multilink	Setting Example 6 (page 29)	Cable Diagram 4 (page 67)
		CJ1W-SCU41-V1	RS-232C	Setting Example 5 (page 25)	Cable Diagram 1 (page 56)
			RS422/485 (4wire)	Setting Example 6 (page 29)	Cable Diagram 3 (page 61)
			RS422/485 (4wire) Multilink	Setting Example 6 (page 29)	Cable Diagram 4 (page 67)

Series	CPU*1	Connection Port	SIO Type	Communication Settings	Cable Diagram
CP1	CP1L-M□□DR-A CP1L-M□□DR-D CP1L-M□□DT-D CP1L-M□□DT1-D CP1L-M□□DT-A CP1L-L□□DR-A CP1L-L□□DR-D CP1L-L□□DT-D CP1L-L□□DT1-D CP1L-L□□DT-A *3	Option board CP1W-CIF01	RS232C	Setting Example 7 (page 33)	Cable Diagram 1 (page 56)
		Option board CP1W-CIF11	RS422/485 (4wire)	Setting Example 8 (page 36)	Cable Diagram 3 (page 61)
			RS422/485 (4wire) Multilink	Setting Example 8 (page 36)	Cable Diagram 4 (page 67)
	CP1H-X□□DR-A CP1H-X□□DT-D CP1H-X□□DT1-D CP1H-XA□□DR-A CP1H-XA□□DT-D CP1H-XA□□DT1-D CP1H-Y□□DT-D	Option board CP1W-CIF01	RS232C	Setting Example 9 (page 39)	Cable Diagram 1 (page 56)
		Option board CP1W-CIF11	RS422/485 (4wire)	Setting Example 10 (page 42)	Cable Diagram 3 (page 61)
			RS422/485 (4wire) Multilink	Setting Example 10 (page 42)	Cable Diagram 4 (page 67)
		CJ1W-SCU21 CJ1W-SCU21-V1	RS232C	Setting Example 5 (page 25)	Cable Diagram 1 (page 56)
		CJ1W-SCU41 CJ1W-SCU41-V1	RS232C	Setting Example 5 (page 25)	Cable Diagram 1 (page 56)
			RS422/485 (4wire)	Setting Example 6 (page 29)	Cable Diagram 3 (page 61)
			RS422/485 (4wire) Multilink	Setting Example 6 (page 29)	Cable Diagram 4 (page 67)
		CJ1W-SCU31-V1	RS422/485 (4wire)	Setting Example 6 (page 29)	Cable Diagram 3 (page 61)
			RS422/485 (4wire) Multilink	Setting Example 6 (page 29)	Cable Diagram 4 (page 67)
CP1E	CP1E-N□□DR-A CP1E-N□□DT-A CP1E-N□□DT1-A CP1E-N□□DR-D CP1E-N□□DT-D CP1E-N□□DT1-D	Internal RS-232C port on the CPU unit	RS232C	Setting Example 12 (page 48)	Cable Diagram 1 (page 56)

*1 □ differs depending on the number of CPU input-output points.

*2 Turn ON the DIP switch 4 on the CPU unit.

*3 10-point CPU units cannot be used.

NOTE

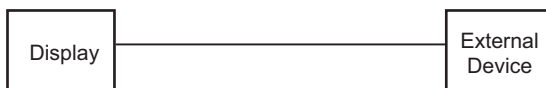
- When the time of GP4000 series is automatically updated in [Clock Update Settings] of GP-Pro EX, there are some restrictions as shown below.

For details on [Clock Update Settings], refer to GP-Pro EX Reference Manual.

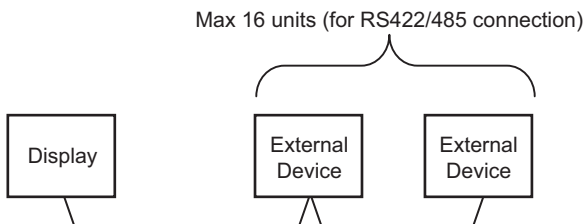
- CP1L, CP1E and CJ2H does not support automatic update of the time. Specify [Customize] in [Clock Update Settings].
-

■ Connection Configuration

- 1:1 Connection

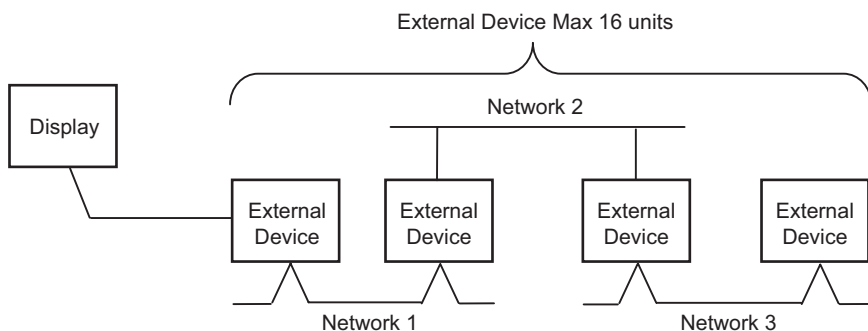


- 1:n Connection

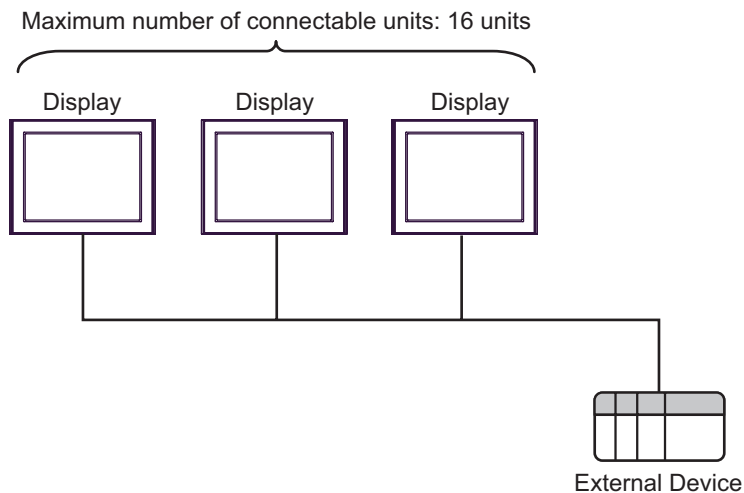


- Access beyond network

You can access beyond maximum 3 levels of network.



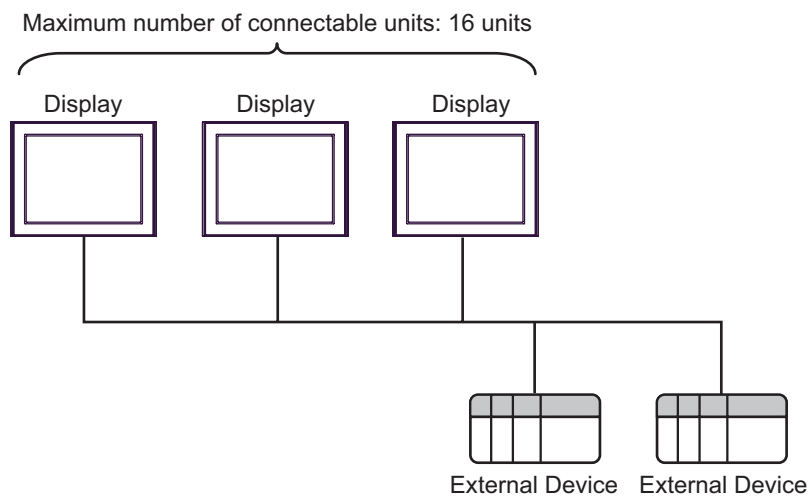
- n:1 Connection (Multilink connection)



NOTE

- The maximum number of connectable Displays is 16 units. However, keeping performance in consideration, the number of Displays that can be substantially used is up to 4.

- n:m Connection (Multilink connection)

**NOTE**

- The maximum number of connectable Displays is 16 units. However, keeping performance in consideration, the number of Displays that can be substantially used is up to 4.

■ IPC COM Port

When connecting IPC with an External Device, the COM port used depends on the series and SIO type. Please refer to the IPC manual for details.

Usable port

Series	Usable Port		
	RS-232C	RS-422/485(4 wire)	RS-422/485(2 wire)
PS-2000B	COM1 ^{*1} , COM2, COM3 ^{*1} , COM4	-	-
PS-3450A, PS-3451A, PS3000-BA, PS3001-BD	COM1, COM2 ^{*1*2}	COM2 ^{*1*2}	COM2 ^{*1*2}
PS-3650A (T41 model), PS-3651A (T41 model)	COM1 ^{*1}	-	-
PS-3650A (T42 model), PS-3651A (T42 model)	COM1 ^{*1*2} , COM2	COM1 ^{*1*2}	COM1 ^{*1*2}
PS-3700A (Pentium®4-M), PS-3710A	COM1 ^{*1} , COM2 ^{*1} , COM3 ^{*2} , COM4	COM3 ^{*2}	COM3 ^{*2}
PS-3711A	COM1 ^{*1} , COM2 ^{*2}	COM2 ^{*2}	COM2 ^{*2}
PS4000 ^{*3}	COM1, COM2	-	-
PL3000	COM1 ^{*1*2} , COM2 ^{*1} , COM3, COM4	COM1 ^{*1*2}	COM1 ^{*1*2}

*1 The RI/5V can be switched. Use the IPC's switch to change if necessary.

*2 Set up the SIO type with the DIP Switch. Please set up as follows according to SIO type to be used.

*3 When making communication between an External Device and COM port on the Expansion slot, only RS-232C is supported. However, ER (DTR/CTS) control cannot be executed because of the specification of COM port.

For connection with External Device, use user-created cables and disable Pin Nos. 1, 4, 6 and 9. Please refer to the IPC manual for details of pin layout.

DIP switch setting: RS-232C

DIP switch	Setting	Description
1	OFF ^{*1}	Reserved (always OFF)
2	OFF	SIO type: RS-232C
3	OFF	
4	OFF	Output mode of SD (TXD) data: Always output
5	OFF	Terminal resistance (220Ω) insertion to SD (TXD): None
6	OFF	Terminal resistance (220Ω) insertion to RD (RXD): None
7	OFF	Short-circuit of SDA (TXA) and RDA (RXA): Not available
8	OFF	Short-circuit of SDB (TXB) and RDB (RXB): Not available
9	OFF	RS (RTS) Auto control mode: Disabled
10	OFF	

*1 When using PS-3450A, PS-3451A, PS3000-BA and PS3001-BD, turn ON the set value.

DIP switch setting: RS-422/485 (4 wire)

DIP switch	Setting	Description
1	OFF	Reserved (always OFF)
2	ON	SIO type: RS-422/485
3	ON	
4	OFF	Output mode of SD (TXD) data: Always output
5	OFF	Terminal resistance (220Ω) insertion to SD (TXD): None
6	OFF	Terminal resistance (220Ω) insertion to RD (RXD): None
7	OFF	Short-circuit of SDA (TXA) and RDA (RXA): Not available
8	OFF	Short-circuit of SDB (TXB) and RDB (RXB): Not available
9	OFF ^{*1}	RS (RTS) Auto control mode: Disabled
10	OFF ^{*1}	

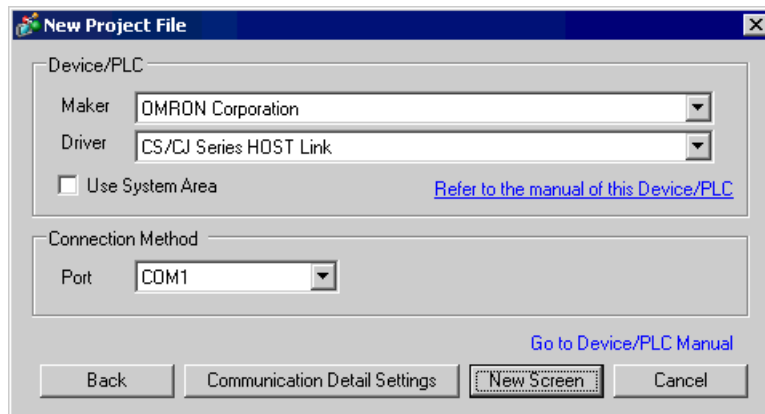
*1 When the connection configuration are the n:1 and n:m connections (both Multilink connections), turn ON the set value.

DIP switch setting: RS-422/485 (2 wire)

DIP switch	Setting	Description
1	OFF	Reserved (always OFF)
2	ON	SIO type: RS-422/485
3	ON	
4	OFF	Output mode of SD (TXD) data: Always output
5	OFF	Terminal resistance (220Ω) insertion to SD (TXD): None
6	OFF	Terminal resistance (220Ω) insertion to RD (RXD): None
7	ON	Short-circuit of SDA (TXA) and RDA (RXA): Available
8	ON	Short-circuit of SDB (TXB) and RDB (RXB): Available
9	ON	RS (RTS) Auto control mode: Enabled
10	ON	

2 Selection of External Device

Select the External Device to be connected to the Display.



Setup Items	Setup Description
Maker	Select the maker of the External Device to be connected. Select "OMRON Corporation".
Driver	Select a model (series) of the External Device to be connected and connection method. Select "CS/CJ Series HOST Link". Check the External Device which can be connected in "CS/CJ Series HOST Link" in system configuration. ☞ "1 System Configuration" (page 3)
Use System Area	Check this option when you synchronize the system data area of Display and the device (memory) of External Device. When synchronized, you can use the ladder program of External Device to switch the display or display the window on the Display. Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method Area)" This can also be set in GP-Pro EX or in the Display's offline mode. Cf. GP-Pro EX Reference Manual "Display Unit (System Area) Settings Guide" Cf. Maintenance/Troubleshooting Guide "Main Unit - System Area Settings"
Port	Select the Display port to be connected to the External Device.

3 Example of Communication Setting

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

3.1 Setting Example 1

■ Setting of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

SIO Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)

Speed

Data Length ☒ 7 ☐ 8

Parity ☐ NONE ☒ EVEN ☐ ODD

Stop Bit ☐ 1 ☒ 2

Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF

Timeout (sec)

Retry

Wait To Send (ms)

RI / VCC ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


[Default](#)

Device-Specific Settings

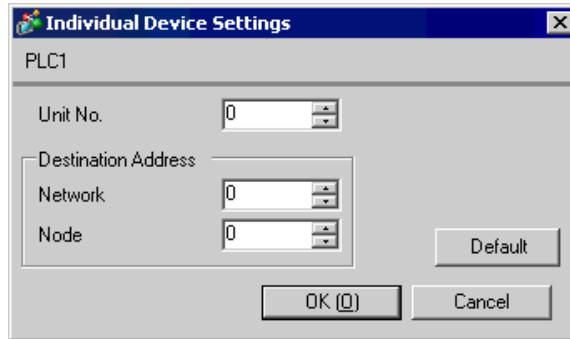
Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Unit No.=0,Network=0,Node=0

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



NOTE

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

■ Setting of External Device

Click the [HOST Link Port] tab from the [PLC Settings] of the ladder software for the communication settings of the HOST link port (RS232C port on CPU) and set as below.

Setup Items	Settings
Speed	19200
Parameter	7,2,E
Mode	HOST link
DIP Switch ^{*1}	SW1: OFF SW5: OFF SW7: OFF SW8: OFF
Unit No.	Option
Source Network Address ^{*2}	Option
Node Address Setting Rotary Switch ^{*3}	Option

- *1 Use the DIP switch on the front of the unit for setting.
- *2 Parameter used when you access beyond network. Set in the routing table of "CX-Net Network Configuration". Please refer to the manual of the External Device for more details.
- *3 Parameter used when you access beyond network. Set with the rotary switch on the front of the Controller Link unit used for access beyond network.

◆ Notes

- Do not set the duplicate node address in the same network address group.

3.2 Setting Example 2

■ Setting of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1 [Change Device/PLC](#)

Summary

Maker Series Port


Text Data Mode [Change](#)

Communication Settings

SID Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)
 Speed
 Data Length ☒ 7 ☐ 8
 Parity ☐ NONE ☒ EVEN ☐ ODD
 Stop Bit ☐ 1 ☒ 2
 Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF
 Timeout (sec)
 Retry
 Wait To Send (ms)


RI / VCC ☒ RI ☐ VCC
 In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

Device-Specific Settings

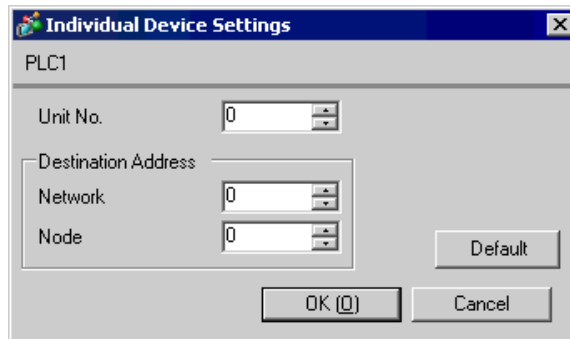
Allowable No. of Device/PLCs 16 Unit(s) 

No.	Device Name	Settings
1	PLC1	Unit No.=0,Network=0,Node=0

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.

**NOTE**

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

■ Setting of External Device

Click the [Peripheral Port] tab from the [PLC Settings] of the ladder software for the communication settings of the peripheral port and set as below.

Setup Items	Settings
Speed	19200
Parameter	7,2,E
Mode	HOST link
DIP Switch ^{*1}	SW1: OFF SW4: ON SW7: OFF SW8: OFF
Unit No.	Option
Source Network Address ^{*2}	Option
Node Address Setting Rotary Switch ^{*3}	Option

- *1 Use the DIP switch on the front of the unit for setting.
- *2 Parameter used when you access beyond network. Set in the routing table of "CX-Net Network Configuration". Please refer to the manual of the External Device for more details.
- *3 Parameter used when you access beyond network. Set with the rotary switch on the front of the Controller Link unit used for access beyond network.

◆ Notes

- Do not set the duplicate node address in the same network address group.

3.3 Setting Example 3

■ Setting of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

SID Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)
 Speed
 Data Length ☒ 7 ☐ 8
 Parity ☐ NONE ☒ EVEN ☐ ODD
 Stop Bit ☐ 1 ☒ 2
 Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF
 Timeout (sec)
 Retry
 Wait To Send (ms)

RI / VCC ☒ RI ☐ VCC
 In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


[Default](#)

Device-Specific Settings

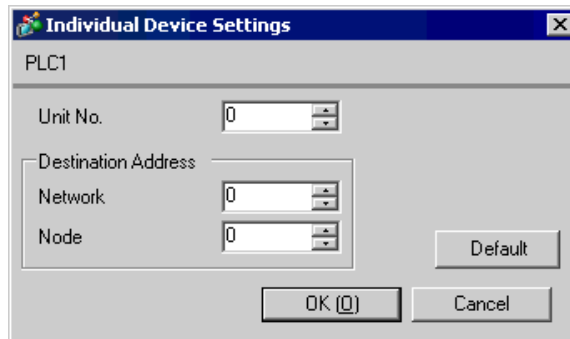
Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Unit No.=0,Network=0,Node=0

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



NOTE

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

■ Setting of External Device

For communication settings of INNER board, open [I/O Table] of the ladder software first. Then, select [INNER Board Soft Switch] from the menu displayed by right-clicking [CS**-CPU**] (CPU of the External Device to set) and set as below.

Setup Items	Settings
Port settings ^{*1}	User settings
Line Speed	19200
Parameter	1,7,2,E
Mode	Default (HOST Link)
Send Delay Time	0
CS Control	None
Unit No.	Option
Source Network Address ^{*2}	Option
Node Address Setting Rotary Switch ^{*3}	Option

*1 [Port settings] can be set only when the ladder software you use is a CX-One.

*2 Parameter used when you access beyond network. Set in the routing table of "CX-Net Network Configuration". Please refer to the manual of the External Device for more details.

*3 Parameter used when you access beyond network. Set with the rotary switch on the front of the Controller Link unit used for access beyond network.

◆ Notes

- Do not set the duplicate node address in the same network address group.

3.4 Setting Example 4

■ Setting of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1 [Change Device/PLC](#)

Summary

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

SID Type ☐ RS232C ☐ RS422/485(2wire) ☒ RS422/485(4wire)
 Speed
 Data Length ☒ 7 ☐ 8
 Parity ☐ NONE ☒ EVEN ☐ ODD
 Stop Bit ☐ 1 ☒ 2
 Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF
 Timeout (sec)
 Retry
 Wait To Send (ms)

RI / VCC ☒ RI ☐ VCC


In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

Device-Specific Settings

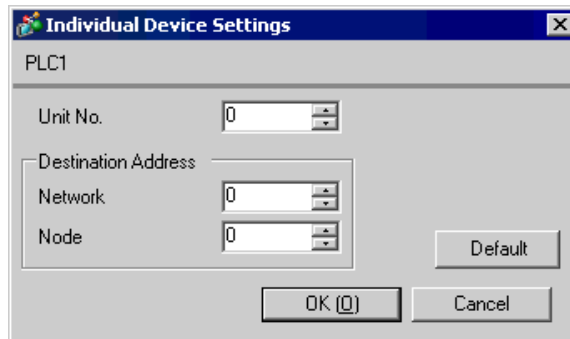
Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Unit No.=0,Network=0,Node=0

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



NOTE

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

■ Setting of External Device

For communication settings of INNER board, open [I/O Table] of the ladder software first. Then, select [INNER Board Soft Switch] from the menu displayed by right-clicking [CS**-CPU**] (CPU of the External Device to set) and set as below.

Setup Items	Settings
WIRE (2wire/4wire switch) ^{*1}	4wire
TERM (Termination resistance switch) ^{*2}	ON
Port settings ^{*3}	User settings
Line Speed	19200
Parameter	1,7,2,E
Mode	Default (HOST Link)
Send Delay Time	0
CS Control	None
Unit No.	Option
Source Network Address ^{*4}	Option
Node Address Setting Rotary Switch ^{*5}	Option

*1 Use the WIRE switch on the front of the INNER board to set.

*2 Use the TERM switch on the front of the INNER board to set. For 1:n connection, set only the station that serves as termination resistance to ON.

*3 [Port settings] can be set only when the ladder software you use is a CX-One.

*4 Parameter used when you access beyond network. Set in the routing table of "CX-Net Network Configuration". Please refer to the manual of the External Device for more details.

*5 Parameter used when you access beyond network. Set with the rotary switch on the front of the Controller Link unit used for access beyond network.

◆ Notes

- Do not set the duplicate node address in the same network address group.

3.5 Setting Example 5

■ Setting of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1 [Change Device/PLC](#)

Summary

Maker Series Port


Text Data Mode [Change](#)

Communication Settings

SID Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)
 Speed
 Data Length ☒ 7 ☐ 8
 Parity ☐ NONE ☒ EVEN ☐ ODD
 Stop Bit ☐ 1 ☒ 2
 Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF
 Timeout (sec)
 Retry
 Wait To Send (ms)


RI / VCC ☒ RI ☐ VCC
 In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

Device-Specific Settings

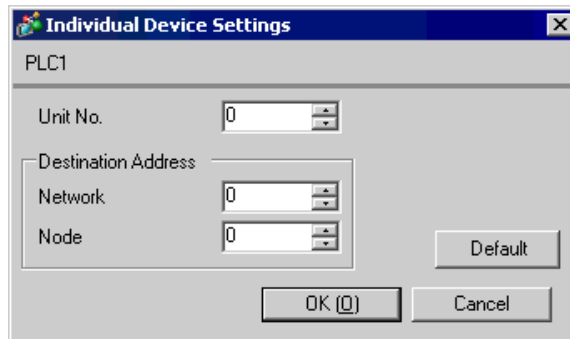
Allowable No. of Device/PLCs 16 Unit(s) 

No.	Device Name	Settings
1	PLC1	Unit No.=0,Network=0,Node=0

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



NOTE

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

■ Setting of External Device

For External Device communication settings, use the DIP switch of the External Device and ladder software (CX-Programmer).

Refer to your External Device manual for details.

◆ DIP Switch Setting

Setup Items	Settings
Unit No. Setting Rotary Switch ^{*1}	0

^{*1} You need to set this switch to the same value as "CPU High Function Unit No." of the serial communication unit in the I/O table assigned by the ladder tool.

◆ Ladder Software Settings

For communication settings of the communication unit, you need to register the serial communication unit to be used by the ladder software in advance.

After registration, open [I/O Table] of the ladder software. Click [Switch] from the menu displayed by right-clicking [Serial Communication Unit] and set as below.

Setup Items	Settings
Displayed Parameter	Port1:Host Link Settings ^{*1}
Port settings ^{*2}	User settings
Serial communication mode	Host Link(default)
Data length	7bits
Stop bits	2bits
Parity	Even
Baud rate	19200bps
Send delay	Default(0ms)
Send delay(user-specified)	0
CTS Control	No
1:N/1:1 protocol setting	1:N protocol
Host Link compatible device mode	Default(Mode A)
Host Link unit number	0

^{*1} When you set the Port2, select "Port2: Host Link Settings".

^{*2} [Port settings] can be set only when the ladder software you use is a CX-One.

NOTE

- For access beyond network, set as below.

Setup Items	Settings
Source Network Address ^{*1}	Option
Node Address Setting Rotary Switch ^{*2}	Option

*1 Set in the routing table of "CX-Net Network Configuration". Please refer to the manual of the External Device for more details.

*2 Set with the rotary switch on the front of the Controller Link unit used for access beyond network.

- Do not set the duplicate node address in the same network address group.

3.6 Setting Example 6

■ Setting of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

SID Type ☐ RS232C ☐ RS422/485(2wire) ☒ RS422/485(4wire)
 Speed
 Data Length ☒ 7 ☐ 8
 Parity ☐ NONE ☒ EVEN ☐ ODD
 Stop Bit ☐ 1 ☒ 2
 Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF
 Timeout (sec)
 Retry
 Wait To Send (ms)

RI / VCC ☒ RI ☐ VCC
 In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


[Default](#)

Device-Specific Settings

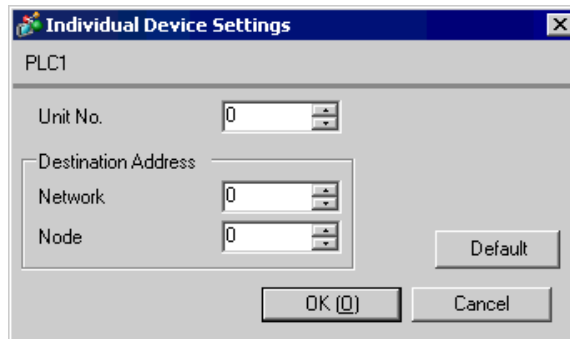
Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Unit No.=0,Network=0,Node=0

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



NOTE

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

■ Setting of External Device

For External Device communication settings, use the DIP switch of the front of the Serial Communication unit and ladder software (CX-Programmer).

Refer to your External Device manual for details.

◆ DIP Switch Setting

Setup Items	Settings
Unit No. Setting Rotary Switch ^{*1}	0
WIRE (2wire/4wire switch)	4wire
TERM (Termination resistance switch) ^{*2}	ON

*1 You need to set this switch to the same value as "CPU High Function Unit No." of the serial communication unit in the I/O table assigned by the ladder tool.

*2 For 1:n connection, set only the station that serves as termination resistance to ON.

◆ Ladder Software Settings

For communication settings of the communication unit, you need to register the serial communication unit to be used by the ladder software in advance.

After registration, open [I/O Table] of the ladder software. Click [Switch] from the menu displayed by right-clicking [Serial Communication Unit] and set as below.

Setup Items	Settings
Displayed Parameter	Port1:Host Link Settings ^{*1}
Port settings ^{*2}	User settings
Serial communication mode	Host Link(default)
Data length	7bits
Stop bits	2bits
Parity	Even
Baud rate	19200bps
Send delay	Default(0ms)
Send delay(user-specified)	0
CTS Control	No
1:N/1:1 protocol setting	1:N protocol
Host Link compatible device mode	Default(Mode A)
Host Link unit number	0

*1 When you set the Port2, select "Port2: Host Link Settings".

*2 [Port settings] can be set only when the ladder software you use is a CX-One.

NOTE

- For access beyond network, set as below.

Setup Items	Settings
Source Network Address ^{*1}	Option
Node Address Setting Rotary Switch ^{*2}	Option

*1 Set in the routing table of "CX-Net Network Configuration". Please refer to the manual of the External Device for more details.

*2 Set with the rotary switch on the front of the Controller Link unit used for access beyond network.

- Do not set the duplicate node address in the same network address group.

3.7 Setting Example 7

■ Setting of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1 [Change Device/PLC](#)

Summary

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

SID Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)
 Speed
 Data Length ☒ 7 ☐ 8
 Parity ☐ NONE ☒ EVEN ☐ ODD
 Stop Bit ☐ 1 ☒ 2
 Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF
 Timeout (sec)
 Retry
 Wait To Send (ms)

RI / VCC ☒ RI ☐ VCC
 In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


[Default](#)

Device-Specific Settings

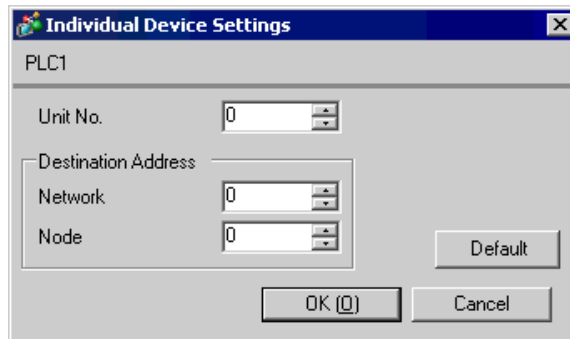
Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Unit No.=0,Network=0,Node=0

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.

**NOTE**

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

■ Setting of External Device

For External Device communication settings, use the DIP switch of the External Device and ladder software (CX-Programmer).

Refer to your External Device manual for details.

◆ DIP Switch Setting

Dip Switch	Setting	Description
SW1	OFF	Set whether the user memory is writable or not. ON: Write disable OFF: Write enable
SW2	OFF	Set whether data is loaded from a memory cassette or not when the power is on. ON: Load enabled OFF: Load disabled
SW3	OFF	Switch the status of special auxiliary relay (A395.12).
SW4	OFF	Set communication speed of serial port 1. ON: Communication speed of ladder software (Toolbus) is automatically recognized. OFF: Accordance with communication setting of ladder software.
SW5*1	OFF	Set communication speed of serial port 2. ON: Communication speed of ladder software (Toolbus) is automatically recognized. OFF: Accordance with communication setting of ladder software.
SW6*1	OFF	Always OFF.

*1 CPU input-output points are 30 points/40 points only.

◆ Ladder Software Setting

- 1 Start up the ladder software.
- 2 Select [New] in the [File] menu to display [Change PLC] dialog box.
- 3 Select External Device in the [Device Type].
- 4 Click [Settings...] in the [Device Type] to display the [Device Type Settings] dialog box.
- 5 Select CPU type in the [CPU Type] and click [OK].
- 6 Select connection type in the [Network Type].
- 7 Click [OK].
- 8 Double click [Settings] in the tree view of the work space to display the [PLC Settings] dialog box.
- 9 Check "Custom" in the [Communications Settings] of the [Serial Port 1] tab.
- 10 Set the setup items as below.

Setup Items	Setting Value
Baud	19200
Format	7,2,E
Mode	Host Link
Unit Number	0

- 11 Close the [PLC Settings] dialog box.
- 12 Transfer the communication settings to External Device.
- 13 Reboot the External Device.

◆ Notes

- Do not set the duplicate node address in the same network address group.

3.8 Setting Example 8

■ Setting of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

SID Type ☐ RS232C ☐ RS422/485(2wire) ☒ RS422/485(4wire)
 Speed
 Data Length ☒ 7 ☐ 8
 Parity ☐ NONE ☒ EVEN ☐ ODD
 Stop Bit ☐ 1 ☒ 2
 Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF
 Timeout (sec)
 Retry
 Wait To Send (ms)

RI / VCC ☒ RI ☐ VCC
 In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


[Default](#)

Device-Specific Settings

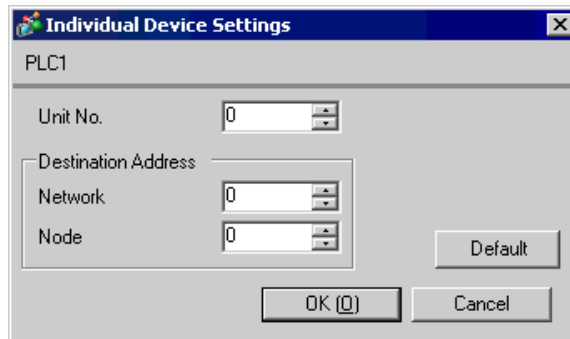
Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Unit No.=0,Network=0,Node=0

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



NOTE

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

■ Setting of External Device

For External Device communication settings, use the DIP switch of the External Device and ladder software (CX-Programmer).

Refer to your External Device manual for details.

◆ DIP Switch Setting

Dip Switch	Setting	Description
SW1	OFF	Set whether the user memory is writable or not. ON: Write disable OFF: Write enable
SW2	OFF	Set whether data is loaded from a memory cassette or not when the power is on. ON: Load enabled OFF: Load disabled
SW3	OFF	Switch the status of special auxiliary relay (A395.12).
SW4	OFF	Set communication speed of serial port 1. ON: Communication speed of ladder software (Toolbus) is automatically recognized. OFF: Accordance with communication setting of ladder software.
SW5 ^{*1}	OFF	Set communication speed of serial port 2. ON: Communication speed of ladder software (Toolbus) is automatically recognized. OFF: Accordance with communication setting of ladder software.
SW6 ^{*1}	OFF	Always OFF.

*1 CPU input-output points are 30 points/40 points only.

◆ Ladder Software Setting

- 1 Start up the ladder software.
- 2 Select [New] in the [File] menu to display [Change PLC] dialog box.
- 3 Select External Device in the [Device Type].
- 4 Click [Settings...] in the [Device Type] to display the [Device Type Settings] dialog box.
- 5 Select CPU type in the [CPU Type] and click [OK].
- 6 Select connection type in the [Network Type].
- 7 Click [OK].
- 8 Double click [Settings] in the tree view of the work space to display the [PLC Settings] dialog box.
- 9 Check "Custom" in the [Communications Settings] of the [Serial Port 1] tab.
- 10 Set the setup items as below.

Setup Items	Setting Value
Baud	19200
Format	7,2,E
Mode	Host Link
Unit Number	0

- 11 Close the [PLC Settings] dialog box.
- 12 Transfer the communication settings to External Device.
- 13 Reboot the External Device.

◆ Notes

- Do not set the duplicate node address in the same network address group.

3.9 Setting Example 9

■ Setting of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1 [Change Device/PLC](#)

Summary

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

SID Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)
 Speed
 Data Length ☒ 7 ☐ 8
 Parity ☐ NONE ☒ EVEN ☐ ODD
 Stop Bit ☐ 1 ☒ 2
 Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF
 Timeout (sec)
 Retry
 Wait To Send (ms)

RI / VCC ☒ RI ☐ VCC
 In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


[Default](#)

Device-Specific Settings

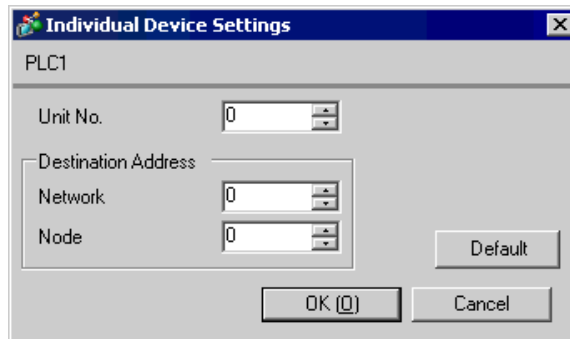
Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Unit No.=0,Network=0,Node=0

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.

**NOTE**

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

■ Setting of External Device

For External Device communication settings, use the DIP switch of the External Device and ladder software (CX-Programmer).

Refer to your External Device manual for details.

◆ DIP Switch Setting

Dip Switch	Setting	Description
SW1	OFF	Set whether the user memory is writable or not. ON: Write disable OFF: Write enable
SW2	OFF	Set whether data is loaded from a memory cassette or not when the power is on. ON: Load enabled OFF: Load disabled
SW3	OFF	Not used.
SW4	OFF	Set communication speed of serial port 1. ON: Communication speed of ladder software (Toolbus) is automatically recognized. OFF: Accordance with communication setting of ladder software.
SW5	OFF	Set communication speed of serial port 2. ON: Communication speed of ladder software (Toolbus) is automatically recognized. OFF: Accordance with communication setting of ladder software.
SW6	OFF	Switch the status of special auxiliary relay (A395.12).

◆ Ladder Software Setting

- 1 Start up the ladder software.
- 2 Select [New] in the [File] menu to display [Change PLC] dialog box.
- 3 Select External Device in the [Device Type].
- 4 Click [Settings...] in the [Device Type] to display the [Device Type Settings] dialog box.
- 5 Select CPU type in the [CPU Type] and click [OK].
- 6 Select connection type in the [Network Type].
- 7 Click [OK].
- 8 Double click [Settings] in the tree view of the work space to display the [PLC Settings] dialog box.
- 9 Check "Custom" in the [Communications Settings] of the [Serial Port 1] tab.
- 10 Set the setup items as below.

Setup Items	Setting Value
Baud	19200
Format	7,2,E
Mode	Host Link
Unit Number	0

- 11 Close the [PLC Settings] dialog box.
- 12 Transfer the communication settings to External Device.
- 13 Reboot the External Device.

◆ Notes

- Do not set the duplicate node address in the same network address group.

3.10 Setting Example 10

■ Setting of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

SID Type ☐ RS232C ☐ RS422/485(2wire) ☒ RS422/485(4wire)
 Speed
 Data Length ☒ 7 ☐ 8
 Parity ☐ NONE ☒ EVEN ☐ ODD
 Stop Bit ☐ 1 ☒ 2
 Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF
 Timeout (sec)
 Retry
 Wait To Send (ms)

RI / VCC ☒ RI ☐ VCC
 In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


[Default](#)

Device-Specific Settings

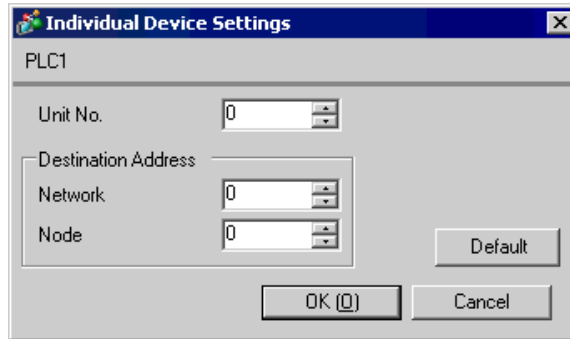
Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Unit No.=0,Network=0,Node=0

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



NOTE

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

■ Setting of External Device

For External Device communication settings, use the DIP switch of the External Device and ladder software (CX-Programmer).

Refer to your External Device manual for details.

◆ DIP Switch Setting

Dip Switch	Setting	Description
SW1	OFF	Set whether the user memory is writable or not. ON: Write disable OFF: Write enable
SW2	OFF	Set whether data is loaded from a memory cassette or not when the power is on. ON: Load enabled OFF: Load disabled
SW3	OFF	Not used.
SW4	OFF	Set communication speed of serial port 1. ON: Communication speed of ladder software (Toolbus) is automatically recognized. OFF: Accordance with communication setting of ladder software.
SW5	OFF	Set communication speed of serial port 2. ON: Communication speed of ladder software (Toolbus) is automatically recognized. OFF: Accordance with communication setting of ladder software.
SW6	OFF	Switch the status of special auxiliary relay (A395.12).

◆ Ladder Software Setting

- 1 Start up the ladder software.
- 2 Select [New] in the [File] menu to display [Change PLC] dialog box.
- 3 Select External Device in the [Device Type].
- 4 Click [Settings...] in the [Device Type] to display the [Device Type Settings] dialog box.
- 5 Select CPU type in the [CPU Type] and click [OK].
- 6 Select connection type in the [Network Type].
- 7 Click [OK].
- 8 Double click [Settings] in the tree view of the work space to display the [PLC Settings] dialog box.
- 9 Check "Custom" in the [Communications Settings] of the [Serial Port 1] tab.
- 10 Set the setup items as below.

Setup Items	Setting Value
Baud	19200
Format	7,2,E
Mode	Host Link
Unit Number	0

- 11 Close the [PLC Settings] dialog box.
- 12 Transfer the communication settings to External Device.
- 13 Reboot the External Device.

◆ Notes

- Do not set the duplicate node address in the same network address group.

3.11 Setting Example 11

■ Setting of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

SIO Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)

Speed

Data Length ☒ 7 ☐ 8

Parity ☐ NONE ☒ EVEN ☐ ODD

Stop Bit ☐ 1 ☒ 2

Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF

Timeout (sec)

Retry

Wait To Send (ms)

RI / VCC ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


[Default](#)

Device-Specific Settings

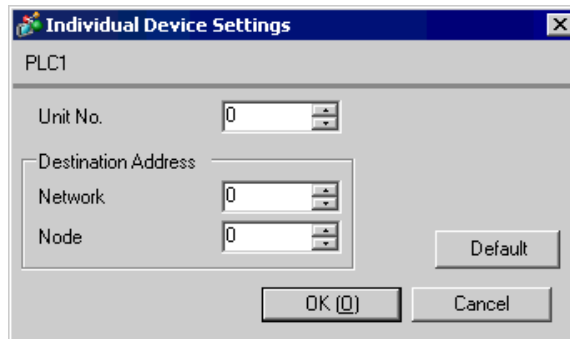
Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Unit No.=0,Network=0,Node=0

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



NOTE

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

■ Setting of External Device

Click the [Serial Port] tab from the [PLC Settings] of the ladder software for the communication settings of the Serial port (RS232C port on CPU) and set as below.

Setup Items	Settings
Speed	19200
Parameter	7,2,E
Mode	HOST link
DIP Switch ^{*1}	SW1: OFF SW5: OFF SW7: OFF SW8: OFF
Unit No.	0

*1 Use the DIP switch on the front of the unit for setting.

NOTE • For access beyond network, set as below.

Setup Items	Settings
Source Network Address ^{*1}	Option
Node Address Setting Rotary Switch ^{*2}	Option

*1 Set in the routing table of "CX-Net Network Configuration". Please refer to the manual of the External Device for more details.

*2 Set with the rotary switch on the front of the Controller Link unit used for access beyond network.

- Do not set the duplicate node address in the same network address group.

3.12 Setting Example 12

■ Setting of GP-Pro EX

◆ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary [Change Device/PLC](#)

Maker Series Port

Text Data Mode [Change](#)

Communication Settings

SID Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)
 Speed
 Data Length ☒ 7 ☐ 8
 Parity ☐ NONE ☒ EVEN ☐ ODD
 Stop Bit ☐ 1 ☒ 2
 Flow Control ☒ NONE ☐ ER(DTR/CTS) ☐ XON/XOFF
 Timeout (sec)
 Retry
 Wait To Send (ms)

RI / VCC ☒ RI ☐ VCC
 In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.


[Default](#)

Device-Specific Settings

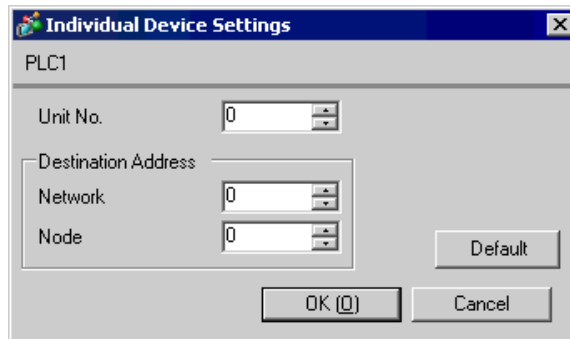
Allowable No. of Device/PLCs 16 Unit(s)

No.	Device Name	Settings
1	PLC1	Unit No.=0,Network=0,Node=0

◆ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



NOTE

- Set the unit No. you set in the External Device for "Unit No.".
- If you do not access beyond network, set "0" for "Network" and "Node" settings.

■ Setting of External Device

For External Device communication settings, use the ladder software (CX-Programmer).

Refer to your External Device manual for details.

◆ Ladder Software Setting

- 1 Start up the ladder software.
- 2 Select [New] in the [File] menu to display [Change PLC] dialog box.
- 3 Select External Device in the [Device Type].
- 4 Click [Settings...] in the [Device Type] to display the [Device Type Settings] dialog box.
- 5 Select CPU type in the [CPU Type] and click [OK].
- 6 Select connection type in the [Network Type].
- 7 Click [OK].
- 8 Double click [Settings] in the tree view of the work space to display the [PLC Settings] dialog box.
- 9 Check "Custom" in the [Communications Settings] of the [Internal RS232C port] tab.
- 10 Set the setup items as below.

Setup Items	Setting Value
Baud	19200
Format	7,2,E
Mode	Host Link
Unit Number	0

- 11 Close the [PLC Settings] dialog box.
- 12 Transfer the communication settings to External Device.
- 13 Reboot the External Device.

4 Setup Items

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

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

☞ "3 Example of Communication Setting" (page 13)

4.1 Setup Items in GP-Pro EX

■ Communication Settings

To display the setting screen, select [Device/PLC Settings] from [System setting window] in workspace.

Device/PLC 1

Summary

Maker: OMRON Corporation Series: CS/CJ Series HOST Link Port: COM1

Text Data Mode: 3 Change

Communication Settings

SIO Type: ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)

Speed: 19200

Data Length: ☒ 7 ☐ 8

Parity: ☐ NONE ☒ EVEN ☐ ODD

Stop Bit: ☐ 1 ☒ 2

Flow Control: ☒ NONE ☐ ER(DTR/DS) ☐ XON/XOFF

Timeout: 3 (sec)

Retry: 2

Wait To Send: 0 (ms)

RI / VCC: ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

Default

Device-Specific Settings

Allowable No. of Device/PLCs: 16 Unit(s)


No.	Device Name	Settings
1	PLC1	Unit No.=0, Network=0, Node=0

Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device.
Speed	Select speed between the External Device and the Display.
Data Length	Select data length.
Parity	Select how to check parity.
Stop Bit	Select stop bit length.
Flow Control	Select the communication control method to prevent overflow of transmission and reception data.
Timeout	Use an integer from 1 to 127 to enter the time (sec) for which the Display waits for the response from the External Device.
Retry	In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command.

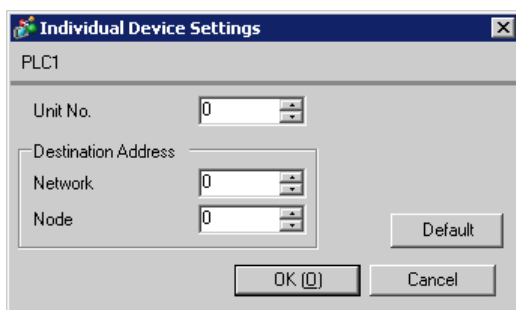
continued to next page

Setup Items	Setup Description
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.
RI/VCC	You can switch RI/VCC of the 9th pin when you select RS232C for SIO type. It is necessary to change RI/5V by changeover switch of IPC when connect with IPC. Please refer to the manual of the IPC for more detail.

■ Device Setting

To display the setting screen, click  ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

When you connect multiple External Device, click  from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.



Setup Items	Setup Description
Unit No.	Enter the unit No. for HOST link.
Network	Enter the destination network address.
Node	Enter the destination node address.

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"

- 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.

Comm.	Device	Option		
CS/CJ Series HOST Link [COM1] Page 1/1				
SIO Type	RS232C			
Speed	19200			
Data Length	<input checked="" type="radio"/> 7 <input type="radio"/> 8			
Parity	<input type="radio"/> NONE <input checked="" type="radio"/> EVEN <input type="radio"/> ODD			
Stop Bit	<input type="radio"/> 1 <input checked="" type="radio"/> 2			
Flow Control	NONE			
Timeout(s)	3			
Retry	2			
Wait To Send(ms)	0			
Exit		Back		2005/09/02 12:47:53

Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device. IMPORTANT To make the communication settings correctly, confirm the serial interface specifications of Display unit for [SIO Type]. We cannot guarantee the operation if a communication type that the serial interface does not support is specified. For details concerning the serial interface specifications, refer to the manual for Display unit.
Speed	Select speed between the External Device and the Display.
Data Length	Select data length.
Parity	Select how to check parity.
Stop Bit	Select stop bit length.
Flow Control	Select the communication control method to prevent overflow of transmission and reception data.
Timeout	Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device.

Setup Items	Setup Description
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]. Touch the External Device you want to set from the displayed list, and touch [Device].

Comm.	Device	Option		
CS/CJ Series HOST Link		[COM1]	Page 1/1	
Device/PLC Name <input type="text" value="PLC1"/>				
Unit No.		<input type="text" value="0"/> ▼ ▲		
Network Address		<input type="text" value="0"/> ▼ ▲		
Node Address		<input type="text" value="0"/> ▼ ▲		
Exit		Back		2005/09/02 12:47:55

Setup Items	Setup Description
Device/PLC Name	Select the External Device for device setting. Device name is a title of External Device set with GP-Pro EX.(Initial value [PLC1])
Unit No.	Enter the unit No. for HOST link.
Network	Enter the destination network address.
Node	Enter the destination node address.

■ Option

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 [Option].

Comm.	Device	Option		
CS/CJ Series HOST Link [COM1] Page 1/1				
<p>RI / VCC <input checked="" type="radio"/> RI <input type="radio"/> VCC</p> <p>In the case of RS232C, you can select the 9th pin to RI(Input) or VCC(5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.</p>				
Exit		Back		2005/09/02 12:47:57

Setup Items	Setup Description
RI/VCC	You can switch RI/VCC of the 9th pin when you select RS232C for SIO type. It is necessary to change RI/5V by changeover switch of IPC when connect with IPC. Please refer to the manual of the IPC for more detail.

NOTE

- GP-4100 series and GP-4*0ITM do not have the [Option] setting in the offline mode.

5 Cable Diagram

The cable diagram shown below may be different from the cable diagram recommended by OMRON Corporation. Please be assured there is no operational problem in applying the cable diagram shown in this manual.

- The FG pin of the main body of the External Device must be D-class grounded. Please refer to the manual of the External Device for more details.
- SG and FG are connected inside the Display. When connecting SG to the External Device, design the system not to form short-circuit loop.
- Connect the isolation unit, when communication is not stabilized under the influence of a noise etc.

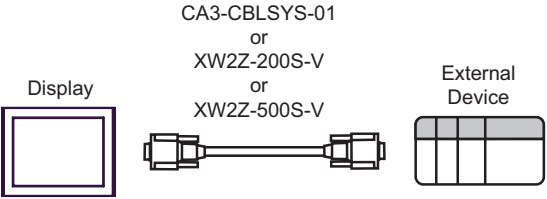
Cable Diagram 1

Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP-4*01TM (COM1) ST (COM1) IPC*1 PC/AT	1A	OMRON SYSMAC link cable by Pro-face CA3-CBLSYS-01 (5m)	
	1B	XW2Z-200S-V (2m) or XW2Z-500S-V (5m) by OMRON Corporation	
	1C	User-created cable	The cable length must be 15m or less.
GP-4105 (COM1)	1D	User-created cable	

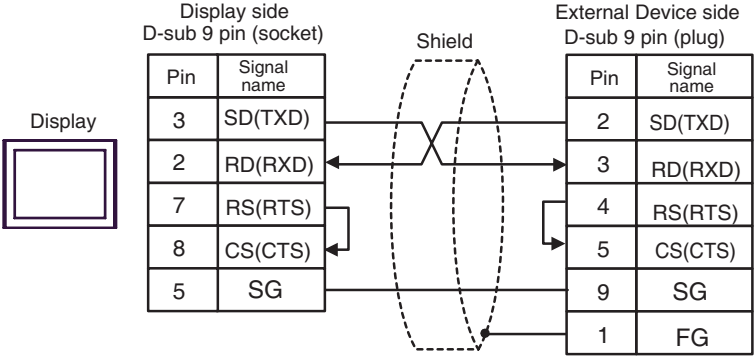
*1 Only the COM port which can communicate by RS-232C can be used.

 ■ IPC COM Port (page 10)

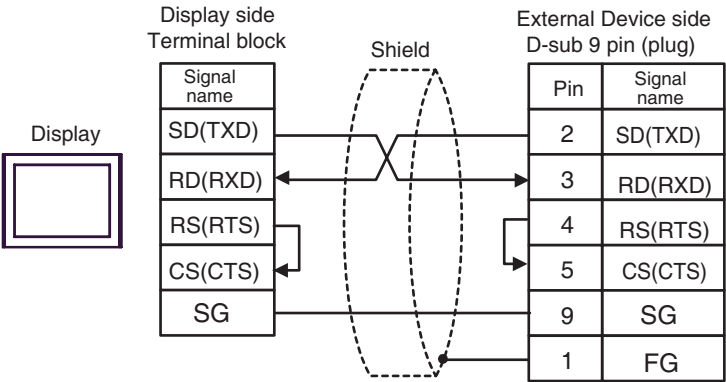
1A) , 1B)



1C)



1D)



Cable Diagram 2

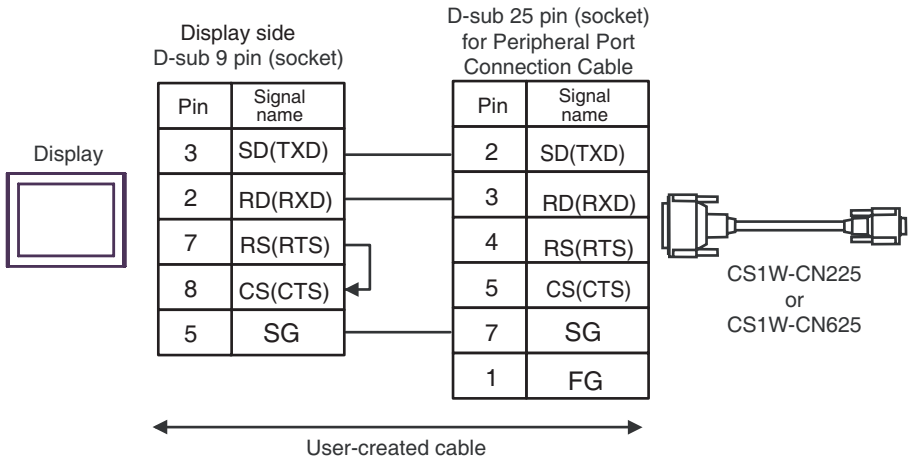
Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP-4*01TM (COM1) ST (COM1) IPC*1 PC/AT	2A	User-created cable + CS1W-CN225 (2m) or CS1W-CN625 (6m) by OMRON Corporation	The cable length must be 15m or less.
	2B	User-created cable + CS1W-CN226 (2m) or CS1W-CN626 (6m) by OMRON Corporation	
GP-4105 (COM1)	2C	User-created cable + CS1W-CN225 (2m) or CS1W-CN625 (6m) by OMRON Corporation	
	2D	User-created cable + CS1W-CN226 (2m) or CS1W-CN626 (6m) by OMRON Corporation	

*1 Only the COM port which can communicate by RS-232C can be used.

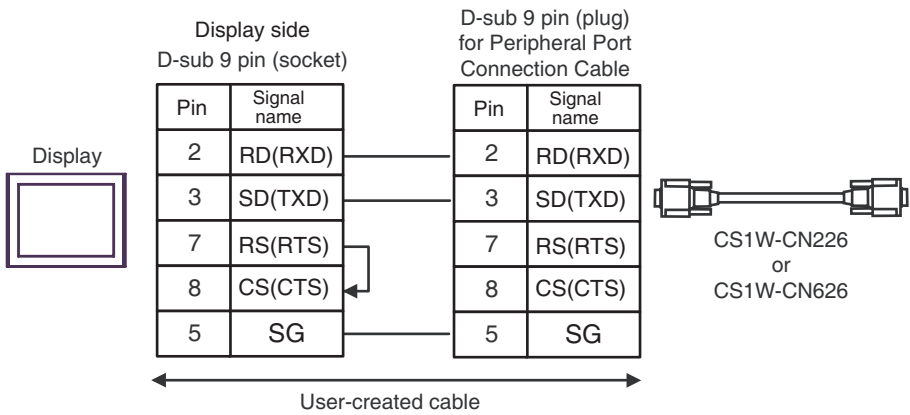


■ IPC COM Port (page 10)

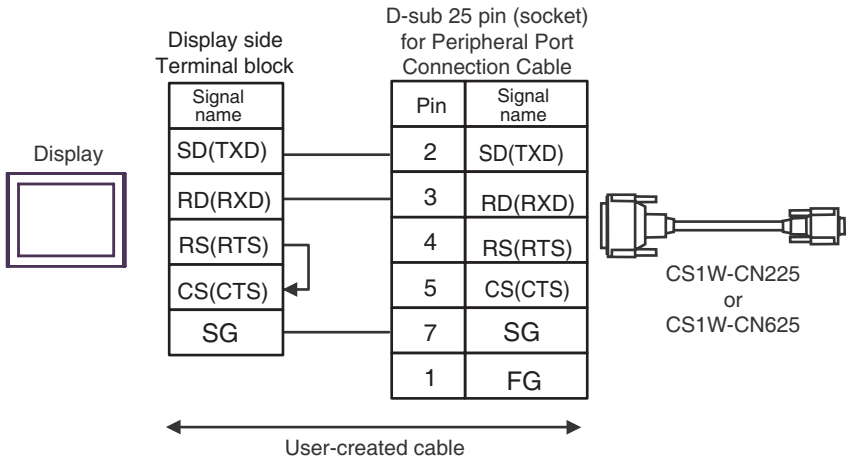
2A)



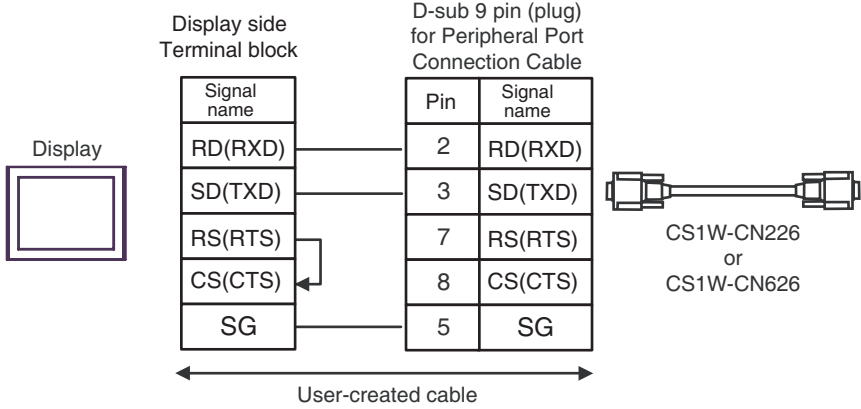
2B)



2C)



2D)



Cable Diagram 3

Display (Connection Port)	Cable		Notes
GP3000 ^{*1} (COM1) AGP-3302B (COM2) GP-4*0ITM (COM1) ST ^{*2} (COM2) IPC ^{*3}	3A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 500m or less.
	3B	User-created cable	
GP3000 ^{*4} (COM2)	3C	Online adapter by Pro-face CA4-ADPONL-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-0 + User-created cable	
	3D	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	
GP-4106 (COM1)	3E	User-created cable	

*1 All GP3000 models except AGP-3302B

*2 All ST models except AST-3211A and AST-3302B

*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.

 ■ IPC COM Port (page 10)

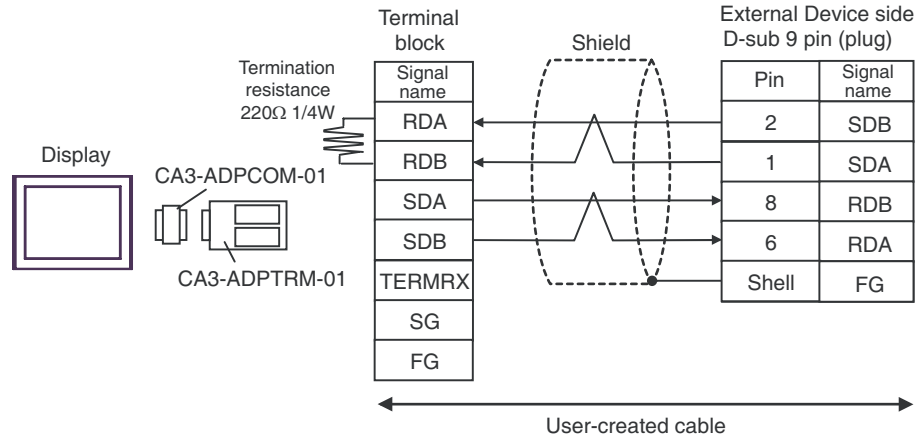
*4 All GP3000 models except GP-3200 series and AGP-3302B

IMPORTANT

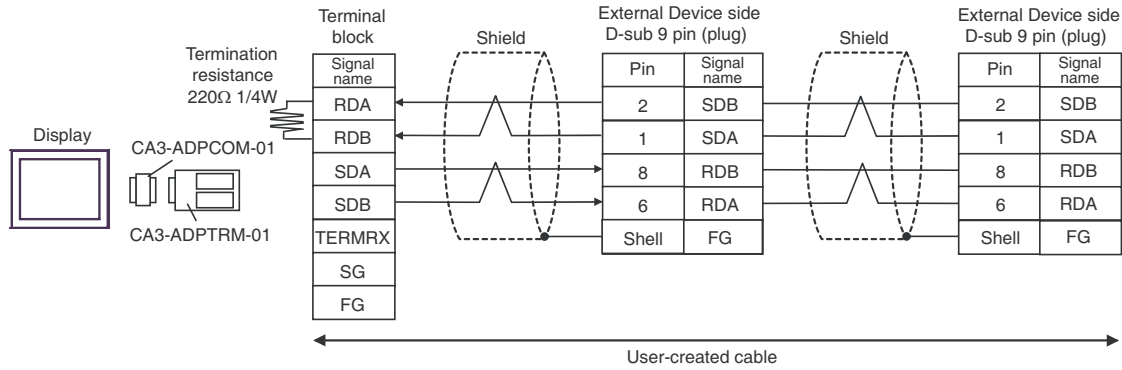
- Please turn ON the termination resistance switch on the PLC.
- Set the 2wire/4wire toggle switch to 4wire.
- Note that pole A and pole B are reversely named for the Display and the External Device.

3A)

- 1:1 connection



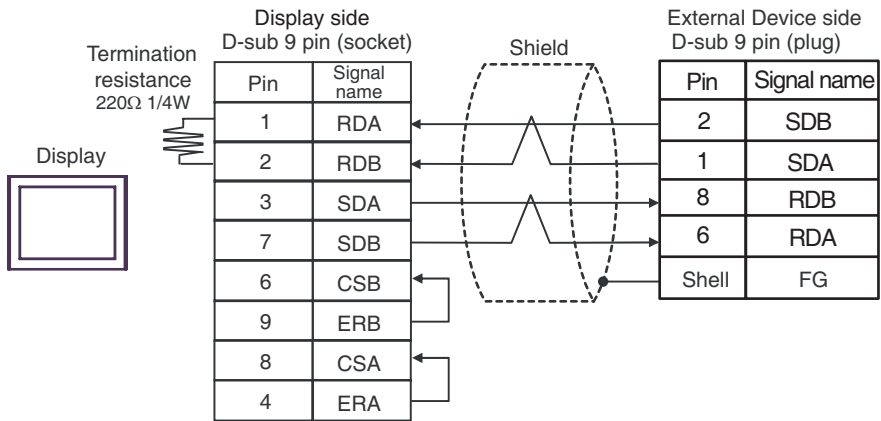
- 1:n connection



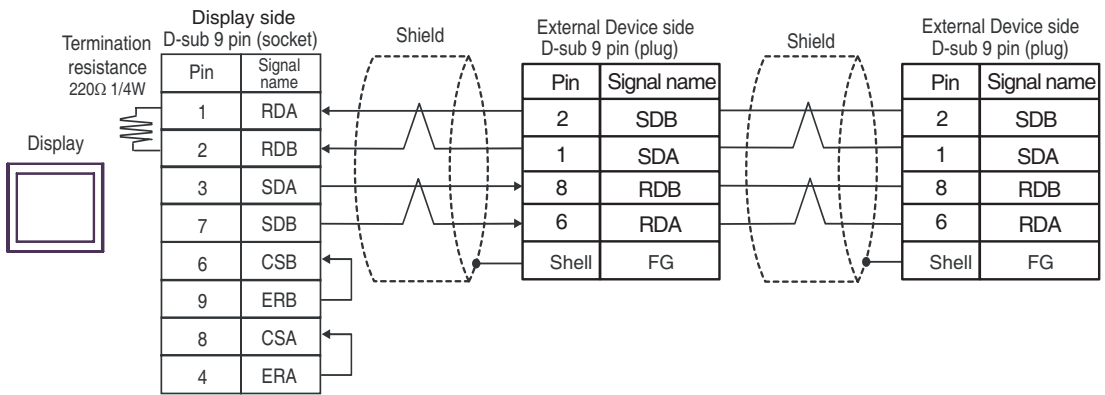
NOTE • When the display unit you use is an IPC, turn ON the DIP switch 6 to insert the termination resistance.

3B)

- 1:1 connection



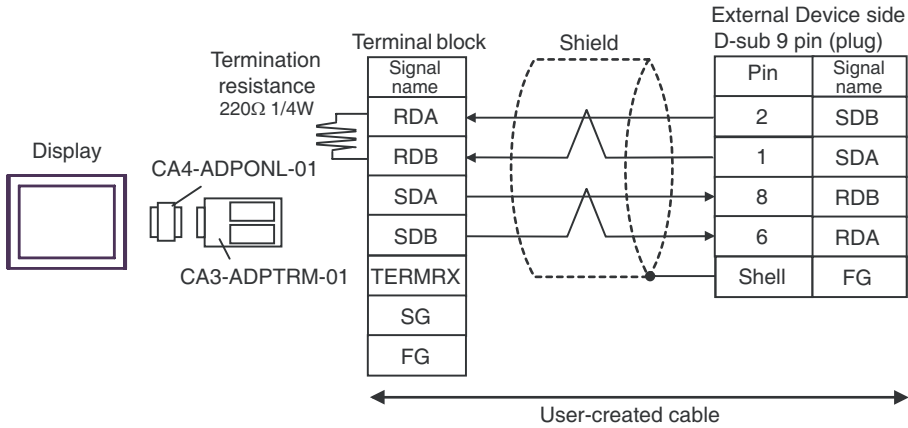
- 1:n connection



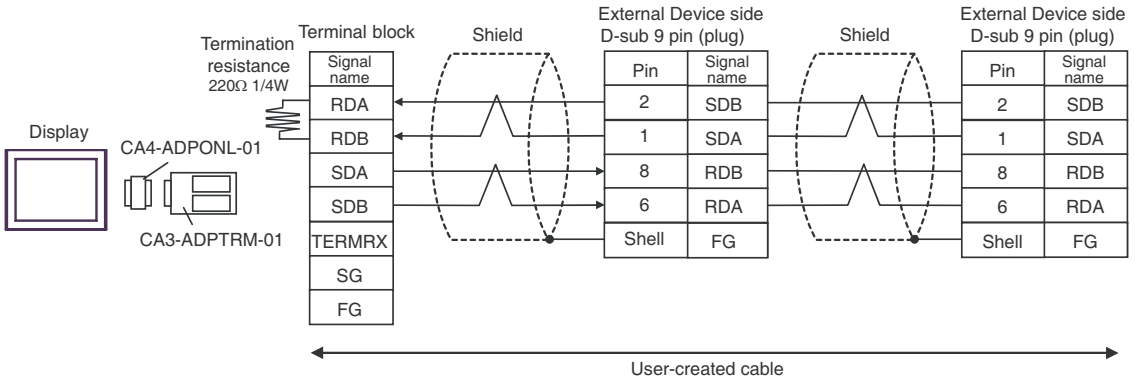
NOTE • When the display unit you use is an IPC, turn ON the DIP switch 6 to insert the termination resistance.

3C)

- 1:1 connection

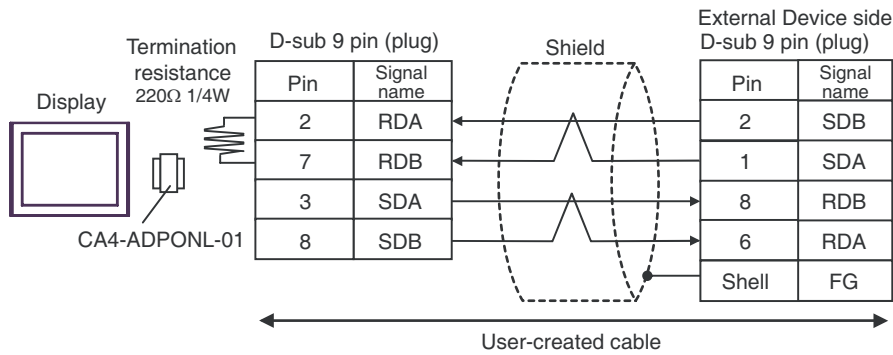


- 1:n connection

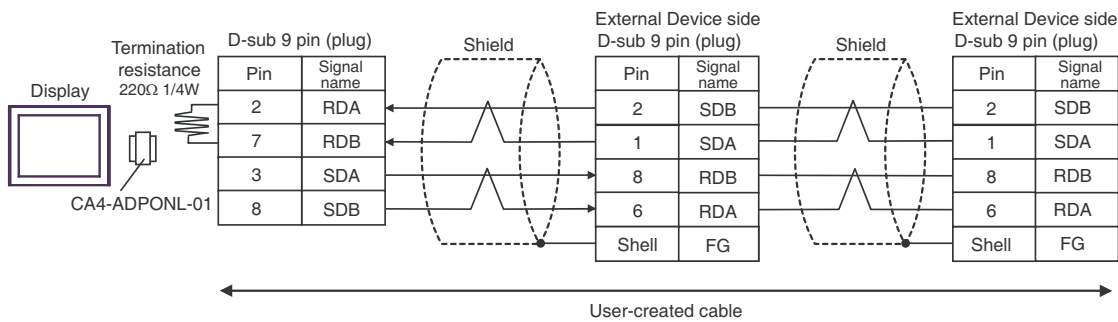


3D)

- 1:1 connection

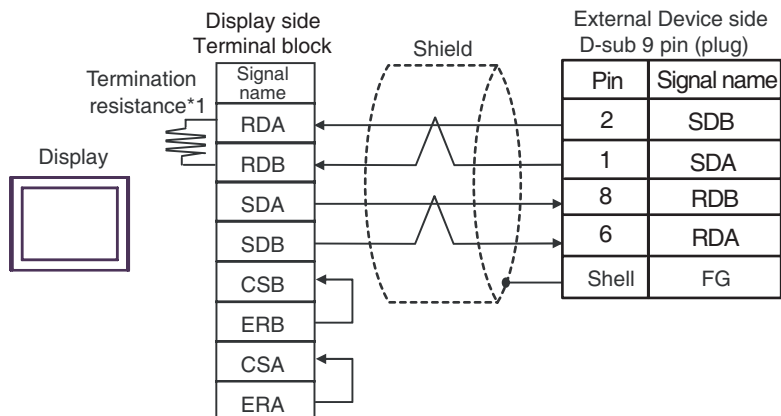


- 1:n connection

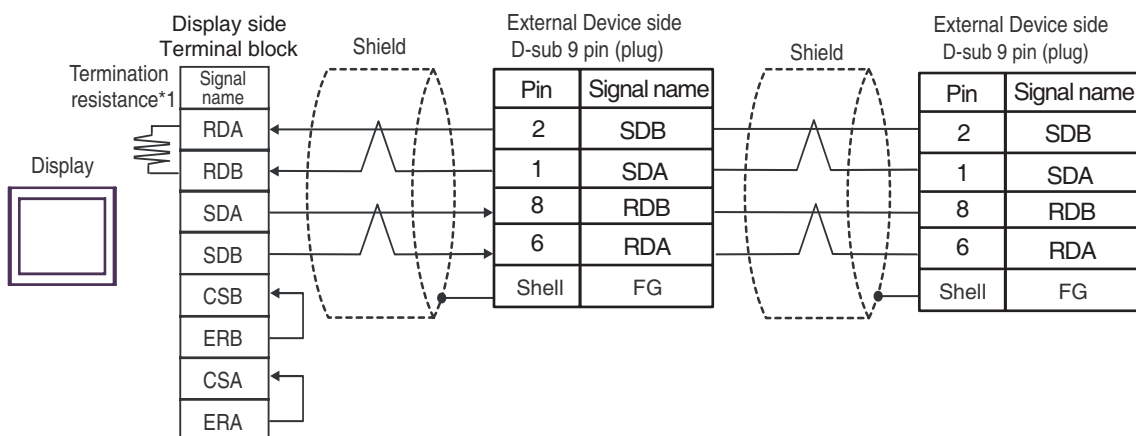


3E)

- 1:1 connection



- 1:n connection



*1 The resistance in the Display is used as the termination resistance. Set the value of the DIP Switch on the rear of the Display as shown in the table below.

DIP Switch No.	Set Value
1	OFF
2	OFF
3	OFF
4	ON


Cable Diagram 4

Display (Connection Port)	Cable		Notes
GP3000 ^{*1} (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) ST ^{*2} (COM2) IPC ^{*3}	4A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable	The cable length must be 500m or less.
	4B	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Multilink cable by Pro-face CA3-CBLMLT-01 + User-created cable	
	4C	User-created cable	
GP3000 ^{*1} (COM2)	4D	Online adapter by Pro-face CA4-ADPONL-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-0 + User-created cable	
	4E	Online adapter by Pro-face CA4-ADPONL-01 + Multilink cable by Pro-face CA3-CBLMLT-01 + User-created cable	
	4F	Online adapter by Pro-face CA4-ADPONL-01 + User-created cable	
GP-4106 (COM1)	4G	User-created cable	

*1 All GP3000 models except AGP-3302B

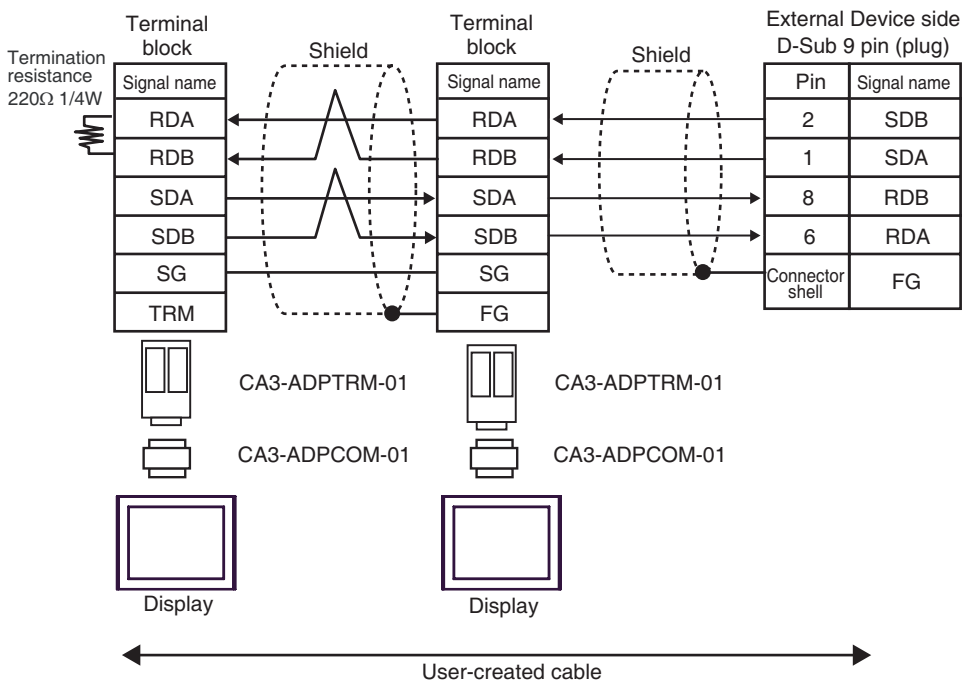
*2 All ST models except AST-3211A and AST-3302B

*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.

 ■ IPC COM Port (page 10)

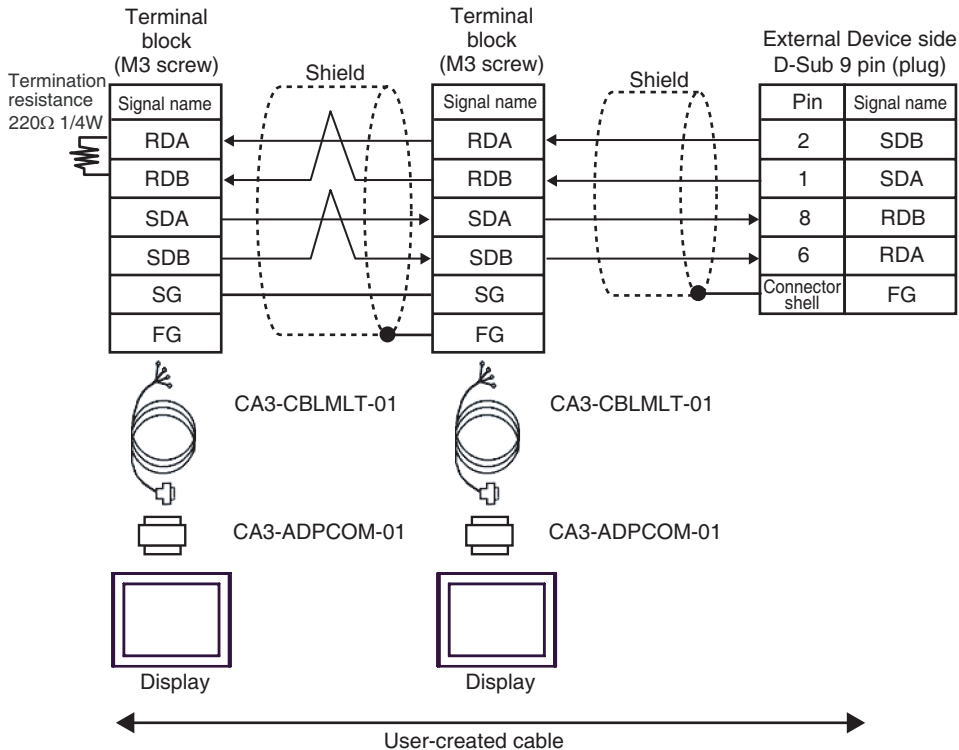
4A)

- n:1 connection



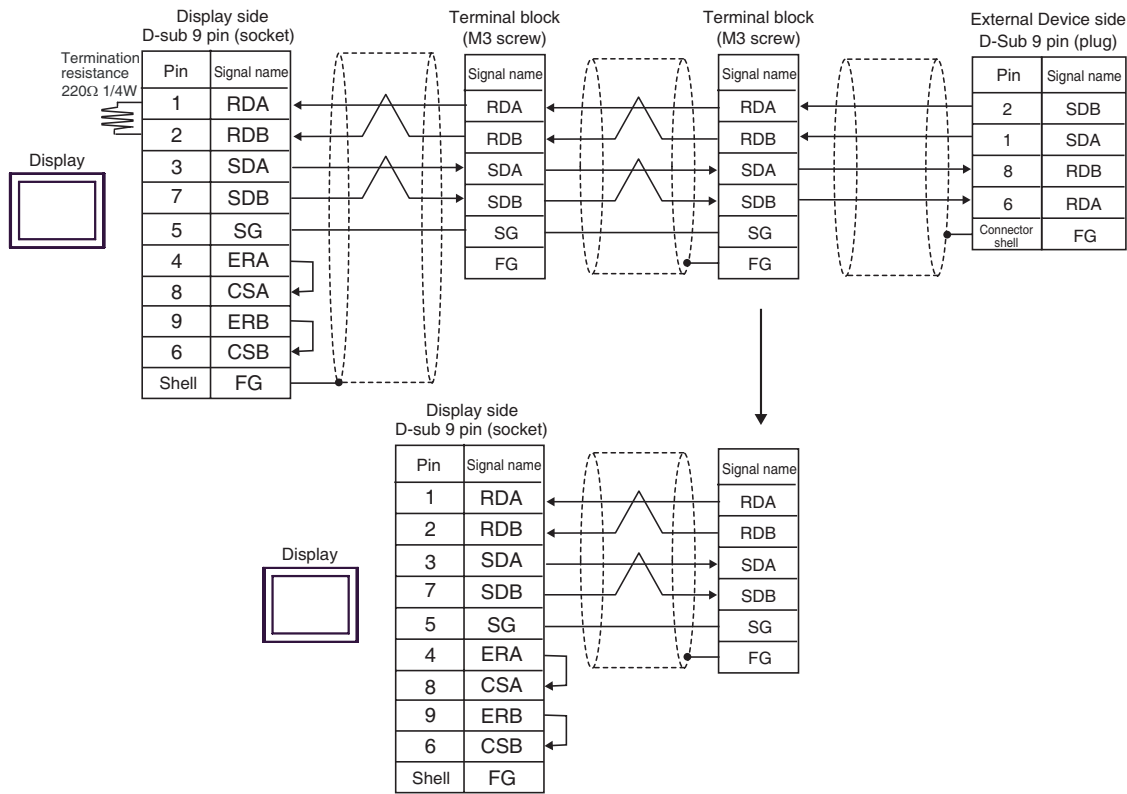
4B)

- n:1 connection



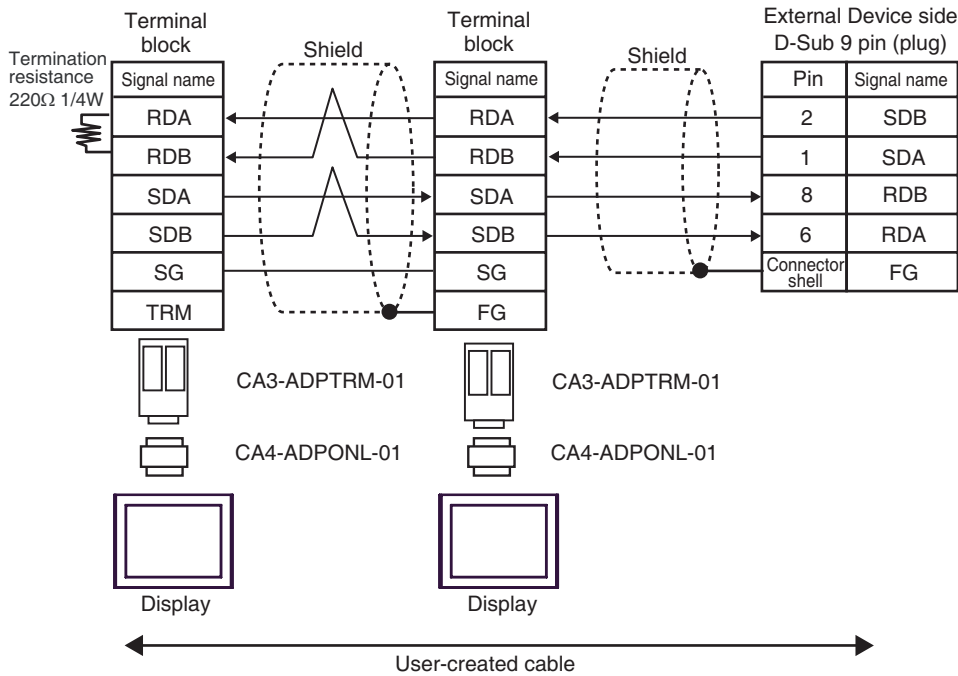
4C)

- n:1 connection



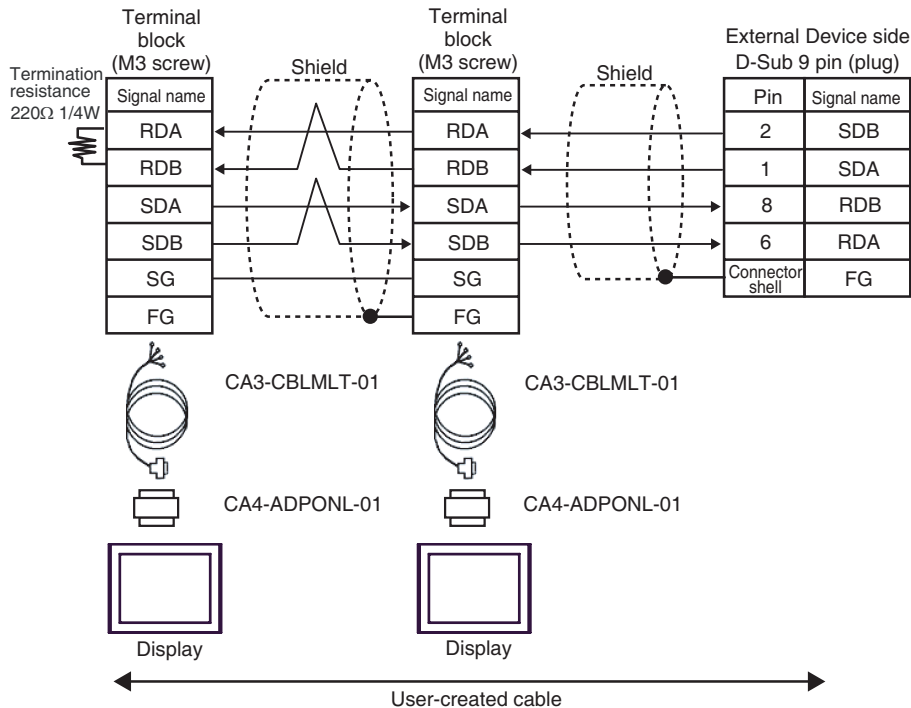
4D)

- n:1 connection



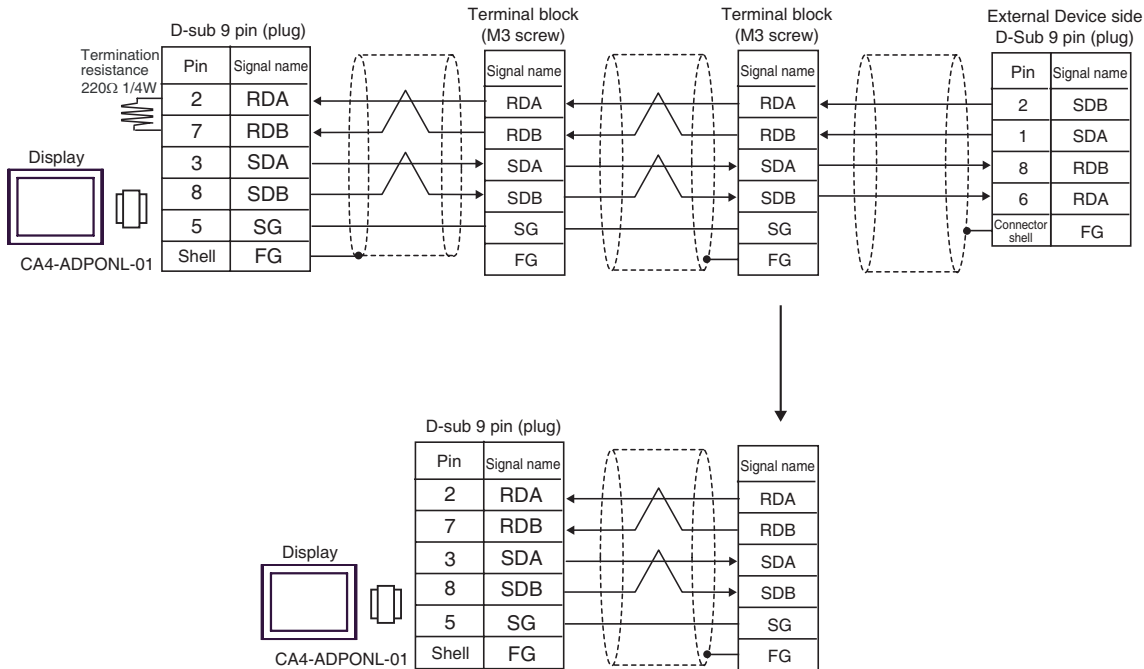
4E)

- n:1 connection



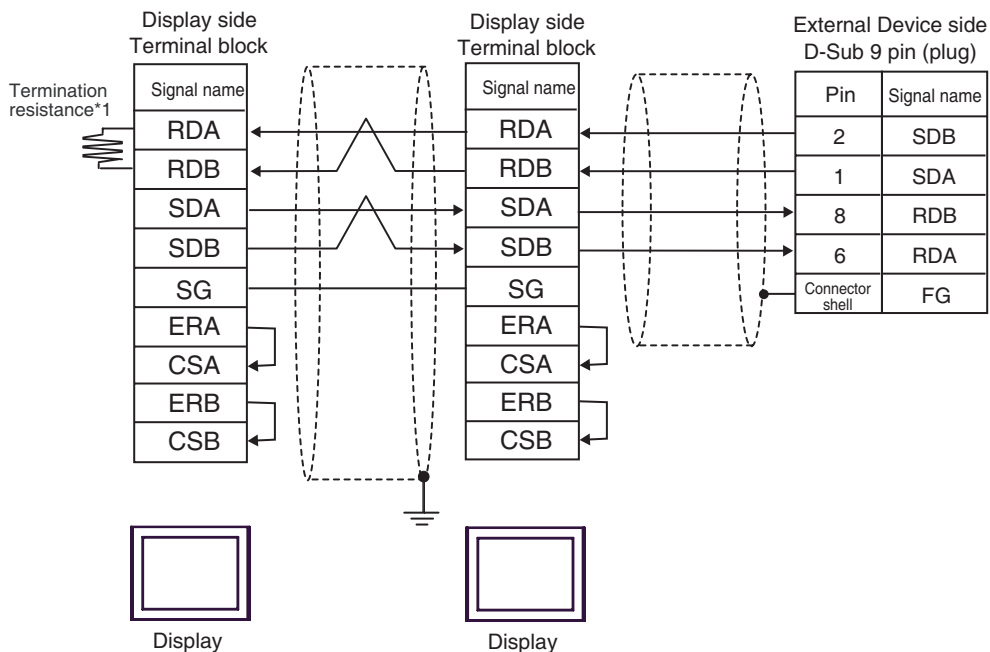
4F)

- n:1 connection



4G)

- n:1 connection



- *1 The resistance in the Display is used as the termination resistance. Set the value of the DIP Switch on the rear of the Display as shown in the table below.

DIP Switch No.	Set Value
1	OFF
2	OFF
3	OFF
4	ON

For the Displays other than that used as the terminal, set the DIP Switch 1-4 on the rear of the Display to OFF in the n:1 connection.

6 Supported Device

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

6.1 CS1/CJ1 Series

 This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
Channel I/O	0000.00-6143.15	0000-6143	<div style="display: flex; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">L / H</div> </div>	
Internal Auxiliary Relay	W000.00-W511.15	W000-W511		
Special Auxiliary Relay	A000.00-A959.15	A000-A959		*1
Latch Relay	H000.00-H511.15	H000-H511		
Timer (Time Up Flag)	T0000-T4095	-		*2
Counter (Count Up Flag)	C0000-C4095	-		*2
Timer (Current Value)	-	T0000-T4095		
Counter (Current Value)	-	C0000-C4095		
Data Memory	D00000.00-D32767.15	D00000-D32767		*3
Extension Data Memory (E0-EC)	E000000.00- EC32767.15	E000000-EC32767		*4*5
Extension Data Memory (Current Bank)	-	EM00000-EM32767		<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">Bit</div> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">15</div> </div> *5*6
Task Flag (Bit)	TKB00-TKB31	-		*2
Task Flag (Status)	TK00.00-TK31.07	TK00-TK30		<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">÷</div> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">2</div> </div> *2
Index Register	-	IR00-IR15		<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">Bit</div> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">31</div> </div> *7
Data Register	-	DR00-DR15		<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">Bit</div> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">15</div> </div> *7

*1 Write disable in A000 to A447.

*2 Write disable

*3 When using the communication unit (CS1W-SCU21), do not use the address of D30000 to D31599. When using the communication board (CS1W-SCU21/41), do not use the address of D32000 to D32767. These addresses may be used as the system setting area on the External Device.


*4 Max 13 banks (E0 to EC) can be used. 1 bank can contain 32768 words. Available bank number is different depending on the CPU unit.

*5 CJM1 Series does not include the extension data memory (E0 to EC, current bank EM).


*6 CJ1 Series does not include the extension data memory (current bank EM).







*7 You cannot write during RUN.

NOTE

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

6.2 CJ2 Series

 This address can be specified as system data area.

Device	Bit Address	Word Address	32 bits	Notes
Channel I/O	0000.00 - 6143.15	0000 - 6143		*1
Internal Auxiliary Relay	W000.00 - W511.15	W000 - W511		
Special Auxiliary Relay	A0000.00 - A1471.15 A10000.00 - A11535.15	A0000 - A1471 A10000 - A11535		*2
Latch Relay	H000.00 - H511.15	H000 - H511		
Timer (Time Up Flag)	T0000 - T4095	-		*3
Counter (Count Up Flag)	C0000 - C4095	-		*3
Timer (Current Value)	-	T0000 - T4095		
Counter (Current Value)	-	C0000 - C4095		
Data Memory	D00000.00 - D32767.15	 D00000 - D32767		 *1
Extension Data Memory (E0-E18)	E0 00000.00 - E18 32767.15	E0 00000 - E18 32767		*4
Extension Data Memory (Current Bank)	-	EM00000 - EM32767		
Task Flag (Bit)	TKB000 - TKB127	-		*3
Task Flag (Status)	TK000.00 - TK127.07	TK000 - TK126		 *3
Index Register	-	IR00 - IR15		 *5
Data Register	-	DR00 - DR15		 *5

*1 Do not write in Channel I/O address 1500-1899 and Data Memory address D30000-D31599 from the Display. Because those address are used for setting the system on the External Device.

*2 Write disable in A000 - A447 and A10000 - A11535.

*3 Write disable

*4 Max 24 bank (E0 to E18) can be used. 1 bank is 32768 words. Available bank number is different depending on the CPU unit.


*5 Write disable during RUN






NOTE

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

 "Manual Symbols and Terminology"

6.3 CP1 Series

 This address can be specified as system data area.


Device	Bit Address	Word Address	32bits	Notes
Channel I/O	0000.00-6143.15	0000-6143		
Internal Auxiliary Relay	W000.00-W511.15	W000-W511		
Special Auxiliary Relay	A000.00-A959.15	A000-A959		*1
Latch Relay	H000.00-H511.15	H000-H511		
Timer (Time Up Flag)	T0000-T4095	-		*2
Counter (Count Up Flag)	C0000-C4095	-		*2
Timer (Current Value)	-	T0000-T4095		
Counter (Current Value)	-	C0000-C4095		
Data Memory	D00000.00-D32767.15	 D00000-D32767		
Task Flag (Bit)	TKB00-TKB31	-		*2
Task Flag (Status)	TK00.00-TK31.07	TK00-TK30		 2 *2
Index Register	-	IR00-IR15		 31 *3
Data Register	-	DR00-DR15		 15 *3

*1 Write disable in A000 to A447.


*2 Write disable



*3 You cannot write during RUN.

NOTE

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

6.4 CP1E Series

 This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
Channel I/O	000.00-289.15	000-289		
Internal Auxiliary Relay	W00.00-W99.15	W00-W99		
Special Auxiliary Relay	A000.00-A753.15	A000-A753		*1
Latch Relay	H00.00-H49.15	H00-H49		
Timer (Time Up Flag)	T000-T255	-		*2
Counter (Count Up Flag)	C000-C255	-		*2
Timer (Current Value)	-	T000-T255		
Counter (Current Value)	-	C000-C255		
Data Memory	D0000.00-D8191.15	 D0000-D8191		

*1 Write disable in A000 to A447.

*2 Write disable

NOTE

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



"Manual Symbols and Terminology"

7 Device Code and Address Code

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

Device	Device Name	Device Code (HEX)	Address Code
Channel I/O	-	0080	Word Address
Internal Auxiliary Relay	W	0082	Word Address
Special Auxiliary Relay	A	0085	Word Address
Latch Relay	H	0084	Word Address
Timer (Current Value)	T	0060	Word Address
Counter (Current Value)	C	0061	Word Address
Data Memory	D	0000	Word Address
Extension Data Memory (E0-E18)	E0	0010	Word Address
	E1	0011	Word Address
	E2	0012	Word Address
	E3	0013	Word Address
	E4	0014	Word Address
	E5	0015	Word Address
	E6	0016	Word Address
	E7	0017	Word Address
	E8	0018	Word Address
	E9	0019	Word Address
	EA	001A	Word Address
	EB	001B	Word Address
	EC	001C	Word Address
	ED	001D	Word Address
	EE	001E	Word Address
	EF	001F	Word Address
	E10	0020	Word Address
	E11	0021	Word Address
	E12	0022	Word Address
	E13	0023	Word Address
	E14	0024	Word Address

Device	Device Name	Device Code (HEX)	Address Code
Extension Data Memory (E0-E18)	E15	0025	Word Address
	E16	0026	Word Address
	E17	0027	Word Address
	E18	0028	Word Address
Extension Data Memory (Current Bank)	EM	0001	Word Address
Task Flag (Status)	TK	0002	Word Address
Index Register	IR	0003	Word Address
Data Register	DR	0004	Word Address

8 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. Name of External Device 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	<p>Displays IP address or device address of External Device where error occurs, or error codes received from External Device.</p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">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.
- Please refer to "Display-related errors" of "Maintenance/Troubleshooting Guide" for a common error message to the driver.

