



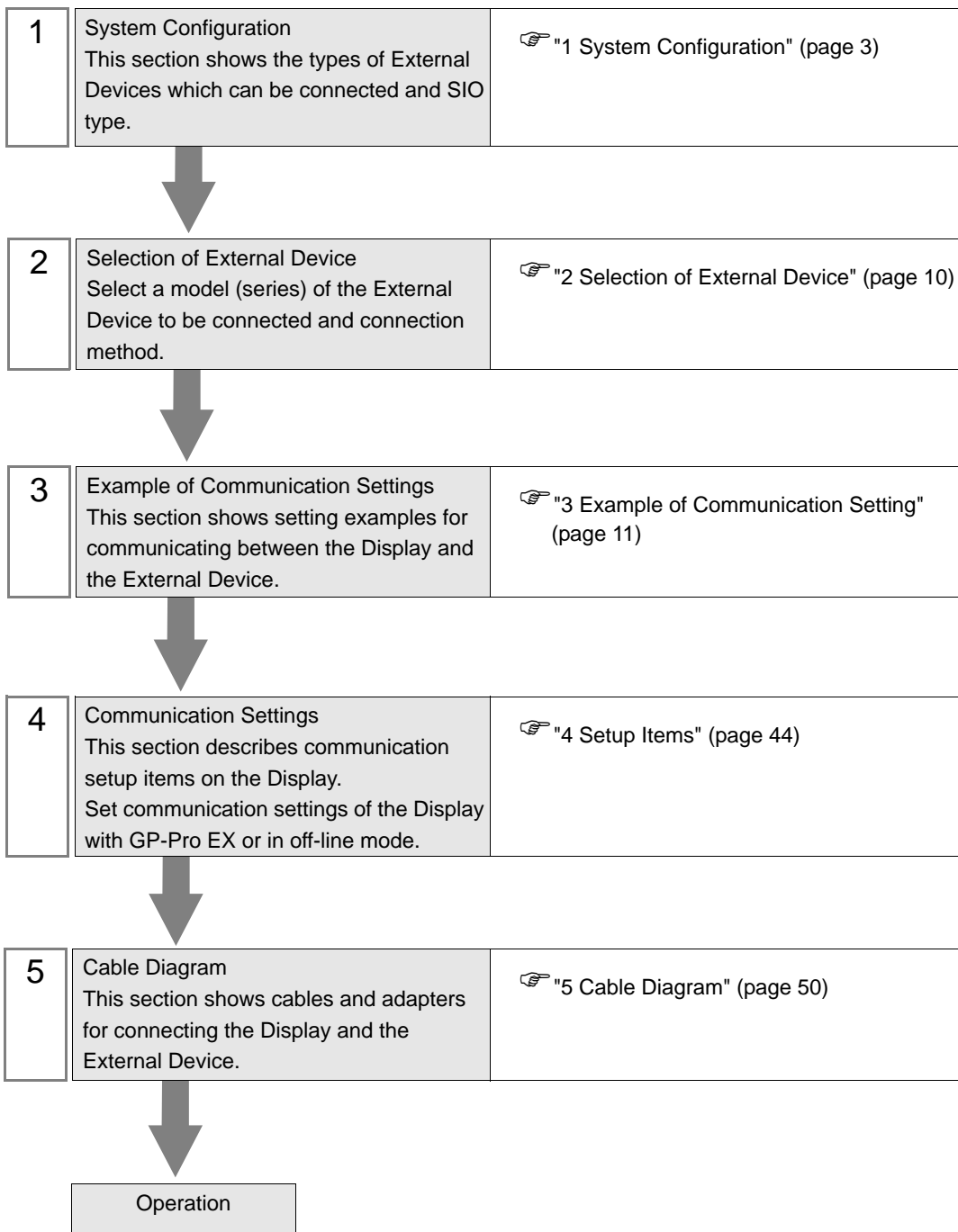
CS/CJ Series HOST Link Driver

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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	RS232C port on the CPU unit	RS232C	Setting Example 1 (page 11)	Cable Diagram 1 (page 50)	
	CS1G-CPU45V1 CS1G-CPU44V1 CS1G-CPU43V1 CS1G-CPU42V1	Peripheral port on the CPU unit*2	RS232C	Setting Example 2 (page 14)	Cable Diagram 2 (page 51)	
	CS1H-CPU67 CS1H-CPU66 CS1H-CPU65 CS1H-CPU64 CS1H-CPU63 CS1H-CPU67H CS1H-CPU66H CS1H-CPU65H CS1H-CPU64H CS1H-CPU63H CS1H-CPU66V1 CS1H-CPU65V1 CS1H-CPU64V1 CS1H-CPU63V1	CS1W-SCU21	RS232C	Setting Example 5 (page 23)	Cable Diagram 1 (page 50)	
	CS1W-SCB21	RS232C	Setting Example 3 (page 17)			
		CS1W-SCB41	RS232C	Setting Example 3 (page 17)	Cable Diagram 3 (page 52)	
			RS422/485 (4wire)	Setting Example 4 (page 20)		
			RS422/485 (4wire) Multilink	Setting Example 4 (page 20)	Cable Diagram 4 (page 57)	
	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 11)	Cable Diagram 1 (page 50)
			Peripheral port on the CPU unit*2	RS232C	Setting Example 2 (page 14)	Cable Diagram 2 (page 51)
			CJ1W-SCU41	RS232C	Setting Example 5 (page 23)	Cable Diagram 1 (page 50)
				RS422/485 (4wire)	Setting Example 6 (page 26)	Cable Diagram 3 (page 52)
				RS422/485 (4wire) Multilink	Setting Example 6 (page 26)	Cable Diagram 4 (page 57)

Series	CPU*1	Connection Port	SIO Type	Communication Settings	Cable Diagram
CJ2	CJ2H-CPU64-EIP CJ2H-CPU65-EIP CJ2H-CPU66-EIP CJ2H-CPU67-EIP CJ2H-CPU68-EIP	RS232C port on the CPU unit	RS-232C	Setting Example 11 (page 41)	Cable Diagram 1 (page 50)
		CJ1W-SCU21 CJ1W-SCU21-V1	RS-232C	Setting Example 5 (page 23)	
		CJ1W-SCU31-V1	RS422/485 (4wire)	Setting Example 6 (page 26)	Cable Diagram 3 (page 52)
			RS422/485 (4wire) Multilink	Setting Example 6 (page 26)	Cable Diagram 4 (page 57)
		CJ1W-SCU41 CJ1W-SCU41-V1	RS-232C	Setting Example 5 (page 23)	Cable Diagram 1 (page 50)
			RS422/485 (4wire)	Setting Example 6 (page 26)	Cable Diagram 3 (page 52)
			RS422/485 (4wire) Multilink	Setting Example 6 (page 26)	Cable Diagram 4 (page 57)

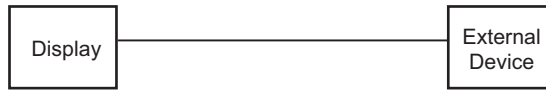
Series	CPU*1	Connection Port	SIO Type	Communication Settings	Cable Diagram
CP1	CP1L-M□□DR-A CP1L-M□□DR-D CP1L-M□□DT-D CP1L-M□□DT1-D CP1L-M□□DT-A CP1L-L□□DR-A CP1L-L□□DR-D CP1L-L□□DT1-D CP1L-L□□DT-A	Option board CP1W-CIF01	RS232C	Setting Example 7 (page 29)	Cable Diagram 1 (page 50)
		Option board CP1W-CIF11	RS422/485 (4wire)	Setting Example 8 (page 32)	Cable Diagram 3 (page 52)
	RS422/485 (4wire) Multilink		Setting Example 8 (page 32)	Cable Diagram 4 (page 57)	
	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 35)	Cable Diagram 1 (page 50)
		Option board CP1W-CIF11	RS422/485 (4wire)	Setting Example 10 (page 38)	Cable Diagram 3 (page 52)
			RS422/485 (4wire) Multilink	Setting Example 10 (page 38)	Cable Diagram 4 (page 57)
		CJ1W-SCU21 CJ1W-SCU21-V1	RS232C	Setting Example 5 (page 23)	Cable Diagram 1 (page 50)
		CJ1W-SCU41 CJ1W-SCU41-V1	RS232C	Setting Example 5 (page 23)	Cable Diagram 1 (page 50)
			RS422/485 (4wire)	Setting Example 6 (page 26)	Cable Diagram 3 (page 52)
			RS422/485 (4wire) Multilink	Setting Example 6 (page 26)	Cable Diagram 4 (page 57)
		CJ1W-SCU31-V1	RS422/485 (4wire)	Setting Example 6 (page 26)	Cable Diagram 3 (page 52)
			RS422/485 (4wire) Multilink	Setting Example 6 (page 26)	Cable Diagram 4 (page 57)

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

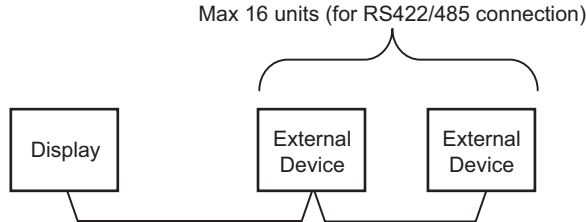
*2 Turn ON the DIP switch 4 on the CPU unit.

■ Connection Configuration

- 1:1 Connection

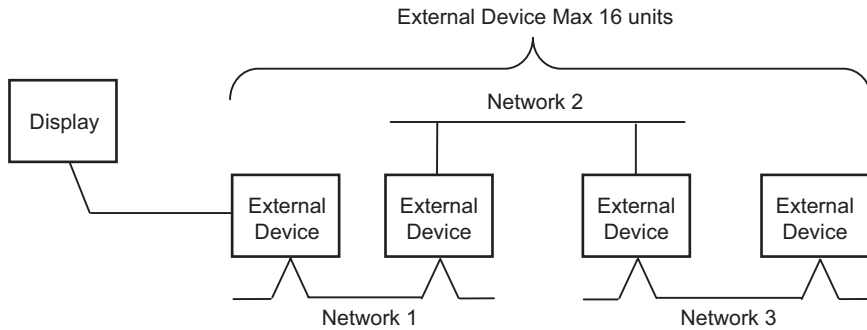


- 1:n Connection

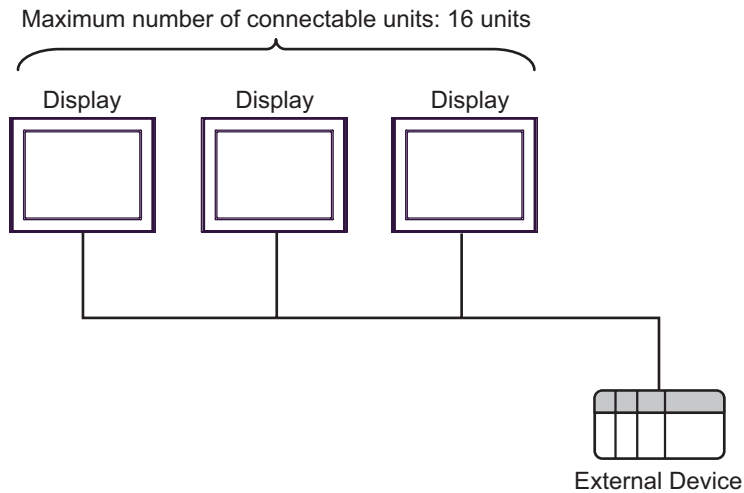


- Access beyond network

You can access beyond maximum 3 levels of network.



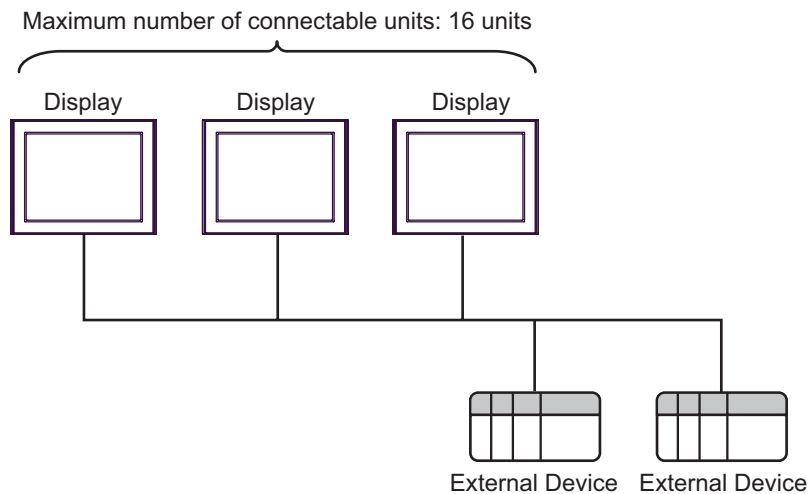
- n:1 Connection (Multilink connection)



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, 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}
PL-3000B, PL-3600T, PL-3600K, PL-3700T, PL-3700K, PL-3900T	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.

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	

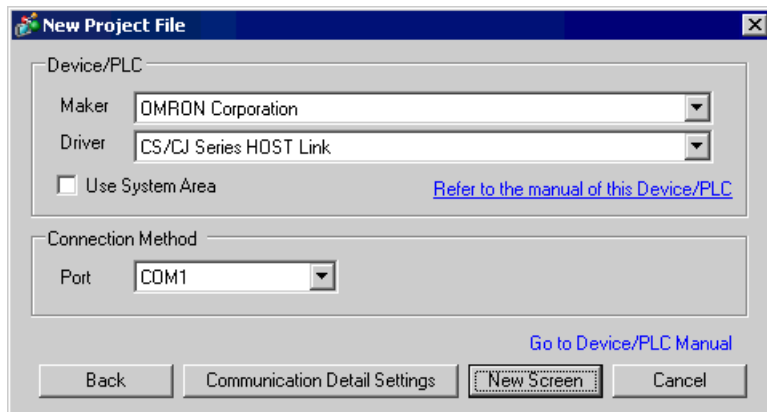
*1 When the connection configuration are the n:1 and n:m connections (both Multilink connections), turn ON the set value.

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 "Appendix 1.4 LS Area (Direct Access Method)" This can also be set in GP-Pro EX or in the Display's off-line mode. Cf. GP-Pro EX Reference Manual "5.17.6 [System Settings] Setting Guide,[Display Unit] Settings Guide, System Area Settings" Cf. Maintenance/Troubleshooting Manual "2.15.1 Settings common to all Display models, [Main Unit Settings] Settings Guide, 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.

Device-Specific Settings

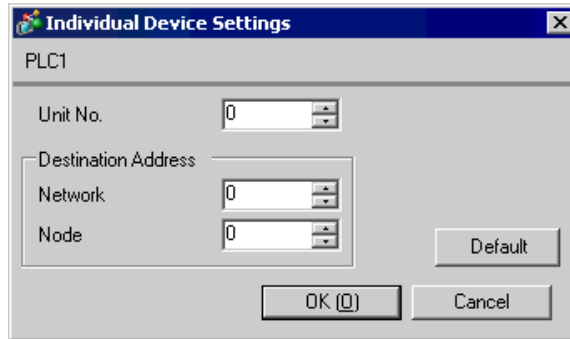
Allowable No. of Device/PLCs 16 Unit(s)

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

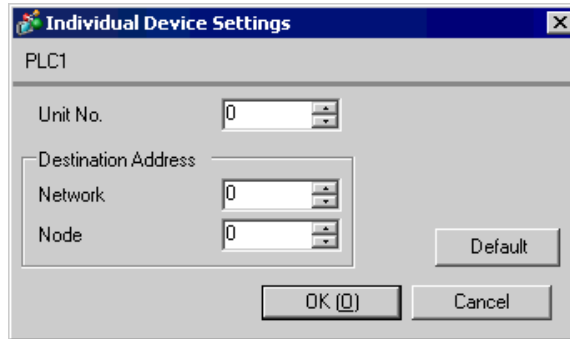
Allowable No. of Device/PLCs 16 Unit(s)

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 [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

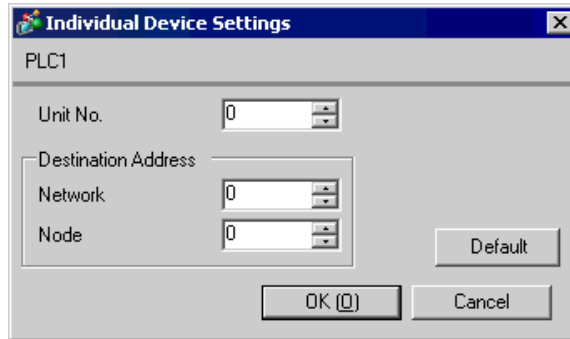
Allowable No. of Device/PLCs 16 Unit(s)

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
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

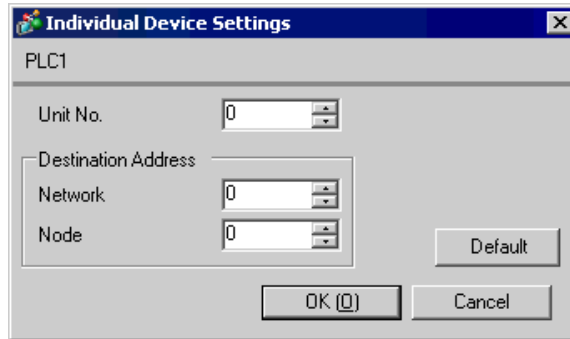
Allowable No. of Device/PLCs 16 Unit(s)

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

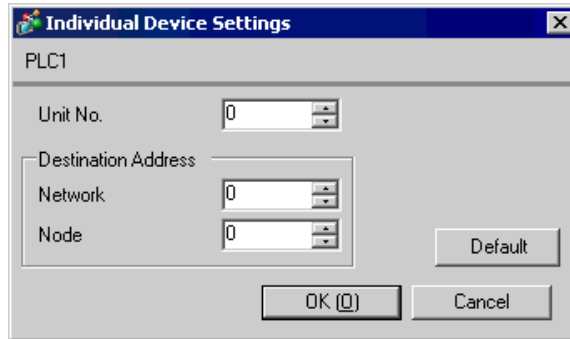
Allowable No. of Device/PLCs 16 Unit(s)

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 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
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. Setting Rotary Switch ^{*2}	Same value as "CPU High Function Unit No."
Unit No.	Option
Source Network Address ^{*3}	Option
Node Address Setting Rotary Switch ^{*4}	Option

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

*2 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.

*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.

3.6 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 [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

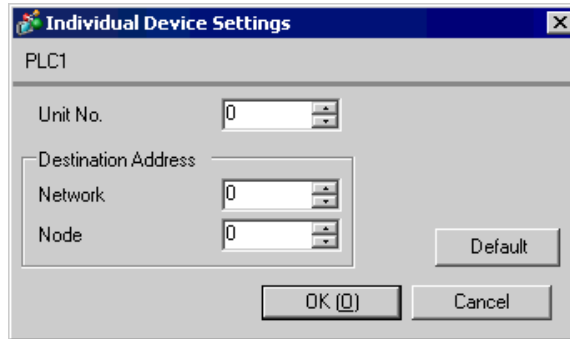
Allowable No. of Device/PLCs 16 Unit(s)

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 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
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. Setting Rotary Switch ^{*4}	Same value as "CPU High Function Unit No."
Unit No.	Option
Source Network Address ^{*5}	Option
Node Address Setting Rotary Switch ^{*6}	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 [Port settings] can be set only when the ladder software you use is a CX-One.

*4 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.

*5 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.

*6 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.

3.7 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.

Device-Specific Settings

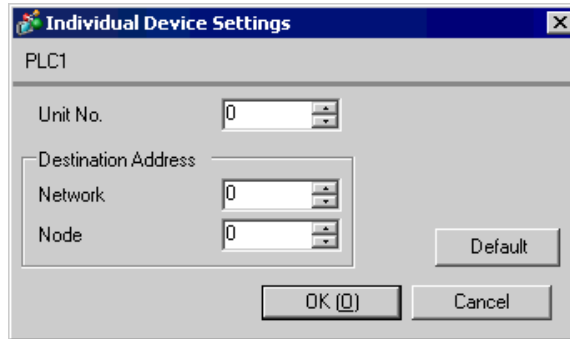
Allowable No. of Device/PLCs 16 Unit(s)

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 [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

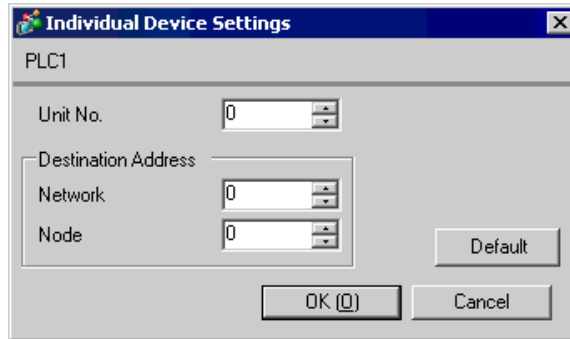
Allowable No. of Device/PLCs 16 Unit(s)

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

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.

Device-Specific Settings

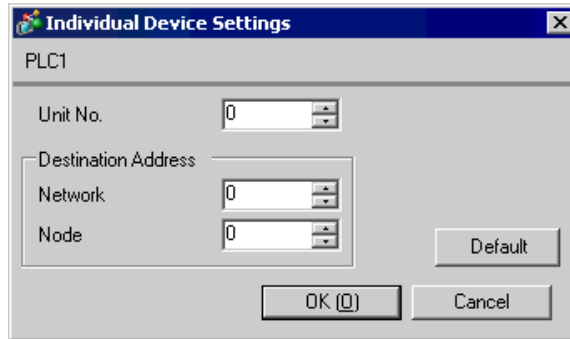
Allowable No. of Device/PLCs 16 Unit(s)

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 [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

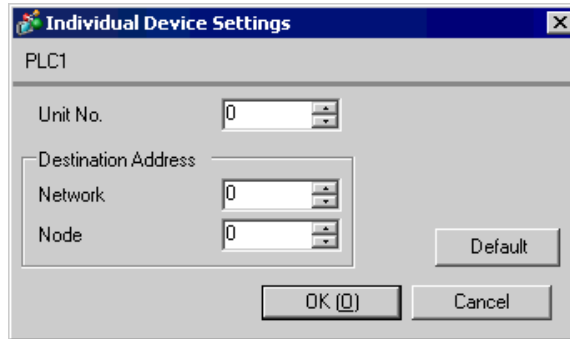
Allowable No. of Device/PLCs 16 Unit(s)

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

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 [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

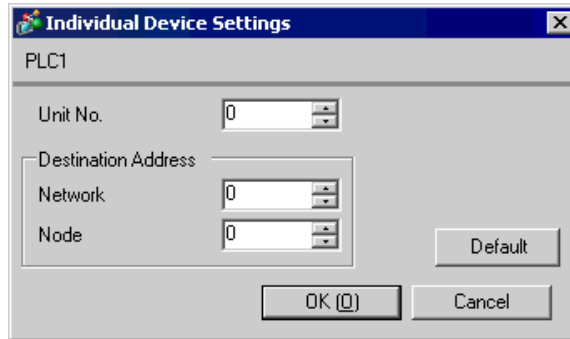
Allowable No. of Device/PLCs 16 Unit(s) 

No.	Device Name	Settings
 1	<input type="text" value="PLC1"/>	<input type="text" value="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.	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.

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 11)

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.

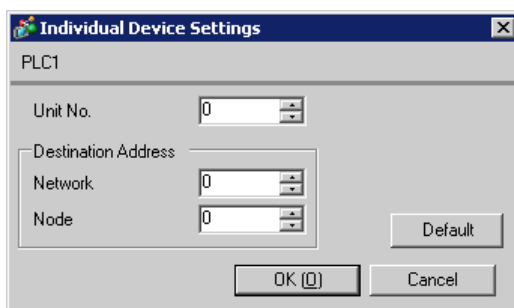
continued to next page

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 Off-line Mode

- NOTE** • Refer to the Maintenance/Troubleshooting manual for information on how to enter off-line mode or about the operation.

Cf. Maintenance/Troubleshooting Manual "2.2 Off-line 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.

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.
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.

■ Device Setting

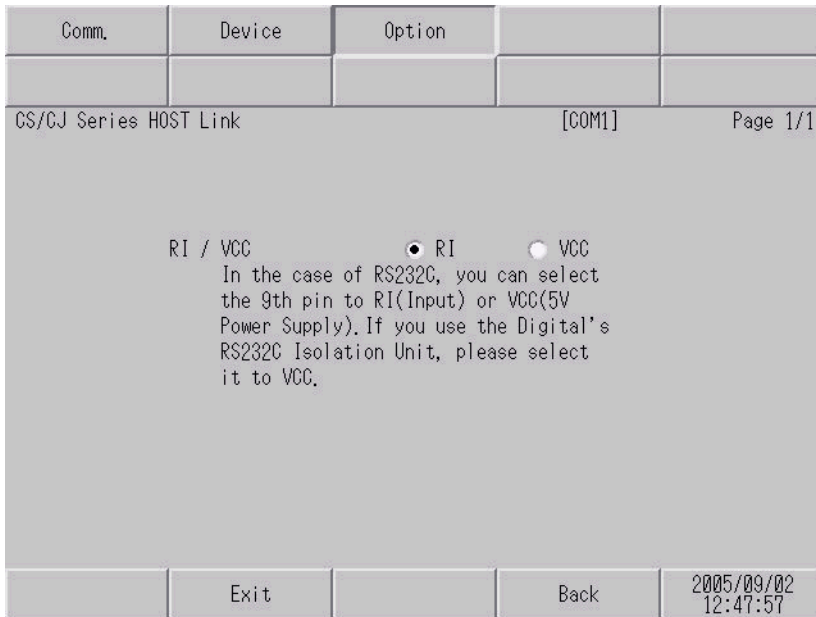
To display the setting screen, touch [Device/PLC Settings] from [Peripheral Settings]. Touch the External Device you want to set from the displayed list, and touch [Device].

Comm.	Device	Option		
CS/CJ Series HOST Link		[COM1]	Page 1/1	
Device/PLC Name [PLC1] ▼				
Unit No.		0 ▼ ▲		
Network Address		0 ▼ ▲		
Node Address		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].



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

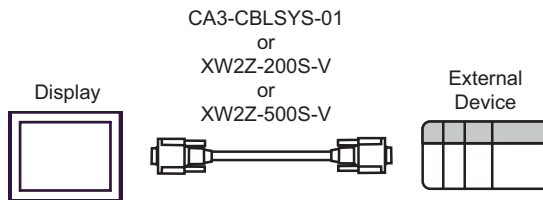
Display (Connection Port)	Cable		Notes
GP (COM1) ST (COM1) IPC*1 PC/AT	A	OMRON SYSMAC link cable by Pro-face CA3-CBLSYS-01 (5m)	
	B	XW2Z-200S-V (2m) or XW2Z-500S-V (5m) by OMRON Corporation	
	C	User-created cable	

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

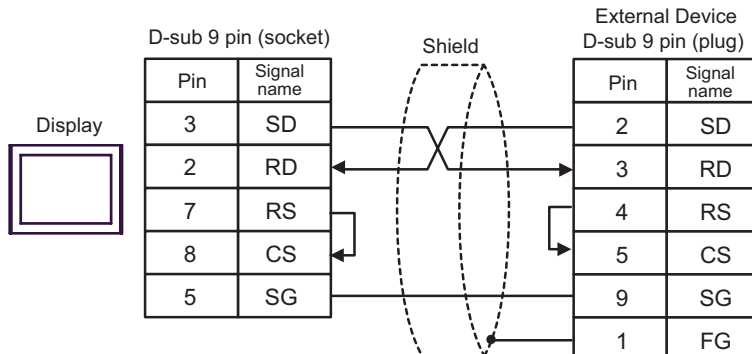
☞ ■ IPC COM Port (page 8)

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



C) When using user-created cable



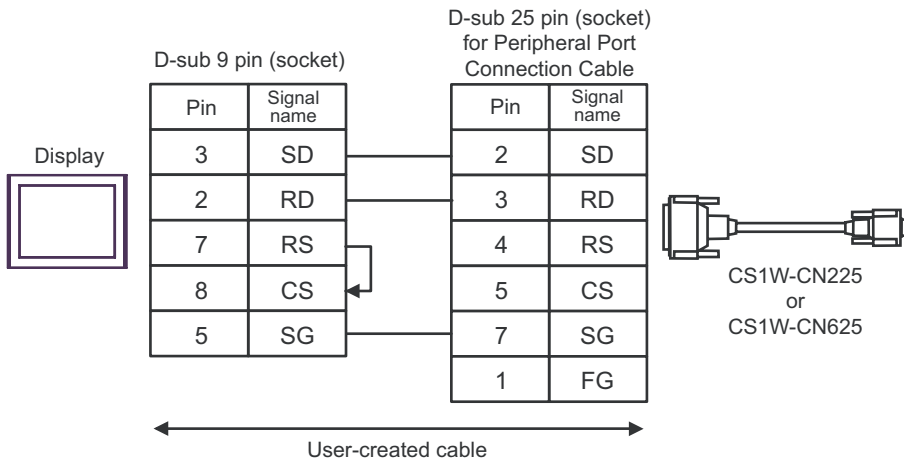
Cable Diagram 2

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

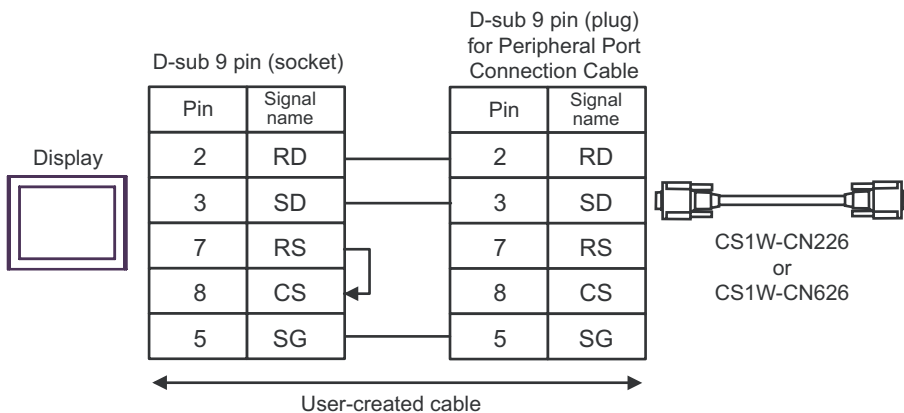
*1 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 8)

A) When using CS1W-CN225 or CS1W-CN625 by OMRON Corporation or user-created cable



B) When using CS1W-CN226 or CS1W-CN626 by OMRON Corporation or user-created 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 + User-created cable	The cable length must be 500m or less.
	B	User-created cable	
GP* ⁴ (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Connector terminal block conversion adapter by Pro-face CA3-ADPTRM-0 + User-created cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + User-created 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.

 ■ IPC COM Port (page 8)

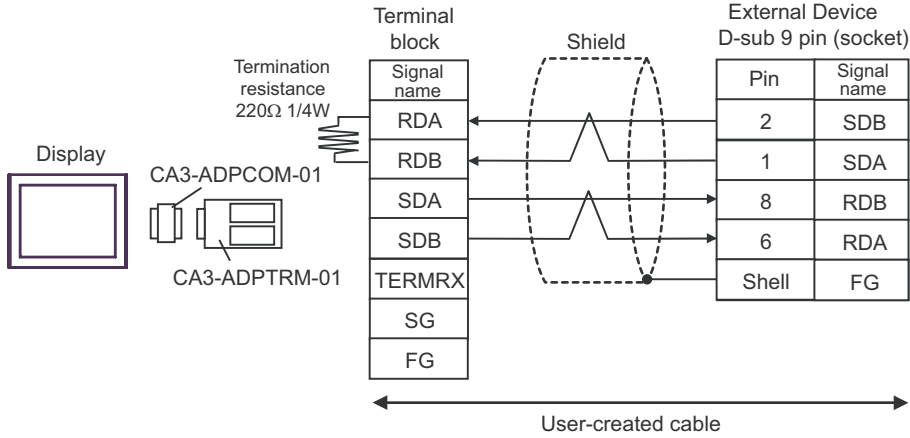
*4 All GP models except GP-3200 series and AGP-3302B

IMPORTANT

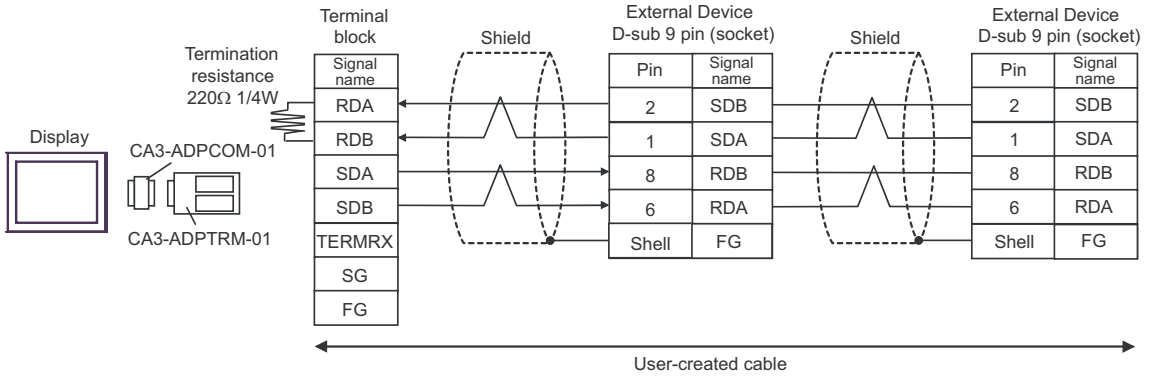
- Please turn ON the termination resistance switch on the PLC.
- Set the 2wire/4wire toggle switch to 4wire.
- Note that pole A and pole B are reversely named for the Display and the External Device.

A) When using the COM port conversion adapter (CA3-ADPCOM-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and user-created cable

- 1:1 connection



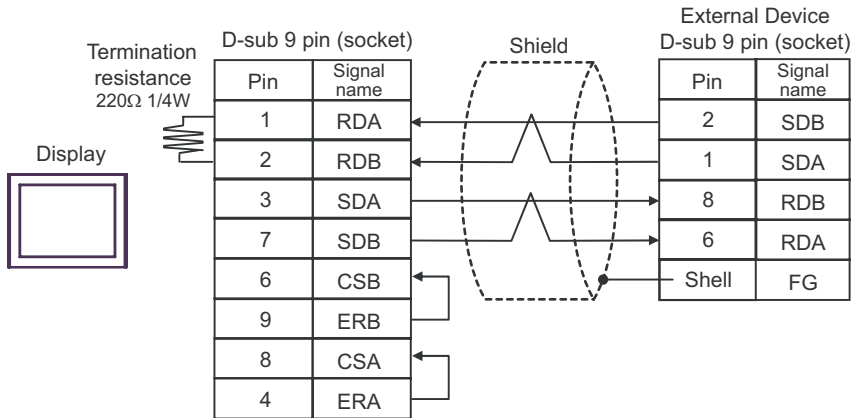
- 1:n connection



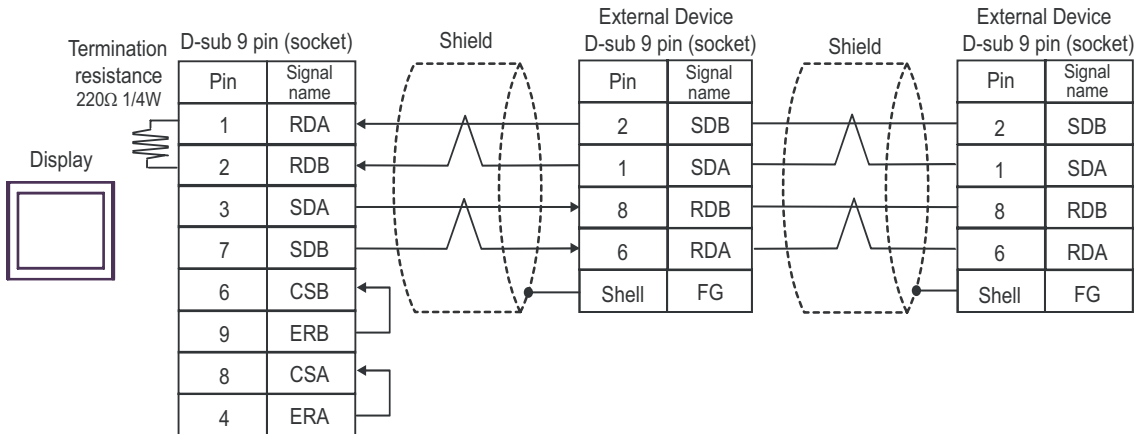
NOTE • When the display unit you use is an IPC, turn ON the DIP switch 6 to insert the termination resistance.

B) When using user-created cable

- 1:1 connection



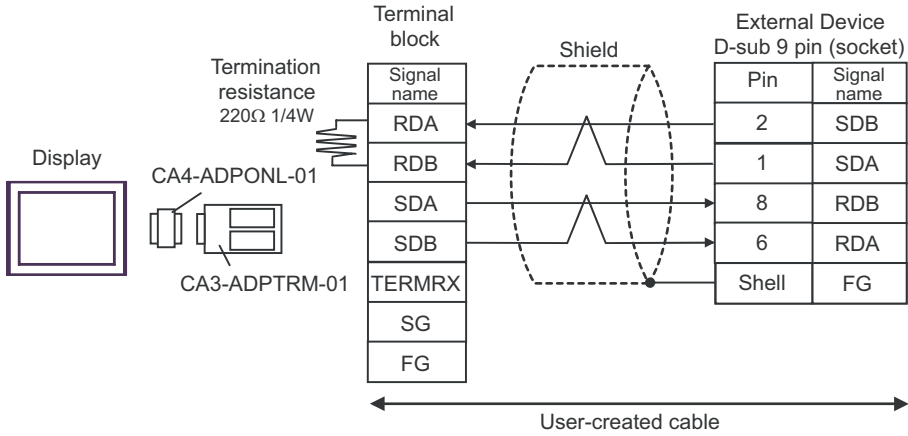
- 1:n connection



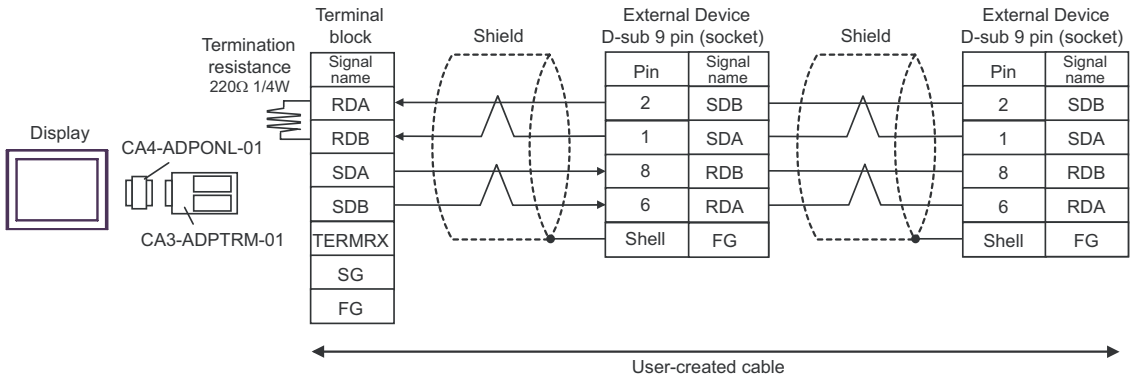
NOTE • When the display unit you use is an IPC, turn ON the DIP switch 6 to insert the termination resistance.

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

- 1:1 connection

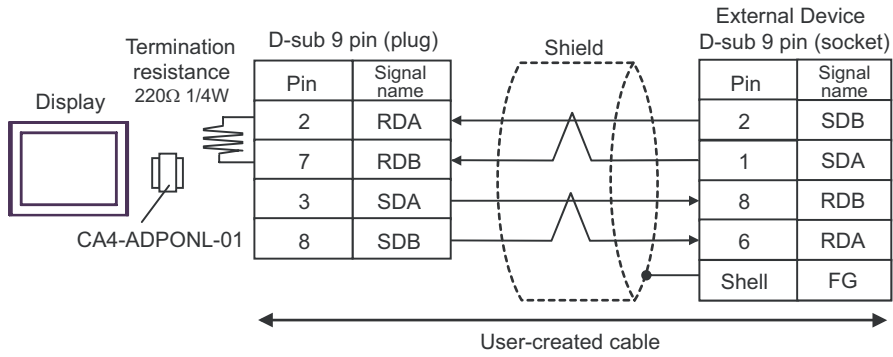


- 1:n connection

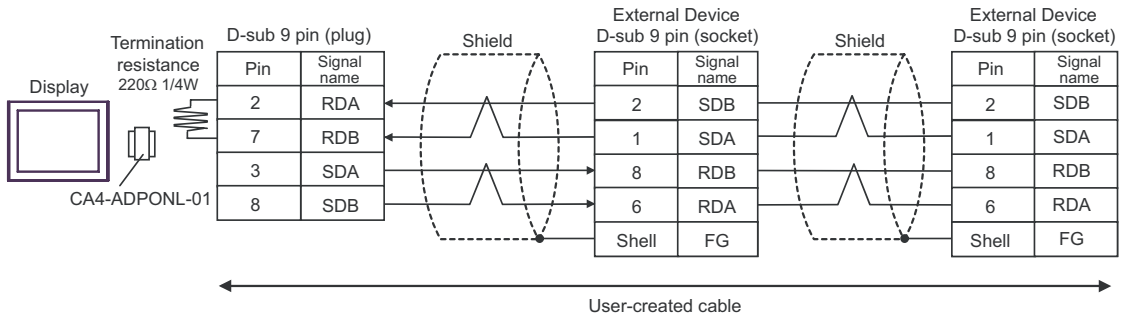


D) When using the online adapter (CA4-ADPONL-01) by Pro-face and user-created cable

- 1:1 connection



- 1:n connection




Cable Diagram 4

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

*1 All GP models except AGP-3302B

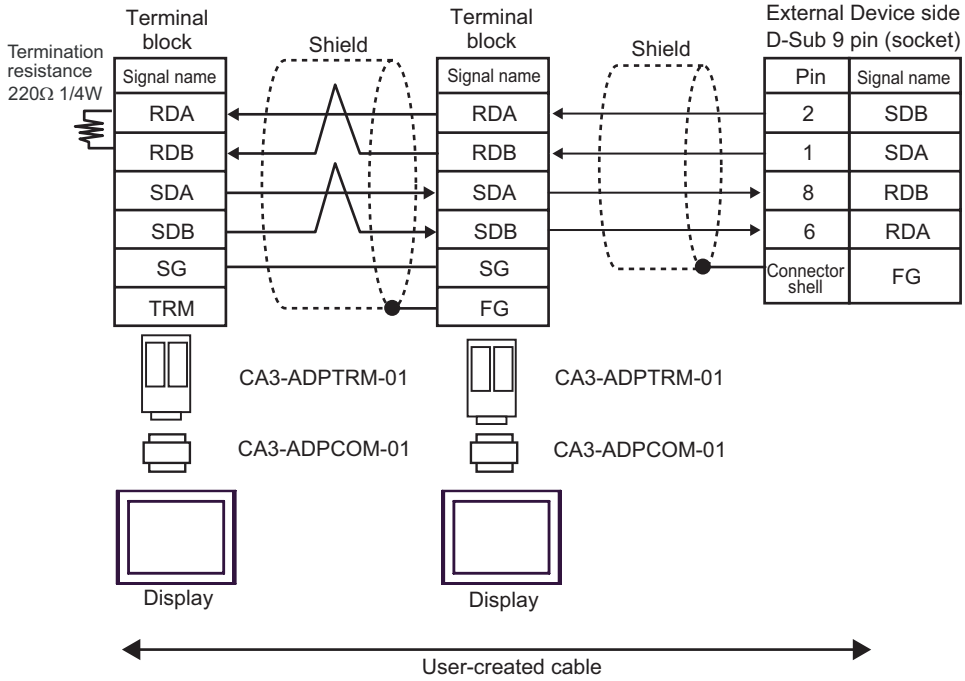
*2 All ST models except AST-3211A

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

 ■ IPC COM Port (page 8)

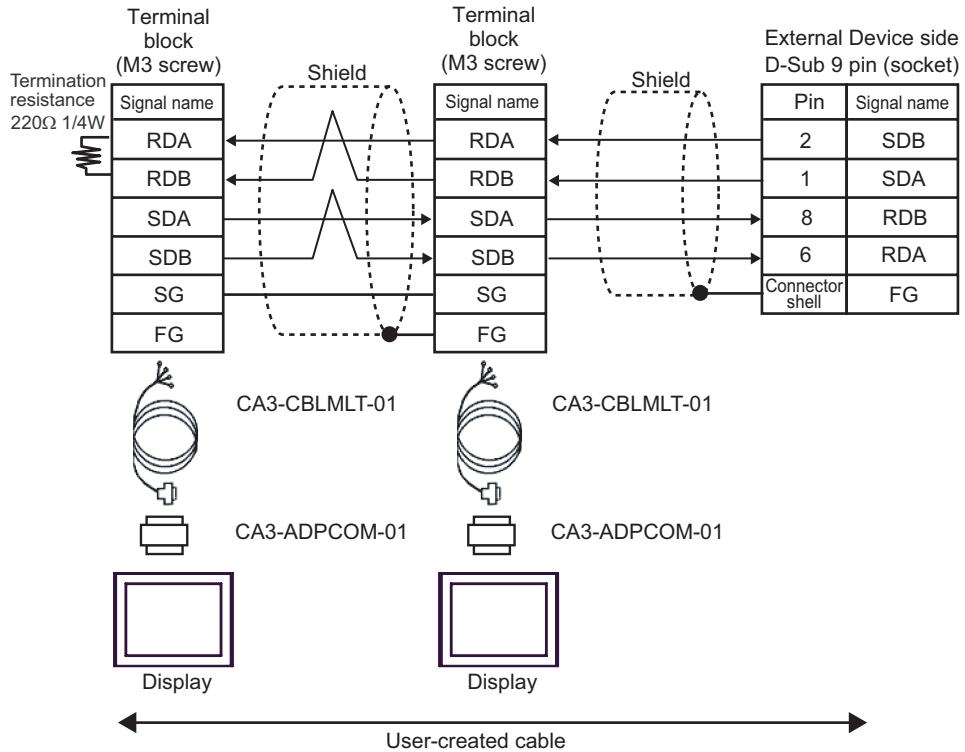
A) When using the COM port conversion adapter (CA3-ADPCOM-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and user-created cable

- n:1 connection



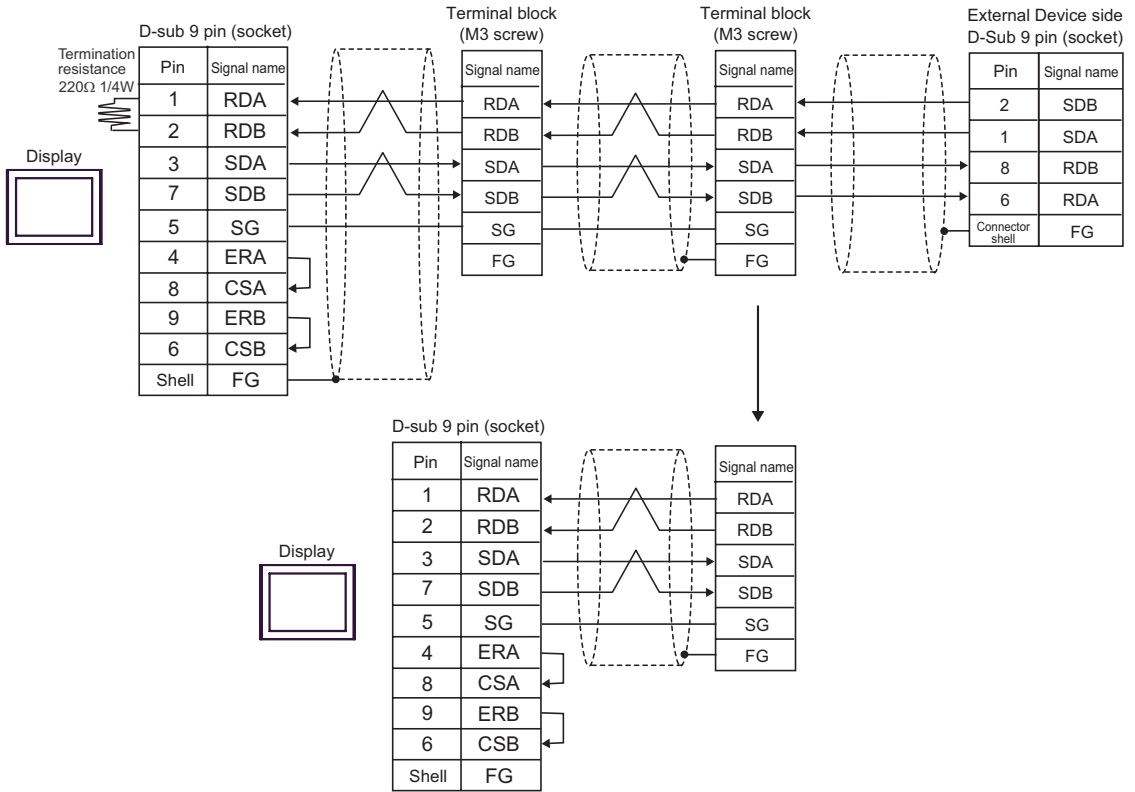
B) When using the COM port conversion adapter (CA3-ADPCOM-01), the multilink cable (CA3-CBLMLT-01) by Pro-face and user-created cable

- n:1 connection



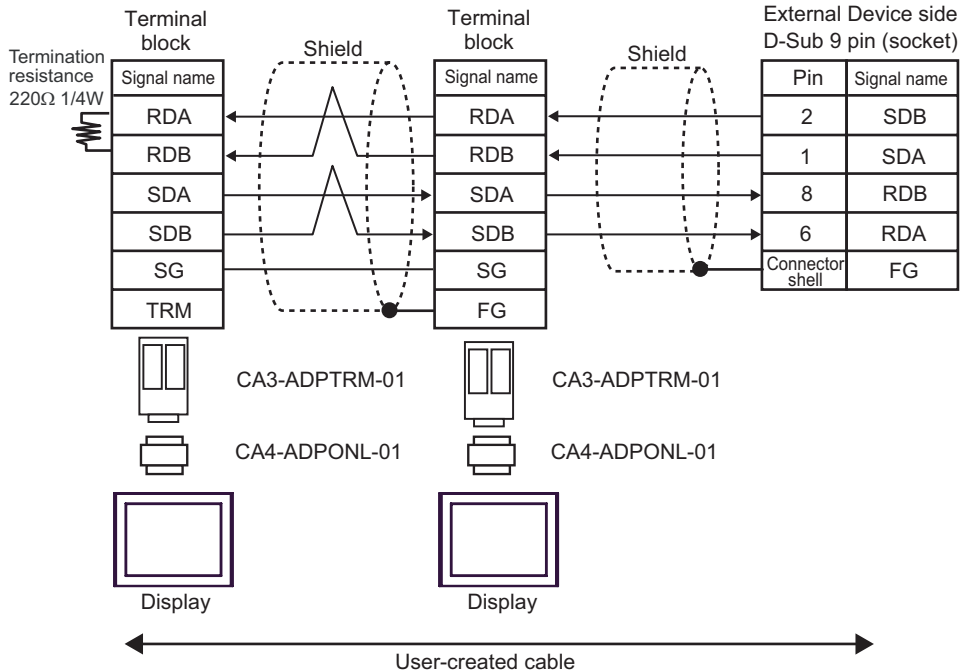
C) When using user-created cable

- n:1 connection



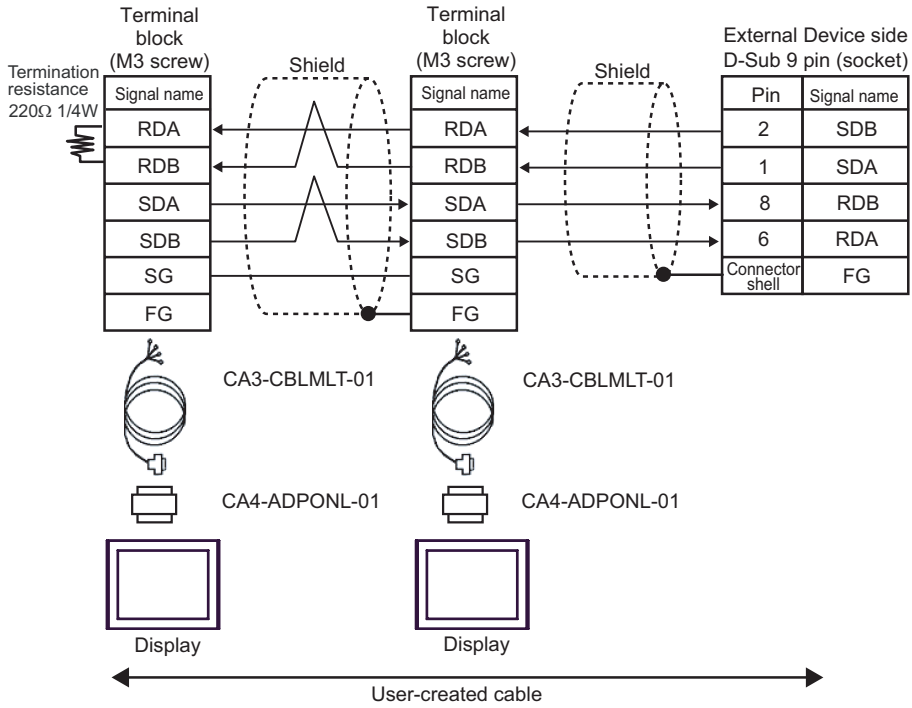
D) When using the online adapter (CA4-ADPONL-01), the connector terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and user-created cable

- n:1 connection



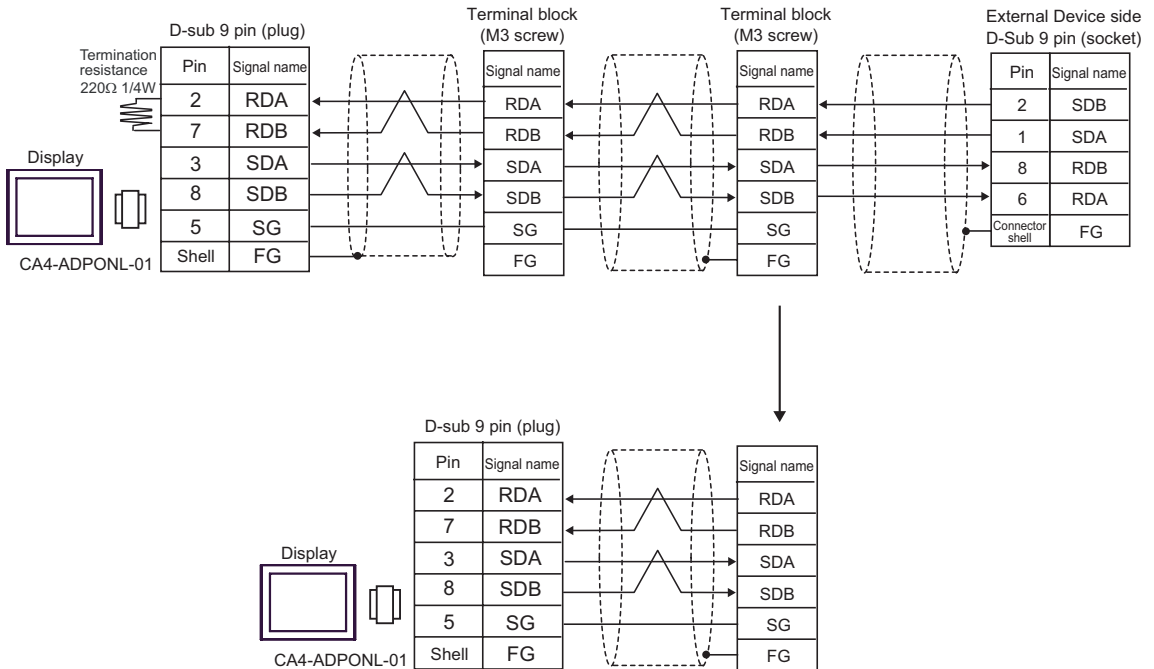
E) When using the online adapter (CA4-ADPONL-01), the multilink cable (CA3-CBLMLT-01) by Pro-face and user-created cable

- n:1 connection



F) When using the online adapter (CA4-ADPONL-01) and user-created cable

- 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		
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		Bit 15 *5*6
Task Flag (Bit)	TKB00-TKB31	-		*2
Task Flag (Status)	TK00.00-TK31.07	TK00-TK30		÷ 2 *2
Index Register	-	IR00-IR15		Bit 31 *7
Data Register	-	DR00-DR15		Bit 15 *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).


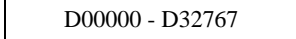




*7 You cannot write during RUN.

NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)"
- 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

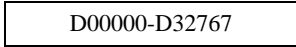



NOTE

- Please refer to the GP-Pro EX Reference Manual for system data area.
Cf. GP-Pro EX Reference Manual "Appendix 1.4 LS Area (Direct Access Method)"
- 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	[L/H]	
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
Index Register	-	IR00-IR15		 *3
Data Register	-	DR00-DR15		 *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 "Appendix 1.4 LS Area (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-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	Displays IP address or device address of External Device where error occurs, or error codes received from External Device. NOTE <ul style="list-style-type: none"> • IP address is displayed such as "IP address(Decimal): MAC address(Hex)". • Device address is displayed such as "Address: Device address". • Received error codes are displayed such as "Decimal[Hex]".

Display Examples of Error Messages

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

NOTE

- Refer to your External Device manual for details on received error codes.
- Refer to "When an error is displayed (Error Code List)" in "Maintenance/Troubleshooting Manual" for details on the error messages common to the driver.

