CS/CJ Series HOST Link Driver

Introduction

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

In this manual, the connection procedure will be described by following the below sections:
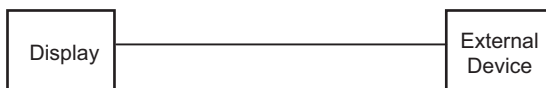
| 1 | System Configuration
This section shows the types of External Devices which can be connected and SIO type. | ☞ "1 System Configuration" (page 3) |

| 2 | Selection of External Device
Select a model (series) of the External Device to be connected and connection method. | ☞ "2 Selection of External Device" (page 7) |

| 3 | Example of Communication Settings
This section shows setting examples for communicating between the Display and the External Device. | ☞ "3 Example of Communication Setting" (page 8) |

| 4 | Communication Settings
This section describes communication setup items on the Display.
Set communication settings of the Display with GP-Pro EX or in off-line mode. | ☞ "4 Setup Items" (page 26) |

| 5 | Cable Diagram
This section shows cables and adapters for connecting the Display and the External Device. | ☞ "5 Cable Diagram" (page 31) |

Operation

1　　　　System Configuration

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

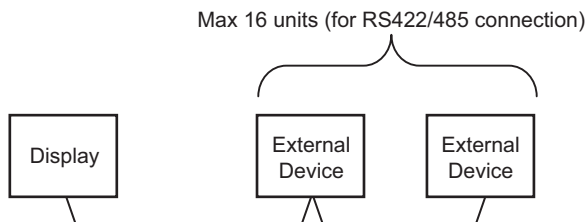| Series	CPU	Connection Port	SIO Type	Communication Settings	Cable Diagram
CS1	CS1G-CPU45 CS1G-CPU44 CS1G-CPU43 CS1G-CPU42 CS1G-CPU45H CS1G-CPU44H CS1G-CPU43H CS1G-CPU42H CS1G-CPU45-V1 CS1G-CPU44-V1 CS1G-CPU43-V1 CS1G-CPU42-V1 CS1H-CPU67 CS1H-CPU66 CS1H-CPU65 CS1H-CPU64 CS1H-CPU63 CS1H-CPU67H CS1H-CPU66H 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 8)	Cable Diagram 1 (page 31)
		Peripheral port on the CPU unit[*1]	RS232C	Setting Example 2 (page 11)	Cable Diagram 2 (page 32)
		CS1W-SCU21	RS232C	Setting Example 5 (page 20)	Cable Diagram 1 (page 31)
		CS1W-SCB21	RS232C	Setting Example 3 (page 14)	
		CS1W-SCB41	RS232C	Setting Example 3 (page 14)	
			RS422/485 (4wire)	Setting Example 4 (page 17)	Cable Diagram 3 (page 33)
CJ	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 8)	Cable Diagram 1 (page 31)
		Peripheral port on the CPU unit[*1]	RS232C	Setting Example 2 (page 11)	Cable Diagram 2 (page 32)
		CJ1W-SCU41	RS232C	Setting Example 5 (page 20)	Cable Diagram 1 (page 31)
			RS422/485 (4wire)	Setting Example 6 (page 23)	Cable Diagram 3 (page 33)

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

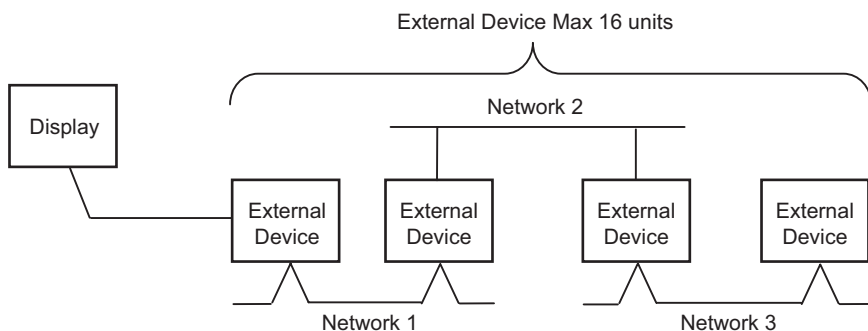## ■ Connection Configuration

- • 1:1 Connection

| Display | ——————————————————— | External Device |

- • 1:n Connection

Max 16 units (for RS422/485 connection)

| Display | External Device | External Device |

- • Access beyond network

You can access beyond maximum 3 levels of network.

External Device Max 16 units

Network 2

| Display | External Device | External Device | External Device | External Device |

Network 1   Network 3

■ COM Port of IPC

When connecting IPC with External Device, the COM port which can be used changes with series and SIO type.
Please refer to the manual of IPC 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-3650A, PS-3651A	COM1[*1]	-	-
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]

*1   The RI/5V can be switched. Please switch with the change switch of IPC.

*2   It is necessary to set up the SIO type with the Dip switch. Please set up as follows according to SIO type to be used.

Dip switch setting: RS-232C

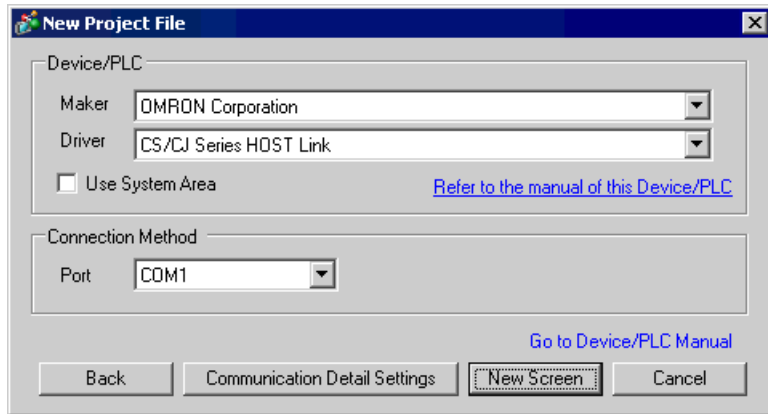| Dip switch	Setting	Description
1	OFF	Reserve (always OFF)
2	OFF	SIO type: RS-232C
3	OFF	
4	OFF	Output mode of SD (TXD) data: Always output
5	OFF	Terminal resistance (220Ω) insertion to SD (TXD): None
6	OFF	Terminal resistance (220Ω) insertion to RD (RXD): None
7	OFF	Short-circuit of SDA (TXA) and RDA (RXA): Does not Exist
8	OFF	Short-circuit of SDB (TXB) and RDB (RXB): Does not Exist
9	OFF	RS (RTS) Auto control mode: Disable
10	OFF	

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

Dip switch	Setting	Description
1	OFF	Reserve (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): Does not Exist
8	OFF	Short-circuit of SDB (TXB) and RDB (RXB): Does not Exist
9	OFF	RS (RTS) Auto control mode: Disable
10	OFF	

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

Dip switch	Setting	Description
1	OFF	Reserve (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): Exist
8	ON	Short-circuit of SDB (TXB) and RDB (RXB): Exist
9	ON	RS (RTS) Auto control mode: Enable
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 "Appendix 1.4 LS Area (only for direct access method)" This can be also set with GP-Pro EX or in off-line mode of Display. Cf. GP-Pro EX Reference Manual " 5.14.6 Setting Guide of [System Setting Window]■[Main Unit Settings] Settings Guide◆System Area Setting" Cf. Maintenance/Troubleshooting "2.14.1 Settings common to all Display models◆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 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/CTS)	○ 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]

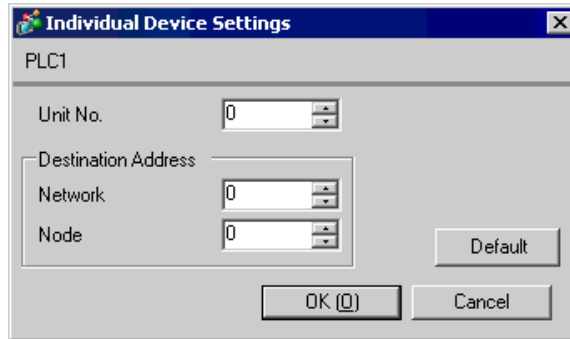Device-Specific Settings

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

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

◆ 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.

Individual Device Settings	✕
PLC1	
Unit No.	0
Destination Address	
Network	0
Node	0
	Default
	OK (O) Cancel

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 [PC System 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 |

Summary   Change Device/PLC

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/CTS)   ○ 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

◆ 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.

Individual Device Settings	
PLC1	
Unit No.	0
Destination Address	
Network	0
Node	0
OK (O)	Cancel

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 [PC System 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 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/CTS)   ○ 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
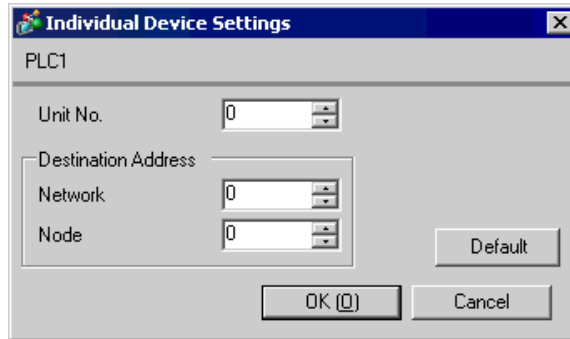
Allowable No. of Device/PLCs 16 Unit(s)

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

◆ 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.

Individual Device Settings	✕
PLC1	

Unit No.   0

Destination Address

Network   0

Node   0   Default

OK (O)   Cancel

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
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[*1]	Option
Node Address Setting Rotary Switch[*2]	Option

*1   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.

*2   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

Summary   Change Device/PLC

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/CTS)   ○ 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

◆ Device Setting

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

When you connect multiple External Device, click [icon] 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
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[*3]	Option
Node Address Setting Rotary Switch[*4]	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   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.

*4   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		

Summary   Change Device/PLC

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/CTS)   ○ 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
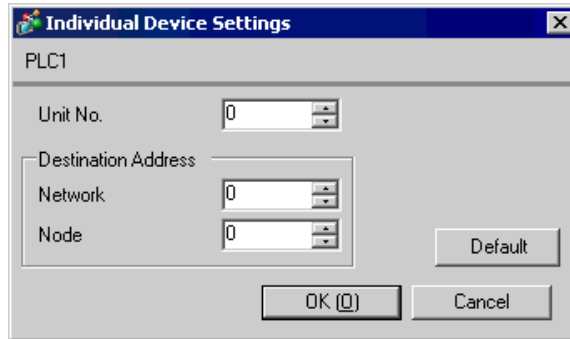
Device-Specific Settings

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

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

◆ 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.

Individual Device Settings	✕
PLC1	

Unit No.   0

Destination Address

Network   0

Node   0   Default

OK (O)   Cancel

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.

CS/CJ Series HOST Link Driver

■ Setting of External Device

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
Line Speed	19200
Parameter	1,7,2,E
Mode	Default (HOST Link)
Send Delay Time	0
CS Control	None
Unit No. Setting Rotary Switch[1]	Same value as "CPU High Function Unit No."
Unit No.	Option
Source Network Address[2]	Option
Node Address Setting Rotary Switch[3]	Option

[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] 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.

3.6 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 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/CTS)   ○ 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

◆ 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.

Individual Device Settings	✕
PLC1	
Unit No.	0
Destination Address	
Network	0
Node	0 Default
	OK (O) Cancel

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 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
WIRE (2wire/4wire switch)[*1]	4wire
TERM (Termination resistance switch)[*2]	ON
Line Speed	19200
Parameter	1,7,2,E
Mode	Default (HOST Link)
Send Delay Time	0
CS Control	None
Unit No. Setting Rotary Switch[*3]	Same value as "CPU High Function Unit No."
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 Controller Link unit to set.

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

*3   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.

*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.

4 Setup Items

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

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

)"3 Example of Communication Setting" (page 8)

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.

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.

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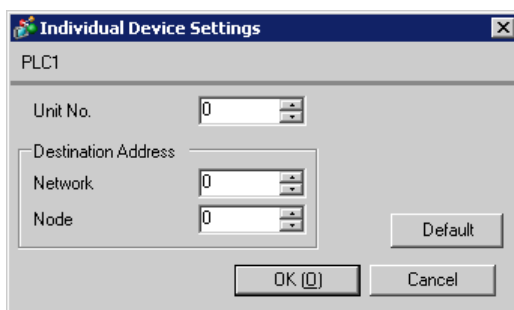
Setup Items	Setup Description
Unit No.	Enter the unit No. for HOST link.
Network	Enter the destination network address.
Node	Enter the destination node address.

4.2 Setup Items in Off-line Mode

NOTE • Please refer to Maintenance/Troubleshooting for more information on how to enter off-line mode
or about operation.
Cf. Maintenance/Troubleshooting "2.2 Offline Mode"

■ Communication Settings

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

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.
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].

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

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.

	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.

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
GP (COM1) ST (COM1) IPC[*1]	A	OMRON SYSMAC link cable by Pro-face CA3-CBLSYS-01 (5m)	
	B	XW2Z-200S-V (2m) or XW2Z-500S-V (5m) by OMRON Corporation	
	C	Your own cable	The cable length must be 15m or less.

*1   Only the COM port which can communicate by RS-232C can be used.
)■ COM Port of IPC (page 5)

A) When using OMRON SYSMAC link cable (CA3-CBLSYS-01) by Pro-face

B) When using XW2Z-200S-V or XW2Z-500S-V by OMRON Corporation

CA3-CBLSYS-01
or
XW2Z-200S-V
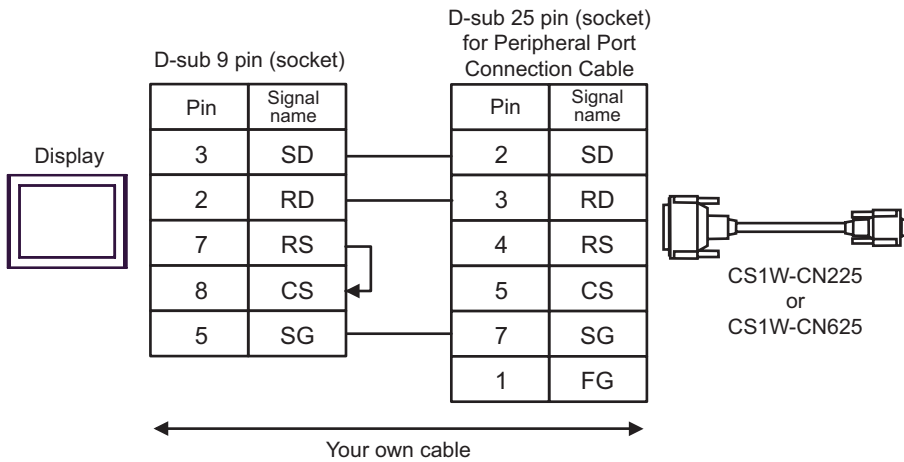or
XW2Z-500S-V

Display   External Device

C) When using your own cable

D-sub 9 pin (socket)   Shield   External Device D-sub 9 pin (plug)

Pin	Signal name		Pin	Signal name
3	SD		2	SD
2	RD		3	RD
7	RS		4	RS
8	CS		5	CS
5	SG		9	SG
			1	FG
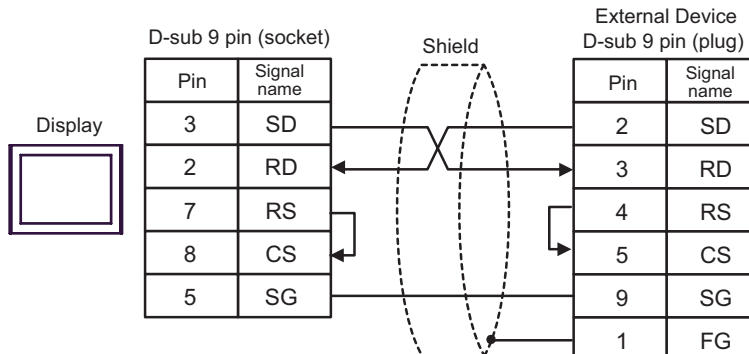
Display

Cable Diagram 2

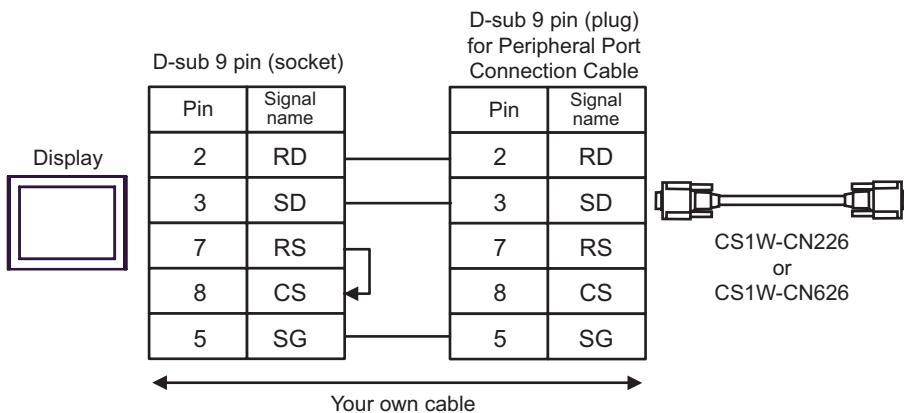| Display (Connection Port)		Cable	Notes
GP (COM1) ST (COM1) IPC[*1]	A	CS1W-CN225 (2m) or CS1W-CN625 (6m) by OMRON Corporation + Your own cable	The cable length must be 15m or less.
	B	CS1W-CN226 (2m) or CS1W-CN626 (6m) by OMRON Corporation + Your own cable	

*1   Only the COM port which can communicate by RS-232C can be used.
    ☞ ■ COM Port of IPC (page 5)

A) When using CS1W-CN225 or CS1W-CN625 by OMRON Corporation or your own cable

D-sub 25 pin (socket)
for Peripheral Port
Connection Cable

D-sub 9 pin (socket)

Display

Pin	Signal name		Pin	Signal name
3	SD		2	SD
2	RD		3	RD
7	RS		4	RS
8	CS		5	CS
5	SG		7	SG
			1	FG

CS1W-CN225
or
CS1W-CN625

Your own cable

B) When using CS1W-CN226 or CS1W-CN626 by OMRON Corporation or your own cable

D-sub 9 pin (plug)
for Peripheral Port
Connection Cable

D-sub 9 pin (socket)

Display

Pin	Signal name		Pin	Signal name
2	RD		2	RD
3	SD		3	SD
7	RS		7	RS
8	CS		8	CS
5	SG		5	SG

CS1W-CN226
or
CS1W-CN626

Your own cable

Cable Diagram 3

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

*1   All GP models except AGP-3302B

*2   All ST models except AST-3211A

*3   Only the COM port which can communicate by RS-422/485 (4 wire) can be used.
      ☞ ■ COM Port of IPC (page 5)

*4   All GP 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.

A) When using the COM port conversion adapter (CA3-ADPCOM-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable
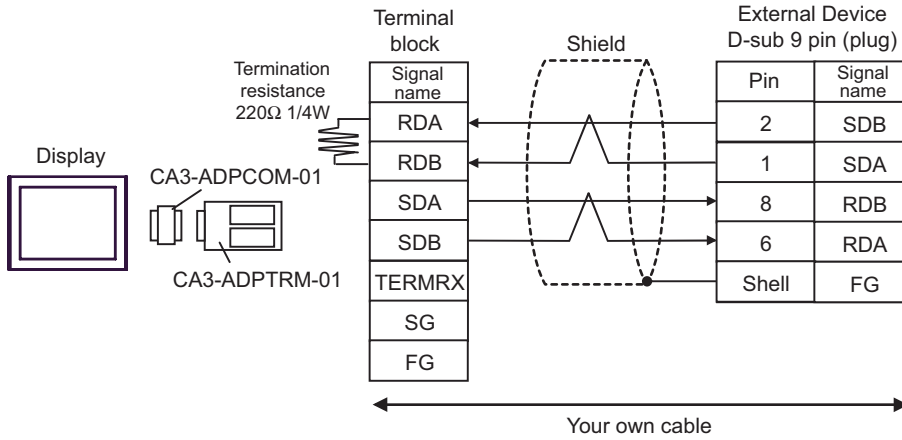
- 1:1 connection
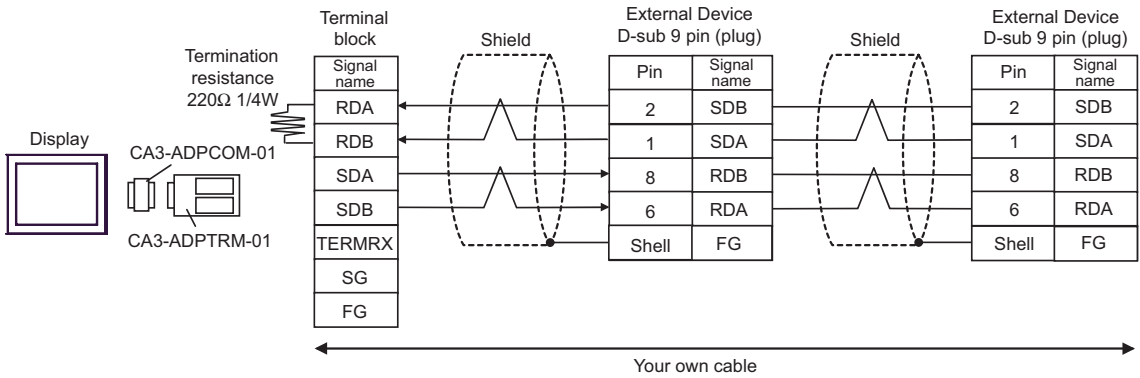
- 1:n connection

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

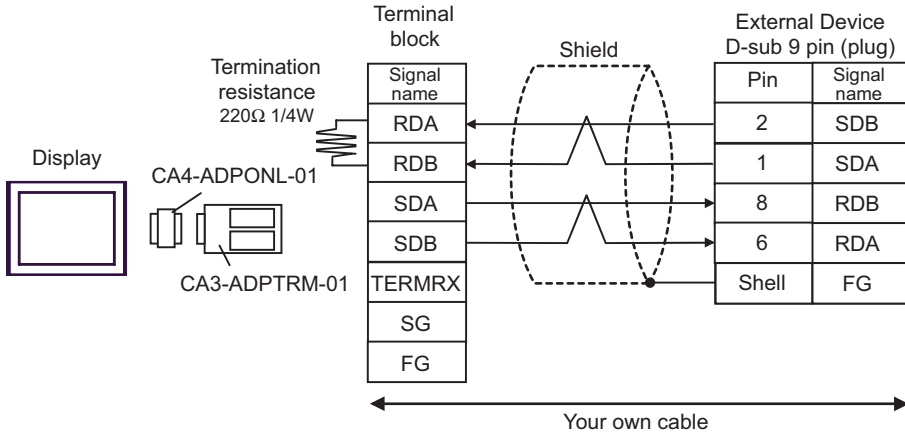B) When using your own cable

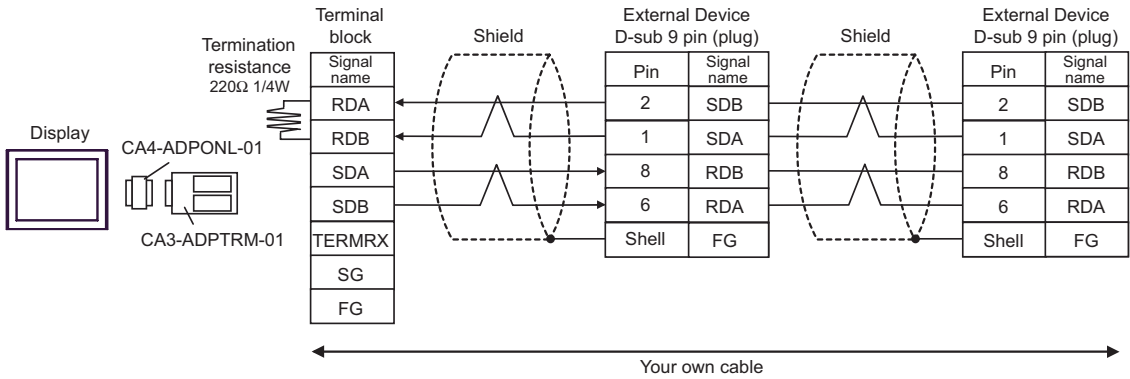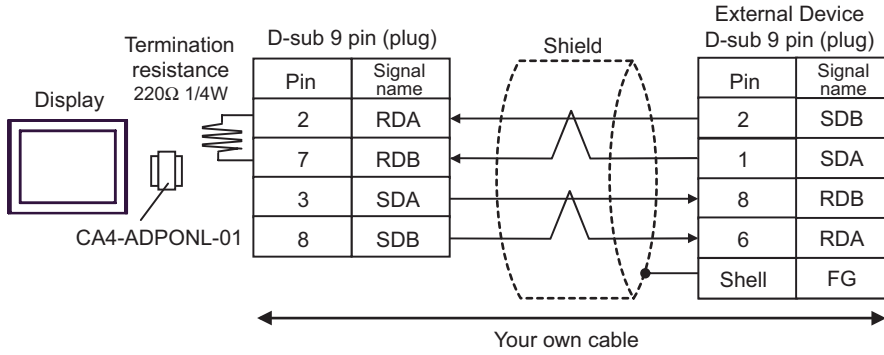• 1:1 connection
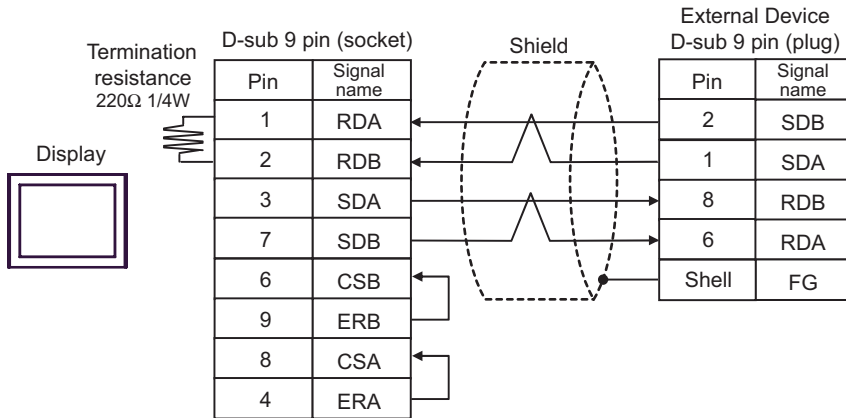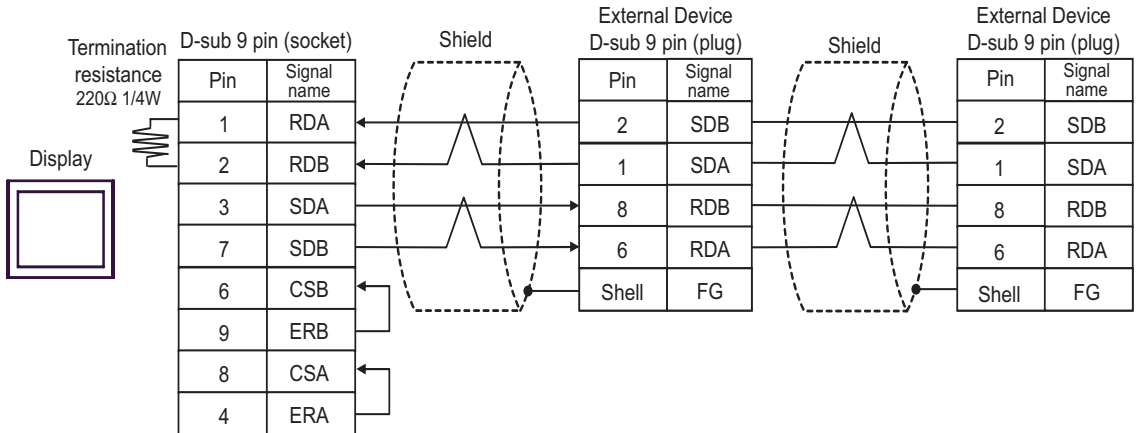
• 1:n connection

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

C) When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

• 1:1 connection

• 1:n connection

D) When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable
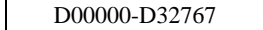
• 1:1 connection

• 1:n connection
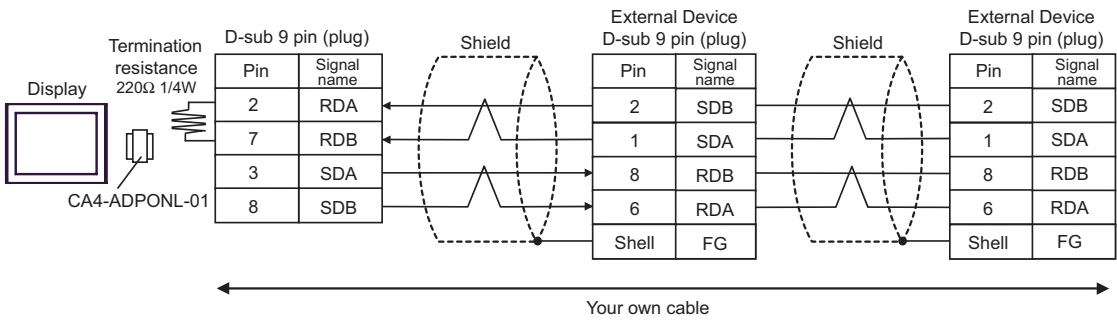
6   Supported Device

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.

☐ 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	⌈L / H⌉	*3
Extension Data Memory (E0-EC)	E000000.00-EC32767.15	E000000-EC32767		*4*5
Extension Data Memory (Current Bank)	-	EM00000-EM32767		⸤Bit15⸥ *5*6
Task Flag (Bit)	TKB00-TKB31	-		*2
Task Flag (Status)	TK00.00-TK31.07	TK00-TK30		⸤÷2⸥ *2
Index Register	-	IR00-IR15		⸤Bit31⸥ *7
Data Register	-	DR00-DR15		⸤Bit15⸥ *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   CJ 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 "Appendix 1.4 LS Area (only for direct access method)"

• 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-EC)	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
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	Displays IP address or device address of External Device where error occurs, or error codes received from External Device. **NOTE** • IP address is displayed such as "IP address(Decimal): MAC address(Hex)". • Device address is diplayed 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 [02])"

NOTE
• Please refer to the manual of External Device for more detail of received error codes.
• Please refer to "When an error message is displayed (Error code list)" of "Maintenance/ Troubleshooting" for a common error message to the driver.