Hitachi IES Co., Ltd.

H Series Serial Driver

PREFACE

This manual describes how to connect the Display and the External Device.

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 8) |

| 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 9) |

| 4 | Setup Items
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 87) |

| 5 | Cable Diagram
This section shows cables and adapters for connecting the Display and the External Device. |)☞ 5 Cable Diagram (page 92) |

Operation

1 System Configuration

The system configuration in the case when the External Device of Hitach IES Co., Ltd. and the Display are connected is shown.

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
H (Procedure 1)	H-20, H-28, H-40, H-64	Port on the CPU unit	RS232C	Setting Example 1 (page 9)	Cable Diagram 1 (page 94)
	H-200(CPU-02H)[*1] H-250(CPU21-02H)[*1] H-252B(CPU22-02HB)[*1]	Port on the CPU unit	RS232C	Setting Example 1 (page 9)	Cable Diagram 1 (page 94)
	H-252C(CPU22-02HC)[*1] [*2]	Port on the CPU unit	RS232C	Setting Example 1 (page 9)	Cable Diagram 1 (page 94)
	H-300(CPU-03Ha)[*1] H-700(CPU-07Ha)[*1] H-2000(CPU-20Ha)[*1] H-2002(CPU2-20H)[*1]	Port on the CPU unit	RS232C	Setting Example 1 (page 9)	Cable Diagram 1 (page 94)
		COMM-H COMM-2H	RS232C	Setting Example 2 (page 11)	Cable Diagram 1 (page 94)
			RS422/485 (4wire)	Setting Example 3 (page 13)	Cable Diagram 2 (page 96)
	H-302(CPU2-03H)[*1] H-702(CPU2-07H)[*1] H-4010(CPU3-40H)[*1]	Port on the CPU unit	RS232C	Setting Example 1 (page 9)	Cable Diagram 1 (page 94)
		COMM-2H	RS232C	Setting Example 2 (page 11)	Cable Diagram 1 (page 94)
			RS422/485 (4wire)	Setting Example 3 (page 13)	Cable Diagram 2 (page 96)
H (Procedure 2)	H-300(CPU-03Ha) H-700(CPU-07Ha) H-2000(CPU-20Ha) H-302(CPU2-03H) H-702(CPU2-07H) H-2002(CPU2-20H) H-4010(CPU3-40H)	COMM-2H	RS232C	Setting Example 4 (page 15)	Cable Diagram 1 (page 94)
			RS422/485 (4wire)	Setting Example 5 (page 17)	Cable Diagram 2 (page 96)

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
EH-150 (Procedure 1)	EH-150(EH-CPU104) EH-150(EH-CPU104A) EH-150(EH-CPU208) EH-150(EH-CPU208A) EH-150(EH-CPU308) EH-150(EH-CPU316)	Serial port 1 on the CPU unit Serial port 2 on the CPU unit	RS232C	Setting Example 6 (page 19)	Cable Diagram 3 (page 100)
	EH-150(EH-CPU308A) EH-150(EH-CPU316A) EH-150(EH-CPU448) EH-150(EH-CPU448A) EH-150(EH-CPU516) EH-150(EH-CPU548)	Serial port 1 on the CPU unit	RS232C	Setting Example 6 (page 19)	Cable Diagram 3 (page 100)
			RS422/485 (4wire)	Setting Example 7 (page 21)	Cable Diagram 4 (page 102)
			RS422/485 (2wire)	Setting Example 8 (page 23)	Cable Diagram 5 (page 106)
		Serial port 2 on the CPU unit	RS232C	Setting Example 6 (page 19)	Cable Diagram 3 (page 100)
	EH-150(EH-CPU516) EH-150(EH-CPU548)	Port1 on the EH-SIO unit[*3]	RS232C	Setting Example 9 (page 25)	Cable Diagram 3 (page 100)
		Port2 on the EH-SIO unit[*3]	RS232C[*4]	Setting Example 10 (page 27)	Cable Diagram 3 (page 100)
			RS422/485 (4wire)[*4]	Setting Example 11 (page 29)	Cable Diagram 6 (page 113)
			RS422/485 (2wire)[*4]	Setting Example 12 (page 31)	Cable Diagram 7 (page 117)

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
EH-150 (Procedure 2)	EH-150(EH-CPU104A) EH-150(EH-CPU208A)	Serial port 1 on the CPU unit	RS232C	Setting Example 13 (page 33)	Cable Diagram 3 (page 100)
	EH-150(EH-CPU308A) EH-150(EH-CPU316A) EH-150(EH-CPU448) EH-150(EH-CPU448A) EH-150(EH-CPU516) EH-150(EH-CPU548)	Serial port 1 on the CPU unit	RS232C	Setting Example 13 (page 33)	Cable Diagram 3 (page 100)
			RS422/485 (4wire)	Setting Example 14 (page 35)	Cable Diagram 4 (page 102)
			RS422/485 (2wire)	Setting Example 15 (page 37)	Cable Diagram 5 (page 106)
	EH-150(EH-CPU516) EH-150(EH-CPU548)	Port1 on the EH-SIO unit[*3]	RS232C	Setting Example 16 (page 39)	Cable Diagram 3 (page 100)
		Port2 on the EH-SIO unit[*3]	RS232C[*4]	Setting Example 17 (page 41)	Cable Diagram 3 (page 100)
			RS422/485 (4wire)[*4]	Setting Example 18 (page 43)	Cable Diagram 6 (page 113)
			RS422/485 (2wire)[*4]	Setting Example 19 (page 45)	Cable Diagram 7 (page 117)
MICRO-EH (Procedure 1)	MICRO-EH(EH-D10□□□)[*5] MICRO-EH(EH-A14□□□)[*5] MICRO-EH(EH-D14□□□)[*5]	Port 1 on the CPU unit	RS232C	Setting Example 20 (page 47)	Cable Diagram 3 (page 100)
	MICRO-EH(EH-A23□□□)[*5] MICRO-EH(EH-D23□□□)[*5] MICRO-EH(EH-A28□□□)[*5] MICRO-EH(EH-D28□□□)[*5]	Port 1 on the CPU unit	RS232C	Setting Example 20 (page 47)	Cable Diagram 3 (page 100)
		Port 2 on the CPU unit	RS422/485 (4wire)	Setting Example 21 (page 49)	Cable Diagram 8 (page 124)
			RS422/485 (2wire)	Setting Example 22 (page 51)	Cable Diagram 9 (page 128)
	MICRO-EH(EH-A64□□□)[*5] MICRO-EH(EH-D64□□□)[*5]	Port on the CPU unit	RS232C	Setting Example 20 (page 47)	Cable Diagram 3 (page 100)
		EH-OB232[*6]	RS232C	Setting Example 23 (page 53)	Cable Diagram 3 (page 100)
		EH-OB485[*7]	RS422/485 (4wire)	Setting Example 24 (page 55)	Cable Diagram 10 (page 135)
			RS422/485 (2wire)	Setting Example 25 (page 57)	Cable Diagram 11 (page 139)

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
MICRO-EH (Procedure 2)	MICRO-EH(EH-D10□□□)[*5] MICRO-EH(EH-A14□□□)[*5] MICRO-EH(EH-D14□□□)[*5]	Port 1 on the CPU unit	RS232C	Setting Example 26 (page 59)	Cable Diagram 3 (page 100)
	MICRO-EH(EH-A23□□□)[*5] MICRO-EH(EH-D23□□□)[*5] MICRO-EH(EH-A28□□□)[*5] MICRO-EH(EH-D28□□□)[*5]	Port 1 on the CPU unit	RS232C	Setting Example 26 (page 59)	Cable Diagram 3 (page 100)
		Port 2 on the CPU unit	RS422/485 (4wire)	Setting Example 27 (page 61)	Cable Diagram 8 (page 124)
			RS422/485 (2wire)	Setting Example 28 (page 63)	Cable Diagram 9 (page 128)
	MICRO-EH(EH-A64□□□)[*5] MICRO-EH(EH-A64□□□)[*5]	Port on the CPU unit	RS232C	Setting Example 26 (page 59)	Cable Diagram 3 (page 100)
		EH-OB232[*6]	RS232C	Setting Example 29 (page 65)	Cable Diagram 3 (page 100)
		EH-OB485[*7]	RS422/485 (4wire)	Setting Example 30 (page 67)	Cable Diagram 10 (page 135)
			RS422/485 (2wire)	Setting Example 31 (page 69)	Cable Diagram 11 (page 139)
Web controller (Procedure 1 and 2)	EH-WD10DR EH-WA23DR	Serial port on the CPU unit	RS232C	Setting Example 32 (page 71)	Cable Diagram 3 (page 100)

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
EHV (Procedure 1 and 2)	EHV-CPU128	Serial port on the CPU unit	RS232C	Setting Example 33 (page 73)	Cable Diagram 3 (page 100)
			RS422/485 (4wire)	Setting Example 34 (page 75)	Cable Diagram 4 (page 102)
			R422/S485 (2wire)	Setting Example 35 (page 77)	Cable Diagram 5 (page 106)
		Port 1 on the EH-SIO unit[*3]	RS232C	Setting Example 36 (page 79)	Cable Diagram 3 (page 100)
		Port 2 on the EH-SIO unit[*3]	RS232C	Setting Example 37 (page 81)	Cable Diagram 3 (page 100)
			RS422/485 (4wire)	Setting Example 38 (page 83)	Cable Diagram 6 (page 113)
			RS422/485 (2wire)	Setting Example 39 (page 85)	Cable Diagram 7 (page 117)

*1 Connect to the peripheral port on the CPU module.

*2 When the peripheral port 2 on the CPU unit is used, CNCOM-05 conversion cable by Hitachi IES Co., Ltd. needs to be used between the 8 pin connector and D-sub 15 pin connecter.

*3 Version 2.0 or later of the EH-SIO software supports Procedure 1; version 2.1 or later supports Procedure 2. Furthermore, only EH-CPU548(Ver.E402 or later)/EH-CPU516(Ver.E202 or later) can use EH-SIO.

*4 Bit8 is used for interface selection of Port2 (RS232C or RS422/485).

*5 Model No. of the External Device "□" differs depending on the specification of each External Device.

*6 Communication board (RS232C).Can be used in the CPU of which version is Ver.0101 or later.

*7 Communication board (RS422/RS485).Can be used in the CPU of which version is Ver.0100 or later.

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 "Hitachi IES Co., Ltd.".
Driver	Select a model (series) of the External Device to be connected and connection method. Select "H Series SIO". Check the External Device which can be connected in "H Series SIO" in system configuration.)☞ 1 System Configuration (page 3)
Use System Area	Check this option when you synchronize the system data area of the Display and the device (memory) of the External Device. When synchronized, you can use the ladder program of the External Device to switch the display or display the window on the Display. Cf.　GP-Pro EXReference 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 the Display. Cf.　GP-Pro EX Reference Manual "5.14.6[Setting Guide of [System Setting Window], Setting Guide of [Main Unit Settings], 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 Digital Electronics Corp., are shown.

3.1 Setting Example 1

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (Port on the CPU unit: H-4010 only)

Use the switch on the CPU unit for communication settings. After communication settings, turn ON the power of the External Device again to enable the setting. Please refer to the manual of the External Device for more details.

◆ Mode Setting Switch

• DIPSW1

DIP Switch	Settings	Description
SW03	OFF	Port 1 Transmission Speed: 19,200 bps
SW04	OFF	Port 2 Transmission Speed: 19,200 bps

NOTE • Other transmission speed settings are shown below.

DIP Switch	Settings	Description
SW03	ON	Port 1 Transmission Speed: 38,400 bps
SW04	ON	Port 2 Transmission Speed: 38,400 bps

3.2   Setting Example 2

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device(COMM-H, COMM-2H)

Use the switch on the I/F unit for communication settings. After communication settings, turn ON the power of the External Device again to enable the setting. Please refer to the manual of the External Device for more details.

◆ Communication Setting Switch

DIP Switch	Settings	Description
01	OFF	Bit Length: 7 bits
02	ON	
03	ON	Baud Rate Transmission Speed: 19,200bps
04	ON	
05	ON	Parity Enable/Disable: Enable
06	ON	Parity Even/Odd: Even
07	OFF	Stop Bit Length: 1 bit
08	ON	Sum Check: Enable

◆ Station Setting Rotary Switch

Rotary Switch	Settings	Description
x10	0	Station No. of External Device (tenth digit)
x1	0	Station No. of External Device (first digit)

◆ Mode Setting Rotary Switch

Rotary Switch	Settings	Description
MODE	2	Procedure: Procedure 1

3.3   Setting Example 3

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (COMM-H, COMM-2H)

Use the switch on the I/F unit for communication settings. After communication settings, turn ON the power of the External Device again to enable the setting. Please refer to the manual of the External Device for more details.

◆ Communication Setting Switch

DIP Switch	Settings	Description
01	OFF	Bit Length: 7 bits
02	ON	Baud Rate Transmission Speed: 19,200bps
03	ON	
04	ON	
05	ON	Parity Enable/Disable: Enable
06	ON	Parity Even/Odd: Even
07	OFF	Stop Bit Length: 1 bit
08	ON	Sum Check: Enable

◆ Station Setting Rotary Switch

Rotary Switch	Settings	Description
x10	0	Station No. of External Device (tenth digit)
x1	0	Station No. of External Device (first digit)

◆ Mode Setting Rotary Switch

Rotary Switch	Settings	Description
MODE	2	Procedure: Procedure 1

3.4　　Setting Example 4

■ Settings 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　Hitachi IES Co.,Ltd　　　　Driver　H Series SIO　　　Port　COM1

　Text Data Mode　　1　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)

　Procedure　　　　Procedure 2

　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
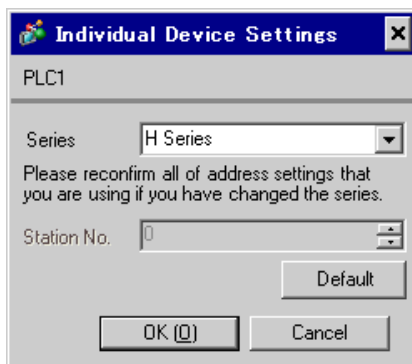
Device-Specific Settings

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

　No.　Device Name　　　　　　Settings
　1　PLC1　　　　　　　　　　Series=H Series

◆ Device Setting

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

■ Settings of External Device (COMM-2H)

Use the switch on the I/F unit for communication settings. After communication settings, turn ON the power of the External Device again to enable the setting. Please refer to the manual of the External Device for more details.

◆ Communication Setting Switch

DIP Switch	Settings	Description
01	OFF	Bit Length: 7 bits
02	ON	
03	ON	Baud Rate Transmission Speed: 19,200bps
04	ON	
05	ON	Parity Enable/Disable: Enable
06	ON	Parity Even/Odd: Even
07	OFF	Stop Bit Length: 1 bit
08	ON	Sum Check: Enable

◆ Station Setting Rotary Switch

Rotary Switch	Settings	Description
x10	0	Station No. of External Device (tenth digit)
x1	0	Station No. of External Device (first digit)

◆ Mode Setting Rotary Switch

Rotary Switch	Settings	Description
MODE	9	Procedure: Procedure 2

3.5 Setting Example 5

■ Settings 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	Hitachi IES Co.,Ltd	Driver	H Series SIO	Port	COM1
Text Data Mode	1	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)	
Procedure	Procedure 2		

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   Series=H Series,Station No.=0

◆ Device Setting

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

■ Settings of External Device (COMM-2H)

Use the switch on the I/F unit for communication settings. After communication settings, turn ON the power of the External Device again to enable the setting. Please refer to the manual of the External Device for more details.

◆ Communication Setting Switch

DIP Switch	Settings	Description
01	OFF	Bit Length: 7 bits
02	ON	
03	ON	Baud Rate Transmission Speed: 19,200bps
04	ON	
05	ON	Parity Enable/Disable: Enable
06	ON	Parity Even/Odd: Even
07	OFF	Stop Bit Length: 1 bit
08	ON	Sum Check: Enable

◆ Station Setting Rotary Switch

Rotary Switch	Settings	Description
x10	0	Station No. of External Device (tenth digit)
x1	0	Station No. of External Device (first digit)

◆ Mode Setting Rotary Switch

Rotary Switch	Settings	Description
MODE	9	Procedure: Procedure 2

3.6　　　Setting Example 6

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (Serial port on the CPU unit)

Use the switch on the CPU unit for communication settings. SIO type will be set to RS232C (Procedure 1) by entering 8000(H) in the address WRF037 with the ladder software (LADDER EDITOR for Windows). After communication settings, turn ON the power of the External Device again to enable the setting. Please refer to the manual of the External Device for more details.

◆ Mode Setting Switch

DIP Switch	Settings	Description
SW03	ON	Port 1 Transmission Speed: 19,200 bps
SW04	OFF	
SW05	ON	Port 1 Operation: Specified port
SW06	OFF	Port 2 Transmission Speed[*1] : 4,800 bps or 19,200 bps

*1   When setting the transmission speed of Port 2 to 19,200 bps or 38,400 bps, set the port change switch to High(ON).

Transmission speed of Port 2 will be set with SW06 and PHL switches.

◆ Port Change Switch

PHL Switch	Settings	Description
PHL Switch	ON	Port 2 Operation

NOTE
- When the change switch is ON, PHL signal becomes High(ON).
- Other transmission speed settings are shown below.

< Port 1 >

SW03	SW04	SW05	Transmission Speed
ON	ON	ON	4,800 bps
OFF	ON	ON	9,600 bps
OFF	OFF	ON	38,400 bps

< Port 2 >

SW06	PHL	Speed Speed
OFF	OFF	4,800 bps
ON	OFF	9,600 bps
ON	ON	38,400 bps

3.7 Setting Example 7

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (Serial port on the CPU unit)

Use the switch on the CPU unit for communication settings. SIO type will be set to RS422/RS485 (Procedure 1) by entering A100(H)[*1] in the address WRF037 with the ladder software (LADDER EDITOR for Windows). After communication settings, turn ON the power of the External Device again to enable the setting. Please refer to the manual of the External Device for more details.

*1   To enable the termination resistance, enter B100(H). In addition, enter the Station No. set on the Display in lower 2 digits of A100 (or B100)

◆ Mode Setting Switch

DIP Switch	Settings	Description
SW03	ON	Port 1 Transmission Speed: 19,200 bps
SW04	OFF	
SW05	ON	Port 1 Operation: Specified port

NOTE   • Other transmission speed settings are shown below.

SW03	SW04	SW05	Speed Speed
ON	ON	ON	4,800 bps
OFF	ON	ON	9,600 bps
OFF	OFF	ON	38,400 bps

3.8 Setting Example 8

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (Serial port on the CPU unit)

Use the switch on the CPU unit for communication settings. SIO type will be set to RS422/RS485 (Procedure 1) by entering A200(H)[*1] in the address WRF037 with the ladder software (LADDER EDITOR for Windows). After communication settings, turn ON the power of the External Device again to enable the setting. Please refer to the manual of the External Device for more details.

*1   To enable the termination resistance, enter B200(H). In addition, enter the Station No. set on the Display in lower 2 digits of A200 (or B200)

◆ Mode Setting Switch

DIP Switch	Settings	Description
SW03	ON	Port 1 Transmission Speed: 19,200 bps
SW04	OFF	
SW05	ON	Port 1 Operation: Specified port

NOTE   • Other transmission speed settings are shown below.

SW03	SW04	SW05	Speed Speed
ON	ON	ON	4,800 bps
OFF	ON	ON	9,600 bps
OFF	OFF	ON	38,400 bps

3.9 Setting Example 9

■ Settings 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 Hitachi IES Co.,Ltd   Driver H Series SIO   Port COM1

  Text Data Mode   1   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)

  Procedure   Procedure 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.   Default

Device-Specific Settings

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

  No. Device Name   Settings
   1   PLC1   Series=H Series

◆ Device Setting

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

■ Settings of External Device (EH-SIO)

Use the switch on the EH-SIO for communication settings. After setting, assign I/O, and turn ON the power of the External Device again to enable the setting.Use the ladder software (LADDER EDITOR for Windows) for the I/O assignment.

Please refer to the manual of the External Device for more details.

◆ Procedure

1. Use the DIP switch on the EH-SIO for communication settings.

DIP Switch	Settings	Description
01	OFF	Speed: 19,200 bps Please refer to the manual of the External Device for more details about other transmission speed settings.
02	ON	
03	ON	
04	ON	
05	OFF	Transmission character configuration settings 　　Data Length: 7 bits 　　Stop Bit: 1 bit 　　Parity: Even
06	ON	
07	OFF	
08	OFF	Always OFF

2. Ladder program is required for initial settings. Please refer to the manual of the External Device for more details.

3.10   Setting Example 10

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (EH-SIO)

Use the switch on the EH-SIO for communication settings. After setting, assign I/O, and turn ON the power of the External Device again to enable the setting.Use the ladder software (LADDER EDITOR for Windows) for the I/O assignment.

Please refer to the manual of the External Device for more details.

◆ Procedure

1. Use the DIP switch on the EH-SIO for communication settings.

Communication Setting Switch 2 (for Port 2)

DIP Switch	Settings	Description
01	OFF	Speed: 19,200 bps Please refer to the manual of the External Device for more details about other transmission speed settings.
02	ON	
03	ON	
04	ON	

05	OFF	Transmission character configuration settings
		    Data Length: 7 bits
		    Stop Bit: 1 bit
		    Parity: Even

06	ON	
07	OFF	
08	OFF	Interface Type: RS232C

2. Ladder program is required for initial settings. Please refer to the manual of the External Device for more details.

3.11 Setting Example 11

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (EH-SIO)

Use the switch on the EH-SIO for communication settings. After setting, assign I/O, and turn ON the power of the External Device again to enable the setting.Use the ladder software (LADDER EDITOR for Windows) for the I/O assignment.

Please refer to the manual of the External Device for more details.

◆ Procedure

1. Use the DIP switch on the EH-SIO for communication settings.

Communication Setting Switch 2 (for Port 2)

DIP Switch	Settings	Description
01	OFF	Speed: 19,200 bps Please refer to the manual of the External Device for more details about other transmission speed settings.
02	ON	
03	ON	
04	ON	
05	OFF	Transmission character configuration settings Data Length: 7 bits Stop Bit: 1 bit Parity: Even
06	ON	
07	OFF	
08	ON	Interface Type: RS422/RS485

2. Ladder program is required for initial settings. Please refer to the manual of the External Device for more details.

3.12 Setting Example 12

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (EH-SIO)

Use the switch on the EH-SIO for communication settings. After setting, assign I/O, and turn ON the power of the External Device again to enable the setting.Use the ladder software (LADDER EDITOR for Windows) for the I/O assignment.

Please refer to the manual of the External Device for more details.

◆ Procedure

1. Use the DIP switch on the EH-SIO for communication settings.

Communication Setting Switch 2 (for Port 2)

DIP Switch	Settings	Description
01	OFF	Speed: 19,200 bps
02	ON	Please refer to the manual of the External Device for more details about other
03	ON	transmission speed settings.
04	ON	
05	OFF	Transmission character configuration settings
06	ON	Data Length: 7 bits
07	OFF	Stop Bit: 1 bit Parity: Even
08	ON	Interface Type: RS422/RS485

2. Ladder program is required for initial settings. Please refer to the manual of the External Device for more details.

3.13   Setting Example 13

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (Serial port on the CPU unit)

Use the switch on the CPU unit for communication settings. SIO type will be set to RS232C (Procedure 2) by entering C000(H) in the address WRF037 with the ladder software (LADDER EDITOR for Windows). After communication settings, turn ON the power of the External Device again to enable the setting. Please refer to the manual of the External Device for more details.

◆ Mode Setting Switch

DIP Switch	Settings	Description
SW03	ON	Port 1 Transmission Speed: 19,200 bps
SW04	OFF	
SW05	ON	Port 1 Operation: Specified port

NOTE • Other transmission speed settings are shown below.

SW03	SW04	SW05	Speed Speed
ON	ON	ON	4,800 bps
OFF	ON	ON	9,600 bps
OFF	OFF	ON	38,400 bps

3.14 Setting Example 14

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

Individual Device Settings
PLC1
Series   H Series
Please reconfirm all of address settings that you are using if you have changed the series.
Station No.   0
Default
OK (O)   Cancel

■ Settings of External Device (Serial port on the CPU unit)

Use the switch on the CPU unit for communication settings. SIO type will be set to RS422/RS485 (Procedure 2) by entering E100(H)[*1] in the address WRF037 with the ladder software (LADDER EDITOR for Windows). After communication settings, turn ON the power of the External Device again to enable the setting. Please refer to the manual of the External Device for more details.

*1   To enable the termination resistance, enter F100(H). In addition, enter the Station No. set on the Display in lower 2 digits of E100 (or F100)

◆ Mode Setting Switch

DIP Switch	Settings	Description
SW03	ON	Port 1 Transmission Speed: 19,200 bps
SW04	OFF	
SW05	ON	Port 1 Operation: Specified port

NOTE   • Other transmission speed settings are shown below.

SW03	SW04	SW05	Speed Speed
ON	ON	ON	4,800 bps
OFF	ON	ON	9,600 bps
OFF	OFF	ON	38,400 bps

3.15   Setting Example 15

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (Serial port on the CPU unit)

Use the switch on the CPU unit for communication settings. SIO type will be set to RS422/RS485 (Procedure 2) by entering E200(H)[*1] in the address WRF037 with the ladder software (LADDER EDITOR for Windows). After communication settings, turn ON the power of the External Device again to enable the setting. Please refer to the manual of the External Device for more details.

*1   To enable the termination resistance, enter F200(H). In addition, enter the Station No. set on the Display in lower 2 digits of E200 (or F200)

◆ Mode Setting Switch

DIP Switch	Settings	Description
SW03	ON	Port 1 Transmission Speed: 19,200 bps
SW04	OFF	
SW05	ON	Port 1 Operation: Specified port

NOTE • Other transmission speed settings are shown below.

SW03	SW04	SW05	Speed Speed
ON	ON	ON	4,800 bps
OFF	ON	ON	9,600 bps
OFF	OFF	ON	38,400 bps

3.16   Setting Example 16

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (EH-SIO)

Use the switch on the EH-SIO for communication settings. After setting, assign I/O, and turn ON the power of the External Device again to enable the setting.Use the ladder software (LADDER EDITOR for Windows) for the I/O assignment.

Please refer to the manual of the External Device for more details.

◆ Procedure

1. Use the DIP switch on the EH-SIO for communication settings.

DIP Switch	Settings	Description
01	OFF	Speed: 19,200 bps Please refer to the manual of the External Device for more details about other transmission speed settings.
02	ON	
03	ON	
04	ON	

05	OFF	Transmission character configuration settings
		    Data Length: 7 bits
		    Stop Bit: 1 bit
		    Parity: Even

06	ON	
07	OFF	
08	OFF	Always OFF

2. Ladder program is required for initial settings. Please refer to the manual of the External Device for more details.

3.17   Setting Example 17

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (EH-SIO)

Use the switch on the EH-SIO for communication settings. After setting, assign I/O, and turn ON the power of the External Device again to enable the setting.Use the ladder software (LADDER EDITOR for Windows) for the I/O assignment.

Please refer to the manual of the External Device for more details.

◆ Procedure

1. Use the DIP switch on the EH-SIO for communication settings.

Communication Setting Switch 2 (for Port 2)

DIP Switch	Settings	Description
01	OFF	Speed: 19,200 bps Please refer to the manual of the External Device for more details about other transmission speed settings.
02	ON	
03	ON	
04	ON	

05	OFF	Transmission character configuration settings
		    Data Length: 7 bits
		    Stop Bit: 1 bit
		    Parity: Even

06	ON	
07	OFF	
08	OFF	Interface Type: RS232C

2. Ladder program is required for initial settings. Please refer to the manual of the External Device for more details.

3.18 Setting Example 18

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (EH-SIO)

Use the switch on the EH-SIO for communication settings. After setting, assign I/O, and turn ON the power of the External Device again to enable the setting. Use the ladder software (LADDER EDITOR for Windows) for the I/O assignment.

Please refer to the manual of the External Device for more details.

◆ Procedure

1. Use the DIP switch on the EH-SIO for communication settings.

Communication Setting Switch 2 (for Port 2)

DIP Switch	Settings	Description
01	OFF	Speed: 19,200 bps Please refer to the manual of the External Device for more details about other transmission speed settings.
02	ON	
03	ON	
04	ON	

05	OFF	Transmission character configuration settings
		    Data Length: 7 bits
		    Stop Bit: 1 bit
		    Parity: Even

06	ON	
07	OFF	
08	ON	Interface Type: RS422/RS485

2. Ladder program is required for initial settings. Please refer to the manual of the External Device for more details.

3.19   Setting Example 19

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (EH-SIO)

Use the switch on the EH-SIO for communication settings. After setting, assign I/O, and turn ON the power of the External Device again to enable the setting.Use the ladder software (LADDER EDITOR for Windows) for the I/O assignment.

Please refer to the manual of the External Device for more details.

◆ Procedure

1. Use the DIP switch on the EH-SIO for communication settings.

Communication Setting Switch 2 (for Port 2)

DIP Switch	Settings	Description
01	OFF	Speed: 19,200 bps Please refer to the manual of the External Device for more details about other transmission speed settings.
02	ON	
03	ON	
04	ON	
05	OFF	Transmission character configuration settings Data Length: 7 bits Stop Bit: 1 bit Parity: Even
06	ON	
07	OFF	
08	ON	Interface Type: RS422/RS485

2. Ladder program is required for initial settings. Please refer to the manual of the External Device for more details.

3.20   Setting Example 20

■ Settings 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 Hitachi IES Co.,Ltd   Driver H Series SIO   Port COM1

Text Data Mode   1   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)

Procedure   Procedure 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.   Default

Device-Specific Settings

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

No. Device Name   Settings

1   PLC1   Series=H Series

◆ Device Setting

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

■ Settings of External Device (Port on the CPU unit)

Use the ladder software (LADDER EDITOR for Windows) for communication settings. Please refer to the manual of the External Device for more details.

◆ Procedure

1. Use the DIP switch inside the front cover of the External Device to enable the communication with the ladder software.

Set as the following table.

DIP Switch	Settings	Description
SW01	ON	Transmission Speed: 19,200 bps Please refer to the manual of the External Device for more details about other transmission speed settings.
SW02	OFF	
SW03	OFF	
SW04	OFF	

2. Set 0000(H) in I/O No.WRF01A and turn I/O No.R7F6 ON to write the settings in the FLASH memory in the External Device.

• WRF01A

Limit Bit	Settings	Description
15	0	Procedure 1

• R7F6

Limit Bit	Settings	Description
-	1	Writing in FLASH memory

3. Turn ON the power of the External Device again.

3.21　　　Setting Example 21

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

Individual Device Settings

PLC1

Series   H Series

Please reconfirm all of address settings that you are using if you have changed the series.

Station No.   0

Default

OK (O)   Cancel

■ Settings of External Device (Port on the CPU unit)

Use the ladder software (LADDER EDITOR for Windows) for communication settings. Please refer to the manual of the External Device for more details.

◆ Procedure

1. Set the following communication settings in I/O No.WRF03D and turn I/O No.R7F6 ON to write the settings in the FLASH memory in the External Device.

   • WRF03D

Limit Bit	Settings	Description
15	1[*1]	Setting Change Request
14	0	Procedure 1
13	1	Station No.: Enable
11 to 8	0010(H)	Transmission speed: 19,200bps Please refer to the manual of the External Device for more details about other transmission speed settings.
7 to 0	0	Station No.[*2]

*1 For communication settings, set "1". It will be changed to "0" when turning the power of the External Device again.

*2 Set the Station No. with BCD 2 digits. Bit position of 7 to 4 corresponds to the digit of 10, and of 3 to 0 corresponds to the digit of 1.

   • R7F6

Limit Bit	Settings	Description
-	1	Writing in FLASH memory

2. Turn ON the power of the External Device again.

3.22 Setting Example 22

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (Port on the CPU unit)

Use the ladder software (LADDER EDITOR for Windows) for communication settings. Please refer to the manual of the External Device for more details.

◆ Procedure

1. Set the following communication settings in I/O No.WRF03D and turn I/O No.R7F6 ON to write the settings in the FLASH memory in the External Device.

   • WRF03D

Limit Bit	Settings	Description
15	1[*1]	Setting Change Request
14	0	Procedure 1
13	1	Station No.: Enable
11 to 8	0010(H)	Transmission speed: 19,200bps Please refer to the manual of the External Device for more details about other transmission speed settings.
7 to 0	0	Station No.[*2]

*1   For communication settings, set "1". It will be changed to "0" when turning the power of the External Device again.

*2   Set the Station No. with BCD 2 digits. Bit position of 7 to 4 corresponds to the digit of 10, and of 3 to 0 corresponds to the digit of 1.

   • R7F6

Limit Bit	Settings	Description
-	1	Writing in FLASH memory

2. Turn ON the power of the External Device again.

3.23　Setting Example 23

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (EH-OB232)

Use the ladder software (LADDER EDITOR for Windows) for communication settings. Please refer to the manual of the External Device for more details.

◆ Procedure

1. Set the following communication settings in I/O No.WRF03D and turn I/O No.R7F6 ON to write the settings in the FLASH memory in the External Device.

• WRF03D

Limit Bit	Settings	Description
15	1[*1]	Setting Change Request
14	0	Procedure 1
13	0	Station No.: Disable
11 to 8	0010(H)	Transmission speed: 19,200bps Please refer to the manual of the External Device for more details about other transmission speed settings.

*1 For communication settings, set "1". It will be changed to "0" when turning the power of the External Device again.

• R7F6

Limit Bit	Settings	Description
-	1	Writing in FLASH memory

2. Turn ON the power of the External Device again.

3.24 Setting Example 24

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (EH-OB485)

Use the ladder software (LADDER EDITOR for Windows) for communication settings. Please refer to the manual of the External Device for more details.

◆ Procedure

1. Set the following communication settings in I/O No.WRF03D and turn I/O No.R7F6 ON to write the settings in the FLASH memory in the External Device.

• WRF03D

Limit Bit	Settings	Description
15	1[*1]	Setting Change Request
14	0	Procedure 1
13	1	Station No.: Enable
11 to 8	0010(H)	Transmission speed: 19,200bps Please refer to the manual of the External Device for more details about other transmission speed settings.
7 to 0	0	Station No.[*2]

*1 For communication settings, set "1". It will be changed to "0" when turning the power of the External Device again.

*2 Set the Station No. with BCD 2 digits. Bit position of 7 to 4 corresponds to the digit of 10, and of 3 to 0 corresponds to the digit of 1.

• R7F6

Limit Bit	Settings	Description
-	1	Writing in FLASH memory

2. Turn ON the power of the External Device again.

3.25   Setting Example 25

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (EH-OB485)

Use the ladder software (LADDER EDITOR for Windows) for communication settings. Please refer to the manual of the External Device for more details.

◆ Procedure

1. Set the following communication settings in I/O No.WRF03D and turn I/O No.R7F6 ON to write the settings in the FLASH memory in the External Device.

   • WRF03D

Limit Bit	Settings	Description
15	1[*1]	Setting Change Request
14	0	Procedure 1
13	1	Station No.: Enable
11 to 8	0010(H)	Transmission speed: 19,200bps Please refer to the manual of the External Device for more details about other transmission speed settings.
7 to 0	0	Station No.[*2]

   *1   For communication settings, set "1". It will be changed to "0" when turning the power of the External Device again.

   *2   Set the Station No. with BCD 2 digits. Bit position of 7 to 4 corresponds to the digit of 10, and of 3 to 0 corresponds to the digit of 1.

   • R7F6

Limit Bit	Settings	Description
-	1	Writing in FLASH memory

2. Turn ON the power of the External Device again.

3.26　　Setting Example 26

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (Port on the CPU unit)

Use the ladder software (LADDER EDITOR for Windows) for communication settings. Please refer to the manual of the External Device for more details.

◆ Procedure

1. Use the DIP switch inside the front cover of the External Device to enable the communication with the ladder software.

   Set as the following table.

DIP Switch	Settings	Description
SW01	ON	Speed: 19,200 bps Please refer to the manual of the External Device for more details about other transmission speed settings.
SW02	OFF	
SW03	OFF	
SW04	OFF	

2. Set 8000(H) in I/O No.WRF01A and turn I/O No.R7F6 ON to write the settings in the FLASH memory in the External Device.

   • WRF01A

Limit Bit	Settings	Description
15	1	Procedure 2

   • R7F6

Limit Bit	Settings	Description
-	1	Writing in FLASH memory

3. Turn ON the power of the External Device again.

3.27　　Setting Example 27

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (Port on the CPU unit)

Use the ladder software (LADDER EDITOR for Windows) for communication settings. Please refer to the manual of the External Device for more details.

◆ Procedure

1. Set the following communication settings in I/O No.WRF03D and turn I/O No.R7F6 ON to write the settings in the FLASH memory in the External Device.

   • WRF03D

Limit Bit	Settings	Description
15	1[*1]	Setting Change Request
14	1	Procedure 2
13	1	Station No.: Enable
11 to 8	0010(H)	Transmission speed: 19,200bps Please refer to the manual of the External Device for more details about other transmission speed settings.
7 to 0	0	Station No.[*2]

   *1   For communication settings, set "1". It will be changed to "0" when turning the power of the External Device again.

   *2   Set the Station No. with BCD 2 digits. Bit position of 7 to 4 corresponds to the digit of 10, and of 3 to 0 corresponds to the digit of 1.

   • R7F6

Limit Bit	Settings	Description
-	1	Writing in FLASH memory

2. Turn ON the power of the External Device again.

3.28   Setting Example 28

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (Port on the CPU unit)

Use the ladder software (LADDER EDITOR for Windows) for communication settings. Please refer to the manual of the External Device for more details.

◆ Procedure

1. Set the following communication settings in I/O No.WRF03D and turn I/O No.R7F6 ON to write the settings in the FLASH memory in the External Device.

• WRF03D

Limit Bit	Settings	Description
15	1[*1]	Setting Change Request
14	1	Procedure 2
13	1	Station No.: Enable
11 to 8	0010(H)	Transmission speed: 19,200bps Please refer to the manual of the External Device for more details about other transmission speed settings.
7 to 0	0	Station No.[*2]

*1 For communication settings, set "1". It will be changed to "0" when turning the power of the External Device again.

*2 Set the Station No. with BCD 2 digits. Bit position of 7 to 4 corresponds to the digit of 10, and of 3 to 0 corresponds to the digit of 1.

• R7F6

Limit Bit	Settings	Description
-	1	Writing in FLASH memory

2. Turn ON the power of the External Device again.

3.29   Setting Example 29

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (EH-OB232)

Use the ladder software (LADDER EDITOR for Windows) for communication settings. Please refer to the manual of the External Device for more details.

◆ Procedure

1. Set the following communication settings in I/O No.WRF03D and turn I/O No.R7F6 ON to write the settings in the FLASH memory in the External Device.

• WRF03D

Limit Bit	Settings	Description
15	1[*1]	Setting Change Request
14	1	Procedure 2
13	0	Station No.: Disable
11 to 8	0010(H)	Transmission speed: 19,200bps Please refer to the manual of the External Device for more details about other transmission speed settings.

*1 For communication settings, set "1". It will be changed to "0" when turning the power of the External Device again.

• R7F6

Limit Bit	Settings	Description
-	1	Writing in FLASH memory

2. Turn ON the power of the External Device again.

3.30   Setting Example 30

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (EH-OB485)

Use the ladder software (LADDER EDITOR for Windows) for communication settings. Please refer to the manual of the External Device for more details.

◆ Procedure

1. Set the following communication settings in I/O No.WRF03D and turn I/O No.R7F6 ON to write the settings in the FLASH memory in the External Device.

• WRF03D

Limit Bit	Settings	Description
15	1[*1]	Setting Change Request
14	1	Procedure 2
13	1	Station No.: Enable
11 to 8	0010(H)	Transmission speed: 19,200bps Please refer to the manual of the External Device for more details about other transmission speed settings.
7 to 0	0	Station No.[*2]

*1   For communication settings, set "1". It will be changed to "0" when turning the power of the External Device again.

*2   Set the Station No. with BCD 2 digits. Bit position of 7 to 4 corresponds to the digit of 10, and of 3 to 0 corresponds to the digit of 1.

• R7F6

Limit Bit	Settings	Description
-	1	Writing in FLASH memory

2. Turn ON the power of the External Device again.

3.31   Setting Example 31

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (EH-OB485)

Use the ladder software (LADDER EDITOR for Windows) for communication settings. Please refer to the manual of the External Device for more details.

◆ Procedure

1. Set the following communication settings in I/O No.WRF03D and turn I/O No.R7F6 ON to write the settings in the FLASH memory in the External Device.

• WRF03D

Limit Bit	Settings	Description
15	1[*1]	Setting Change Request
14	1	Procedure 2
13	1	Station No.: Enable
11 to 8	0010(H)	Transmission speed: 19,200bps Please refer to the manual of the External Device for more details about other transmission speed settings.
7 to 0	0	Station No.[*2]

*1 For communication settings, set "1". It will be changed to "0" when turning the power of the External Device again.

*2 Set the Station No. with BCD 2 digits. Bit position of 7 to 4 corresponds to the digit of 10, and of 3 to 0 corresponds to the digit of 1.

• R7F6

Limit Bit	Settings	Description
-	1	Writing in FLASH memory

2. Turn ON the power of the External Device again.

3.32   Setting Example 32

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (Web controller)

Use the Web Browser to access the External Device for communication setting. Please refer to the manual of the External Device for more details.

◆ Procedure

Please refer to the manual of the Web controller for more details.

1. If you set the operation mode setting switch of the External Device as follows, the temporary IP address of the Ethernet port will be set to 192.168.0.1.

   <Operation Mode Setting Switch>

   • EH-WD10DR: Set the rotary switch to "2"

   • EH-WA23DR: Set only the DIP switch4 to ON

2. Use the LAN cable to connect the Ethernet port of PC to the Ethernet port of the Web controller.(connect via HUB or with the cross cable directly.)

3. Enter "http://192.168.0.1/mwconfig.cgi" in the address input box of the Web Browser to access the External Device.

   To access, you need to set the upper 3 bytes of PC's IP address to 192.168.0.. (ex. 192.168.0.10)

4. Login in the displayed System Configuration Login screen.

5. Select [Serial Protocol]-[Passive HIProtocol] from [System Configuration] on the displayed screen for communication settings. After settings, click [SET] to confirm the setting values.

   Serial-Passive HIProtocol

Setup Items	Setting Value
Interface Type	RS232C
Transmission Control Procedure	Procedure1 1:1[*1]
Transmission Speed	19.2 kbps
Station No.	0

   *1   To use Procedure 2, select [Procedure2 1:1].

6. Set the operation mode setting switch of the External Device and turn ON the power again.

   <Operation Mode Setting Switch>

   • EH-WD10DR: Set the rotary switch to "0"

   • EH-WA23DR: Set all the DIP switch to OFF

3.33　　Setting Example 33

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

Individual Device Settings ×

PLC1

Series   EHV Series   ▼

Please reconfirm all of address settings that you are using if you have changed the series.

Station No.   0

Default

OK (O)   Cancel

■ Settings of External Device (Serial port on the CPU unit)

Use the programming software (Control Editor) for communication settings. Please refer to the manual of the External Device for more details.

◆ Procedure

1. Start the programming software and create the project. The project is displayed in the offline mode.
2. Select [Editor Communication Setting] from the [Tool] menu to display the communication setting dialog box.
3. Select either "USB" or "Serial" for the communication method to transfer the communication setting to the External Device and click [Setting].
4. Use the USB cable or serial cable (by Hitachi IES Co., Ltd.) to connect PC to the External Device.
5. Select [Mode Change] - [Online] from the [Online] menu to move to the online mode.
6. Select [CPU Settings] - [Serial Communication Settings] from the [Tool] menu to perform the communication settings.
   • CPU Communication Settings (Serial Communication Settings)

Setup Items	Settings
Serial Communication Settings	Specified
Port Type	RS232C
Speed	19.2 kbps
Communication Procedure	Procedure 1 (1:1)[*1]

*1   To use Procedure 2 for communication, select [Procedure 2 (1:1)].

7. Turn ON the power of the External Device again.

3.34   Setting Example 34

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (Serial port on the CPU unit)

Use the programming software (Control Editor) for communication settings. Please refer to the manual of the External Device for more details.

◆ Procedure

1. Start the programming software and create the project. The project is displayed in the offline mode.
2. Select [Editor Communication Setting] from the [Tool] menu to display the communication setting dialog box.
3. Select either "USB" or "Serial" for the communication method to transfer the communication setting to the External Device and click [Setting].
4. Use the USB cable or serial cable (by Hitachi IES Co., Ltd.) to connect PC to the External Device.
5. Select [Mode Change] - [Online] from the [Online] menu to move to the online mode.
6. Select [CPU Settings] - [Serial Communication Settings] from the [Tool] menu to perform the communication settings.

   • CPU Communication Settings (Serial Communication Settings)

Setup Items	Settings
Serial Communication Settings	Specified
Port Type	RS422/RS485
Speed	19.2 kbps
Communication Procedure	Procedure 1 (1:n)[*1]
Station No.	Enter the Station No. set on the display.[*2]

*1 To use Procedure 2 for communication, select [Procedure 2 (1:n)].

*2 If you set the Station No. to "None", communication is not available.

7. Turn ON the power of the External Device again.

3.35   Setting Example 35

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (Serial port on the CPU unit)

Use the programming software (Control Editor) for communication settings. Please refer to the manual of the External Device for more details.

◆ Procedure

1.   Start the programming software and create the project. The project is displayed in the offline mode.

2.   Select [Editor Communication Setting] from the [Tool] menu to display the communication setting dialog box.

3.   Select either "USB" or "Serial" for the communication method to transfer the communication setting to the External Device and click [Setting].

4.   Use the USB cable or serial cable (by Hitachi IES Co., Ltd.) to connect PC to the External Device.

5.   Select [Mode Change] - [Online] from the [Online] menu to move to the online mode.

6.   Select [CPU Settings] - [Serial Communication Settings] from the [Tool] menu to perform the communication settings.

•   CPU Communication Settings (Serial Communication Settings)

Setup Items	Settings
Serial Communication Settings	Specified
Port Type	RS422/RS485
Speed	19.2 kbps
Communication Procedure	Procedure 1 (1:n)[*1]
Station No.	Enter the Station No. set on the display.[*2]

*1   To use Procedure 2 for communication, select [Procedure 2 (1:n)].

*2   If you set the Station No. to "None", communication is not available.

7.   Turn ON the power of the External Device again.

3.36   Setting Example 36

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

Individual Device Settings

PLC1

Series: EHV Series

Please reconfirm all of address settings that you are using if you have changed the series.

Station No.: 0

Default

OK (O)   Cancel

■ Settings of External Device (EH-SIO)

Use the switch on the EH-SIO for communication settings. After setting, assign I/O, and turn ON the power of the External Device again to enable the setting. Use the ladder software (LADDER EDITOR for Windows) for the I/O assignment.

Please refer to the manual of the External Device for more details.

◆ Procedure

1. Use the DIP switch on the EH-SIO for communication settings.

• Communication Setting Switch 1 (for Port 1)

DIP Switch	Settings	Description
01	OFF	Speed: 19,200 bps Please refer to the manual of the External Device for more details about other transmission speed settings.
02	ON	
03	ON	
04	ON	

05	OFF	Transmission character configuration settings
		    Data Length: 7 bits
		    Stop Bit: 1 bit
		    Parity: Even

06	ON	
07	OFF	
08	OFF	Always OFF

2. Ladder program is required for initial settings. Please refer to the manual of the External Device for more details.

3.37   Setting Example 37

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (EH-SIO)

Use the switch on the EH-SIO for communication settings. After setting, assign I/O, and turn ON the power of the External Device again to enable the setting.Use the ladder software (LADDER EDITOR for Windows) for the I/O assignment.

Please refer to the manual of the External Device for more details.

◆ Procedure

1. Use the DIP switch on the EH-SIO for communication settings.

• Communication Setting Switch 2 (for Port 2)

DIP Switch	Settings	Description
01	OFF	Speed: 19,200 bps Please refer to the manual of the External Device for more details about other transmission speed settings.
02	ON	
03	ON	
04	ON	
05	OFF	Transmission character configuration settings 　　Data Length: 7 bits 　　Stop Bit: 1 bit 　　Parity: Even
06	ON	
07	OFF	
08	OFF	Interface Type: RS232C

2. Ladder program is required for initial settings. Please refer to the manual of the External Device for more details.

3.38　　　Setting Example 38

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

Individual Device Settings		
PLC1		
Series	EHV Series	▼
Please reconfirm all of address settings that you are using if you have changed the series.		
Station No.	0	↕
		Default
OK (O)	Cancel	

■ Settings of External Device (EH-SIO)

Use the switch on the EH-SIO for communication settings. After setting, assign I/O, and turn ON the power of the External Device again to enable the setting.Use the ladder software (LADDER EDITOR for Windows) for the I/O assignment.

Please refer to the manual of the External Device for more details.

◆ Procedure

1. Use the DIP switch on the EH-SIO for communication settings.

• Communication Setting Switch 2 (for Port 2)

DIP Switch	Settings	Description
01	OFF	Speed: 19,200 bps Please refer to the manual of the External Device for more details about other transmission speed settings.
02	ON	
03	ON	
04	ON	
05	OFF	Transmission character configuration settings Data Length: 7 bits Stop Bit: 1 bit Parity: Even
06	ON	
07	OFF	
08	ON	Interface Type: RS422/RS485C

2. Ladder program is required for initial settings. Please refer to the manual of the External Device for more details.

3.39 Setting Example 39

■ Settings of GP-Pro EX

◆ Communication Settings

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

◆ Device Setting

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

■ Settings of External Device (EH-SIO)

Use the switch on the EH-SIO for communication settings. After setting, assign I/O, and turn ON the power of the External Device again to enable the setting. Use the ladder software (LADDER EDITOR for Windows) for the I/O assignment.

Please refer to the manual of the External Device for more details.

◆ Procedure

1. Use the DIP switch on the EH-SIO for communication settings.

- Communication Setting Switch 2 (for Port 2)

DIP Switch	Settings	Description
01	OFF	Speed: 19,200 bps Please refer to the manual of the External Device for more details about other transmission speed settings.
02	ON	
03	ON	
04	ON	
05	OFF	Transmission character configuration settings 　　Data Length: 7 bits 　　Stop Bit: 1 bit 　　Parity: Even
06	ON	
07	OFF	
08	ON	Interface Type: RS422/RS485C

2. Ladder program is required for initial settings. Please refer to the manual of the External Device for more details.

4 Setup Items

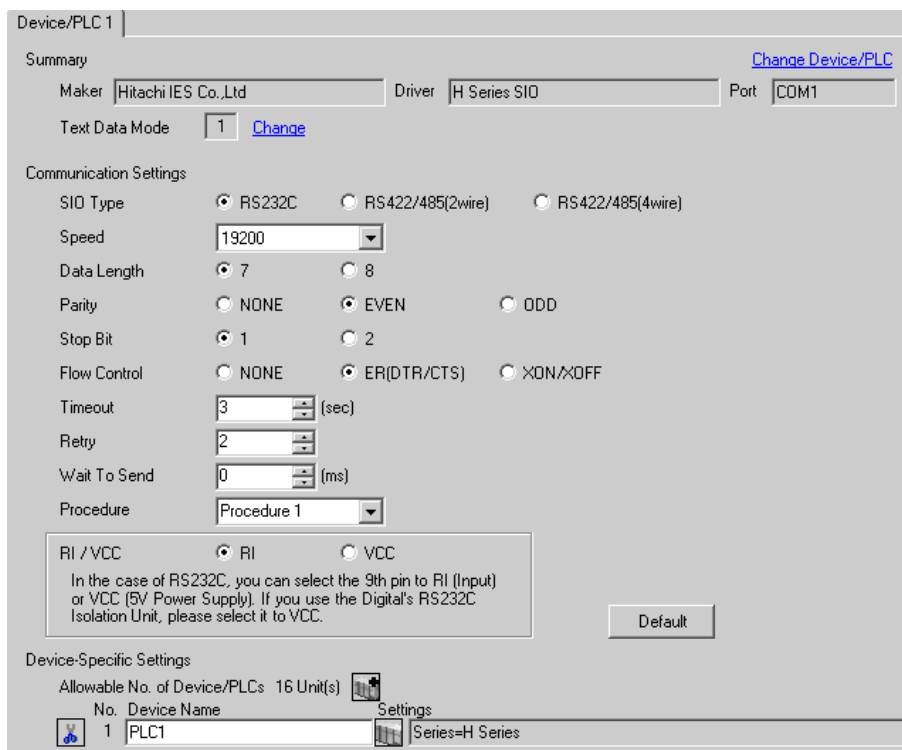Set communication settings of the Display with GP-Pro Ex or in off-line mode of the Display.

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

)3 Example of Communication Setting (page 9)

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 (s) for which the Display waits for the response from the External Device.

Continues to the next page.

Setup Items	Setup Description
Retry	In case of no response from the External Device, use an integer from 0 to 255 to enter how many times the Display retransmits the command.
Wait To Send	Use an integer from "0 to 255" to enter standby time (ms) for the Display from receiving packets to transmitting next commands.
Procedure	Select the transmission control procedure on the External Device.

■ Device Setting

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

When connecting multiple External Devices, you can click from [Device-Specific Settings] of [Device/PLC Settings] to add the External Device which is available to set.

Setup Items	Setup Description
Series	Selects a model of the External Device.
Station No.	Enter the unit No. of the External Device.

4.2   Settings 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 Equipment Settings] in the 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.
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.
Procedure	Select the transmission control procedure on the External Device.

■ Device Setting

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

Comm.	Device	Option		

H Series SIO   [COM1]   Page 1/1

      Device/PLC Name   PLC1   ▼

             Series   H Series

             Station No.   0 ▼ ▲

	Exit		Back	2006/05/15 11:31:12

Setup Items	Setup Description
Device/PLC name	Select the External Device to set. Device name is a title of the External Device set with GP-Pro EX. (Initial value [PLC1])
Series	Displays a model of the External Device.
Station No.	Enter the unit No. of the External Device.

■ Option

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

Comm.	Device	Option		

H Series SIO   [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	2006/05/15 11:31:14

Setup Items	Setup Description
RI/VCC	Switches RI/VCC of the 9th pin.

5   Cable Diagram

The cable diagram shown below may be different from the cable diagram recommended by Hitachi IES Co., Ltd.

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..
- When connecting IPC with External Device by RS-232C, the COM port which can be used changes with series. Please refer to the manual of IPC for details.

  Usable port

Series	Usable port
PS-2000B	COM1[*1] , COM2, COM3[*1], COM4
PS-3650A, PS-3651A	COM1[*1]
PS-3700A (Pentium®4-M)	COM1[*1], COM2[*1], COM3[*2] , COM4

  *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.

- When connecting to the COM3 of PS-3700A (Pentium®4-M) with External Device, it is necessary to set up the SIO type of COM3 with a Dip switch. Please refer to the manual of PS-3700A (Pentium®4-M) for details.

  Dip switch setting: RS-232C

Dip switch	Setting	Description
1	OFF	Reserve (always OFF)
2	OFF	SIO type of COM3: RS-232C
3	OFF	
4	OFF	Output mode of TX data: Always output
5	OFF	Terminal resistance insertion to TX (220Ω): None
6	OFF	Terminal resistance insertion to RX (220Ω): None
7	OFF	Short-circuit of TXA and RXA: Does not Exist
8	OFF	Short-circuit of TXB and RXB: Does not Exist
9	OFF	Auto Detection: Disable
10	OFF	

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

Dip switch	Setting	Description
1	OFF	Reserve (always OFF)
2	ON	SIO type of COM3: RS-422/485
3	ON	
4	OFF	Output mode of TX data: Always output
5	OFF	Terminal resistance insertion to TX (220Ω): None
6	OFF	Terminal resistance insertion to RX (220Ω): None
7	OFF	Short-circuit of TXA and RXA: Does not Exist
8	OFF	Short-circuit of TXB and RXB: Does not Exist
9	OFF	Auto Detection: Disable
10	OFF	

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

Dip switch	Setting	Description
1	OFF	Reserve (always OFF)
2	ON	SIO type of COM3: RS-422/485
3	ON	
4	OFF	Output mode of TX data: Always output
5	OFF	Terminal resistance insertion to TX (220Ω): None
6	OFF	Terminal resistance insertion to RX (220Ω): None
7	ON	Short-circuit of TXA and RXA: Exists
8	ON	Short-circuit of TXB and RXB: Exists
9	ON	Auto Detection: Enable
10	ON	

Cable Diagram 1

Display (Connection Port)		Cable[*1]	Remarks
GP (COM1) IPC[*2*3]	A	By Hitachi IES Co., Ltd. WVCB02H	Cable length: 15m or less
	B	Your own cable 1	
	C	Your own cable 2	

*1 You need to change the wiring depending on the speed.

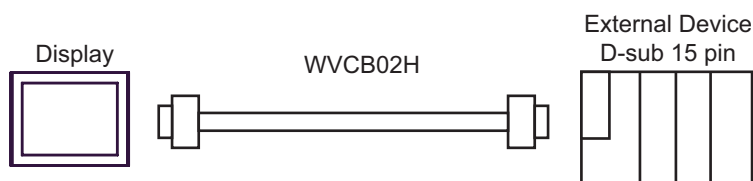|	H-200 H-250 H-252B		H-252C		H-300/H-302 H-700/H-702 H-2000/H-2002		H-4010	
	Speed	Wiring	Speed	Wiring	Speed	Wiring	Speed	Wiring
Peripheral Port 1 or Serial Port 1	2400bps 4800bps 9600bps	B	2400bps 4800bps 9600bps 19200bps	A B C	4800bps	B	4800bps	B
	19200bps	A C			19200bps	A C	19200bps	A, C
							38400bps	A,B,C
Peripheral Port 2 or Serial Port 2	-	-	4800bps	B	-	-	4800bps	B
			19200bps	A C			19200bps	A, C
							38400bps	A,B,C

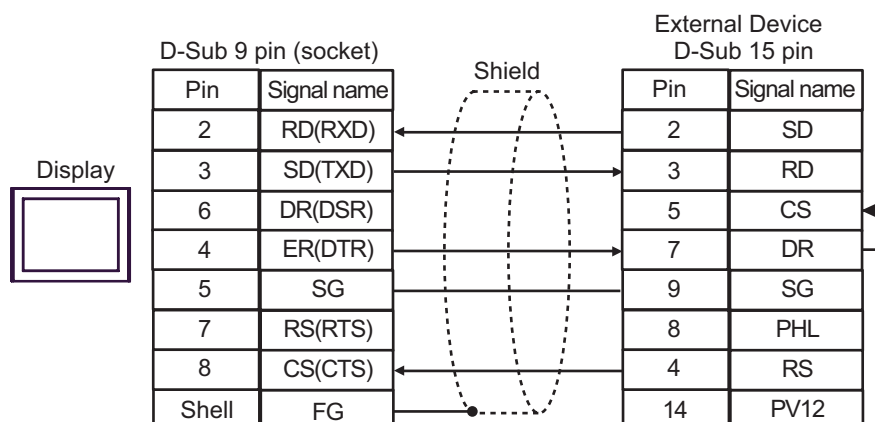*2 Usable ports are different by the series.
☞ Usable port (page 92)

*3 When use the COM3 of PS-3700A (Pentium®4-M), set the SIO type of COM3 with Dip switch.
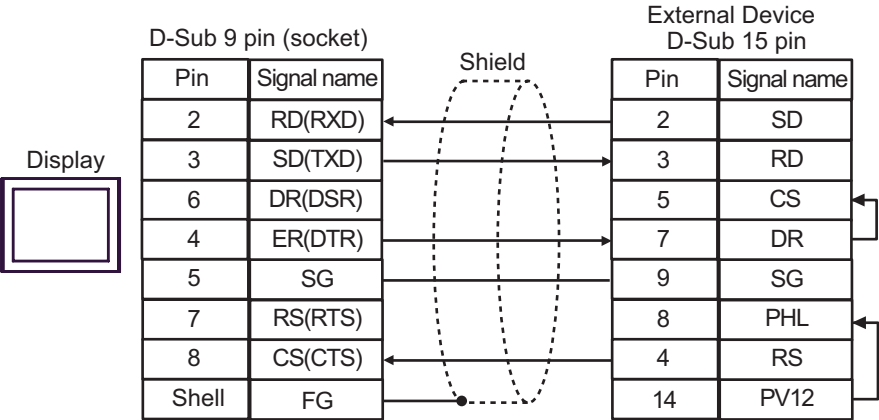☞ Dip switch setting: RS-232C (page 92)

A. When using WVCB02H (2m) by Hitachi IES Co., Ltd.

Display   WVCB02H   External Device D-sub 15 pin

B. When using your own cable 1

D-Sub 9 pin (socket)   External Device D-Sub 15 pin

Display

Pin	Signal name		Pin	Signal name
2	RD(RXD)		2	SD
3	SD(TXD)		3	RD
6	DR(DSR)		5	CS
4	ER(DTR)		7	DR
5	SG		9	SG
7	RS(RTS)		8	PHL
8	CS(CTS)		4	RS
Shell	FG		14	PV12

Shield

C. When using your own cable 2

D-Sub 9 pin (socket)			External Device D-Sub 15 pin	
Pin	Signal name		Pin	Signal name
2	RD(RXD)		2	SD
3	SD(TXD)		3	RD
6	DR(DSR)		5	CS
4	ER(DTR)		7	DR
5	SG		9	SG
7	RS(RTS)		8	PHL
8	CS(CTS)		4	RS
Shell	FG		14	PV12

Display

Shield

Cable Diagram 2

Display (Connection Port)		Cable	Remarks
GP[*1] (COM1) AGP-3302B (COM2) IPC[*2] (COM3)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 250m or less
	B	Your own cable	
GP[*3] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

*1 All GP models except AGP-3302B

*2 Only COM3 of PS -3700A (Pentium®4-M) can be used. When use the COM3, set the SIO type of COM3 with Dip switch.
☞Dip switch setting: RS-422/485 (4 wire) (page 93)

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

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

• 1:1 Connection

• 1:n Connection
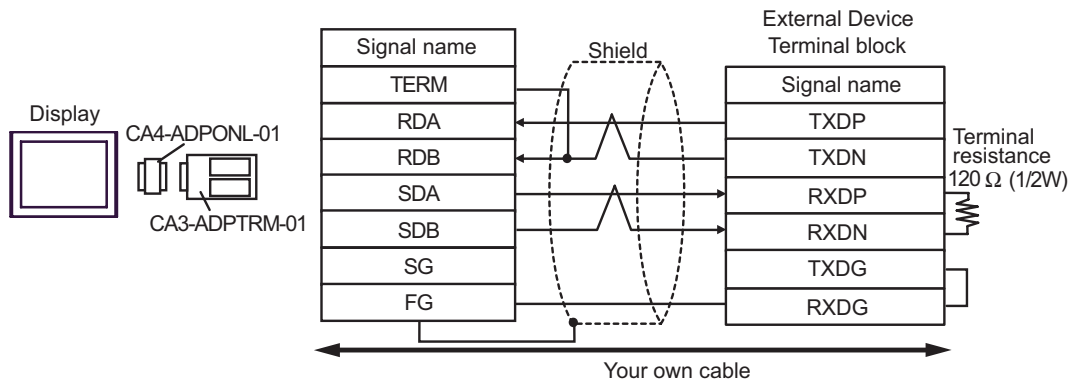

B. When your own cable is used
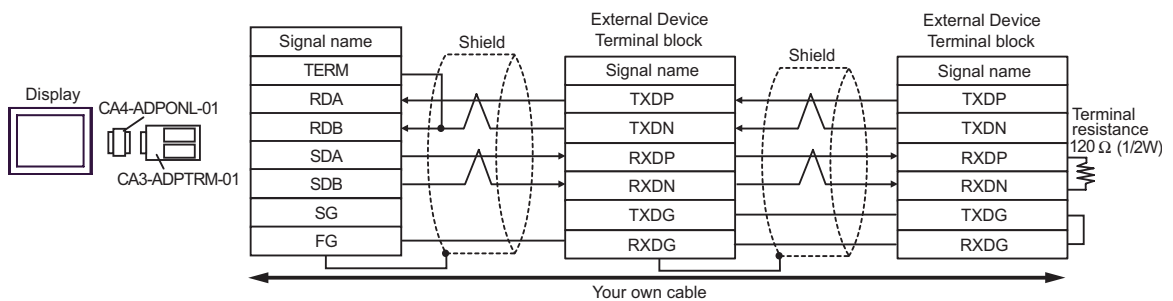
• 1:1 Connection

• 1:n Connection

C. When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable
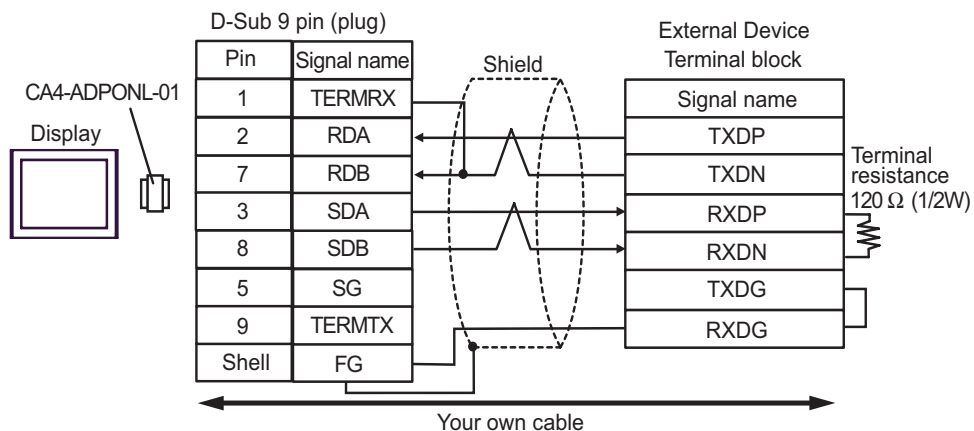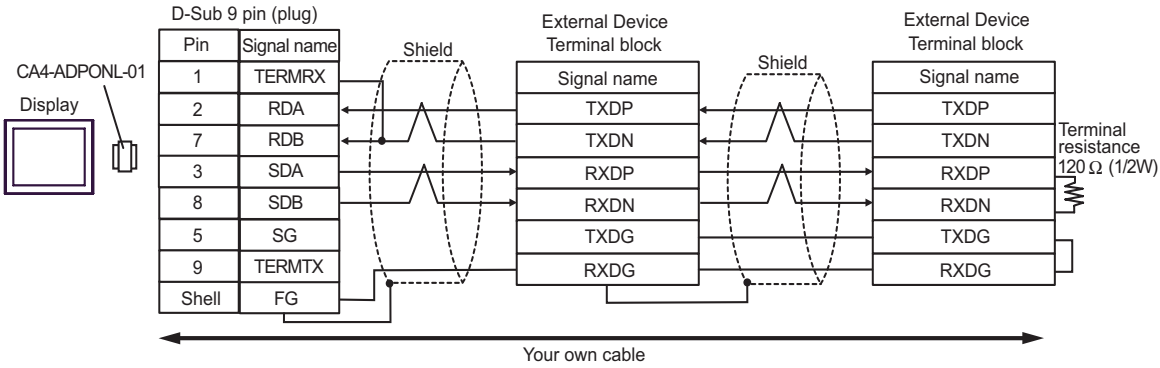
• 1:1 Connection

• 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

Your own cable

Cable Diagram 3

Display (Connection Port)		Cable[1]	Remarks
GP (COM1) IPC[2][3]	A	By Hitachi IES Co., Ltd. EH-VCB02(2m)	Cable length: 15m or less
	B	By Hitachi IES Co., Ltd. WVCB02H(2m) + Conversion cable by Hitachi IES Co., Ltd. EH-RS05(0.5m)	
	C	Your own cable 1 + Conversion cable by Hitachi IES Co., Ltd. EH-RS05(0.5m)	
	D	Your own cable 2 + Conversion cable by Hitachi IES Co., Ltd. EH-RS05(0.5m)	

*1   You need to change the wiring depending on the speed.

	EH-150	
	Speed	Wiring
Peripheral Port 1 or Serial Port 1	4800bps	A
	9600bps	B
	19200bps	C
	38400bps	D
Peripheral Port 2 or Serial Port 2	4800bps	A
	9600bps	C
	19200bps	B
	38400bps	D

*2   Usable ports are different by the series.

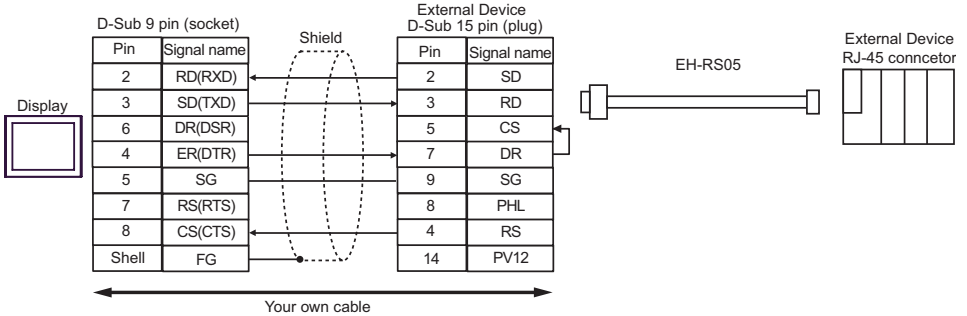*3   When use the COM3 of PS-3700A (Pentium®4-M), set the SIO type of COM3 with Dip switch.

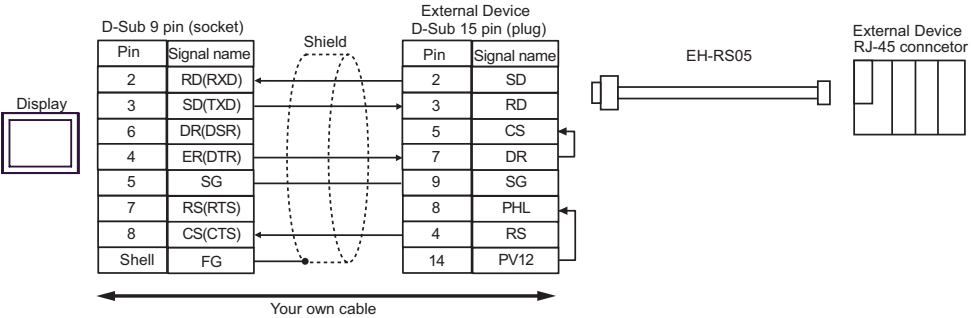A.When using the cable (EH-VCB02) by Hitachi IES Co., Ltd.
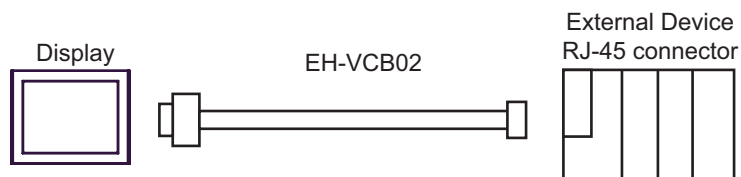
B.When using the cable (WVCB02H) by Hitachi IES Co., Ltd. and the conversion cable (EH-RS05) by Hitachi IES Co., Ltd.
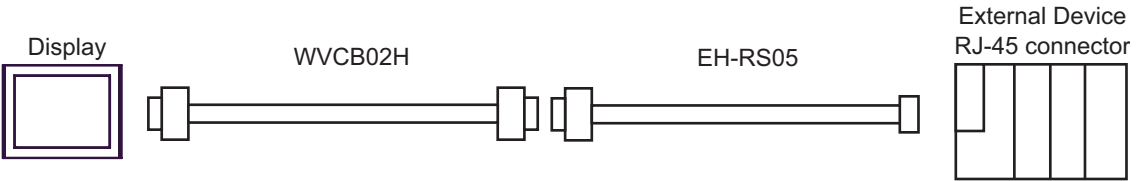
C. When using your own cable 1 and the conversion cable (EH-RS05) by Hitachi IES Co., Ltd.

D. When using your own cable 2 and the conversion cable (EH-RS05) by Hitachi IES Co., Ltd.

Cable Diagram 4

Display (Connection Port)		Cable	Remarks
GP*1 (COM1) AGP-3302B (COM2) IPC*2 (COM3)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Conversion cable by Hitachi IES Co., Ltd. EH-RS05	Cable length: 500m or less
	B	Your own cable + Conversion cable by Hitachi IES Co., Ltd. EH-RS05	
GP*3 (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Conversion cable by Hitachi IES Co., Ltd. EH-RS05	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable + Conversion cable by Hitachi IES Co., Ltd. EH-RS05	

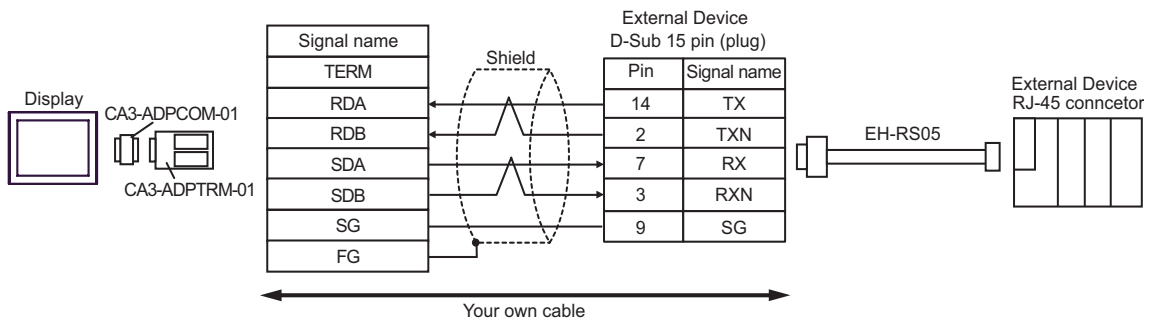*1   All GP models except AGP-3302B

*2   Only COM3 of PS -3700A (Pentium®4-M) can be used. When use the COM3, set the SIO type of COM3 with Dip switch.
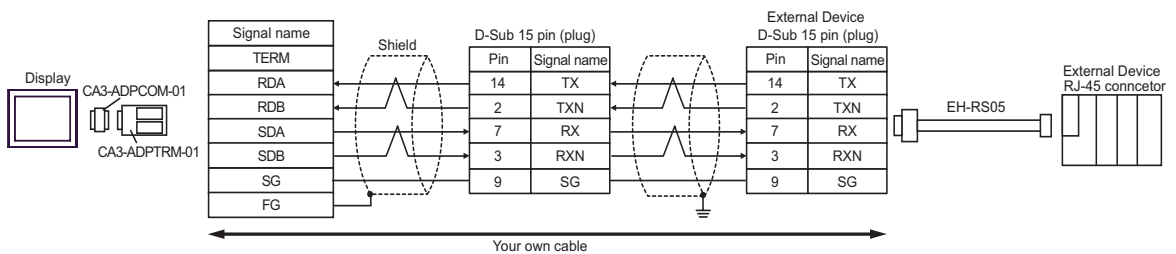   ☞ Dip switch setting: RS-422/485 (4 wire) (page 93)

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

A. When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable and the conversion cable (EH-RS05) by Hitachi IES Co., Ltd.
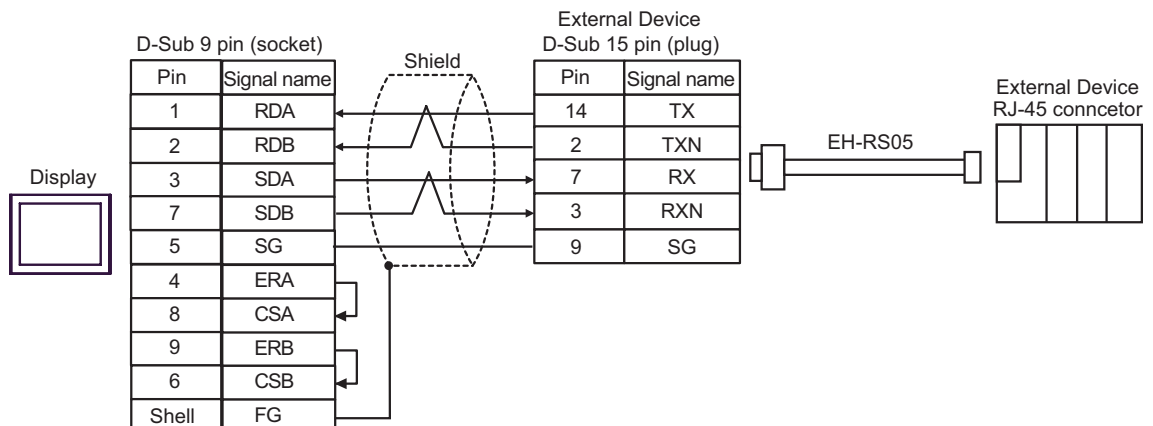
• 1:1 Connection

B. When using your own cable and the conversion cable (EH-RS05) by Hitachi IES Co., Ltd.
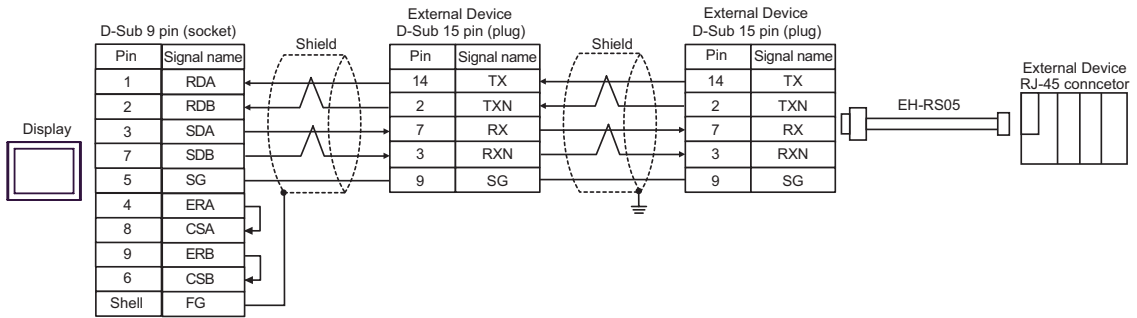
• 1:n Connection

*For more information about the termination resistance, contact Hitachi IES Co., Ltd.

B. When using your own cable and the conversion cable (EH-RS05) by Hitachi IES Co., Ltd.
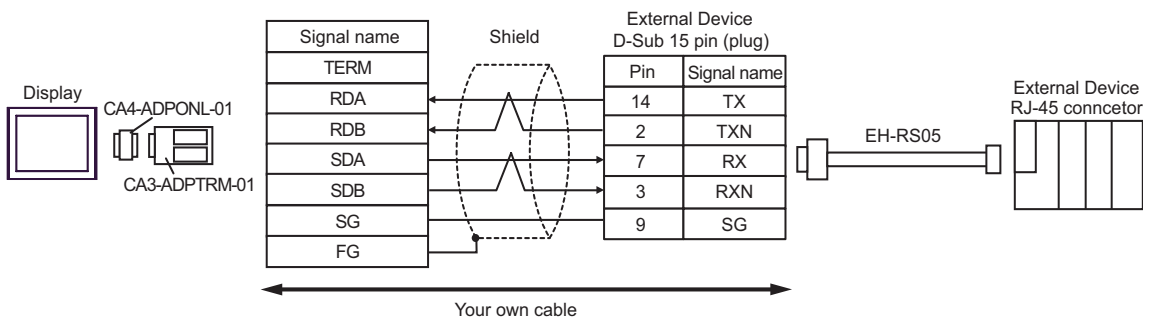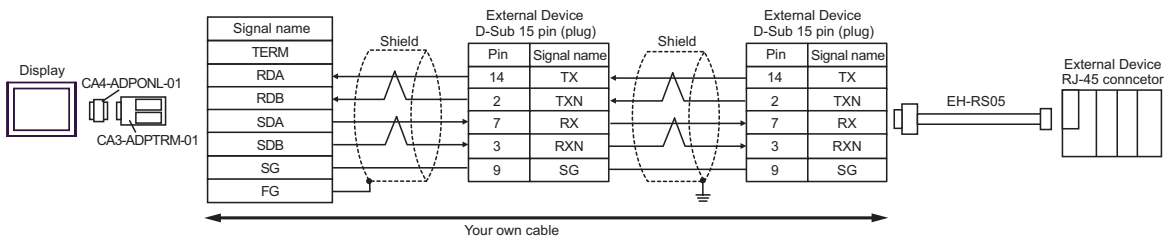
• 1:1 Connection

• 1:n Connection

*For more information about the termination resistance, contact Hitachi IES Co., Ltd.

C. When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable and the conversion cable (EH-RS05) by Hitachi IES Co., Ltd.
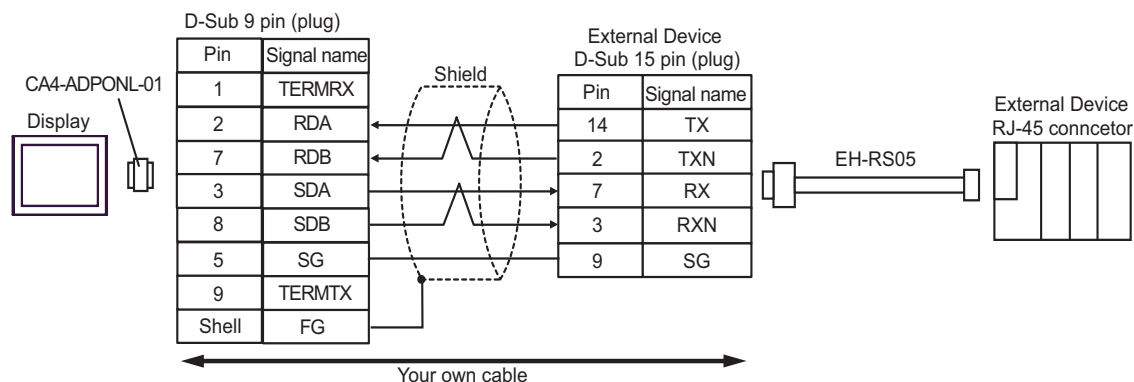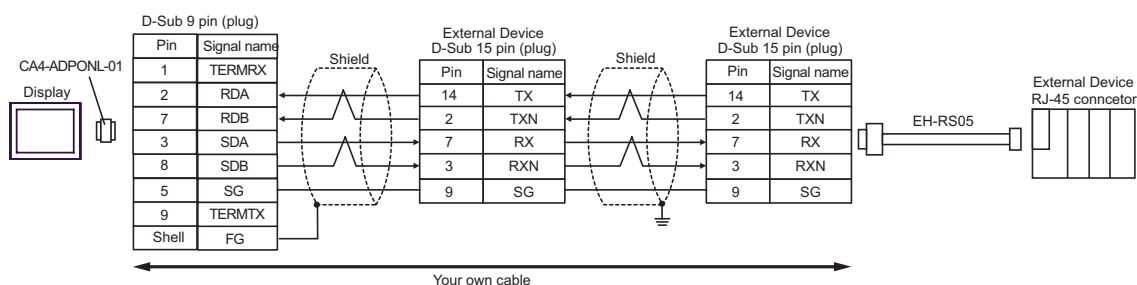
• 1:1 Connection

• 1:n Connection

*For more information about the termination resistance, contact Hitachi IES Co., Ltd.

D. When using the online adapter (CA4-ADPONL-01), your own cable and the conversion cable (EH-RS05) by Hitachi IES Co., Ltd.

- 1:1 Connection

- 1:n Connection

*For more information about the termination resistance, contact Hitachi IES Co., Ltd.

Cable Diagram 5

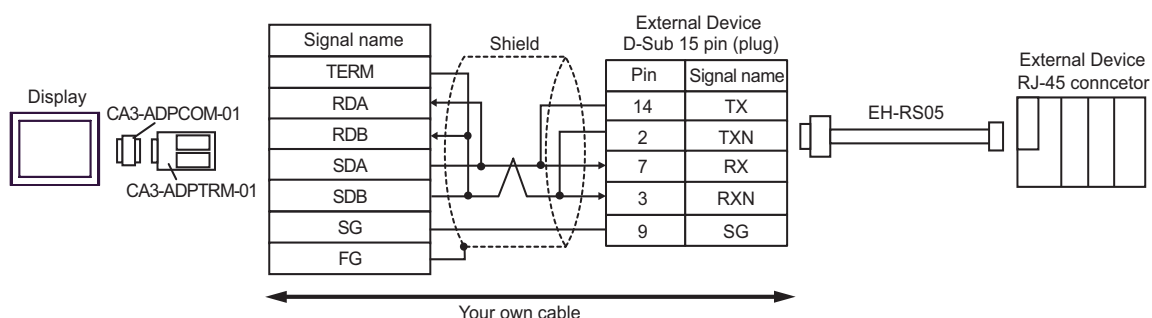| Display (Connection Port)		Cable	Remarks
GP*1 (COM1) AGP-3302B (COM2)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable + Conversion cable by Hitachi IES Co., Ltd. EH-RS05	Cable length: 500m or less
	B	Your own cable + Conversion cable by Hitachi IES Co., Ltd. EH-RS05	
GP*2 (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable + Conversion cable by Hitachi IES Co., Ltd. EH-RS05	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable + Conversion cable by Hitachi IES Co., Ltd. EH-RS05	
IPC*3 (COM3)	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable + Conversion cable by Hitachi IES Co., Ltd. EH-RS05	
	F	Your own cable + Conversion cable by Hitachi IES Co., Ltd. EH-RS05	

*1   All GP models except AGP-3302B

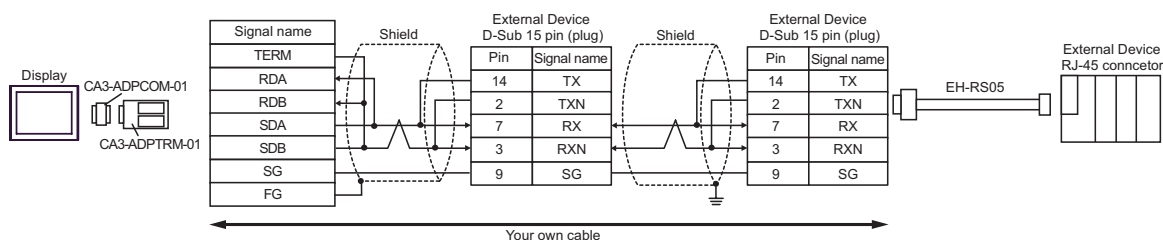*2   All GP models except GP-3200 series and AGP-3302B

*3   Only COM3 of PS -3700A (Pentium®4-M) can be used. When use the COM3, set the SIO type of COM3 with Dip switch.
☞ Dip switch setting: RS-422/485 (2 wire) (page 93)

A. When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable and the conversion cable (EH-RS05) by Hitachi IES Co., Ltd.
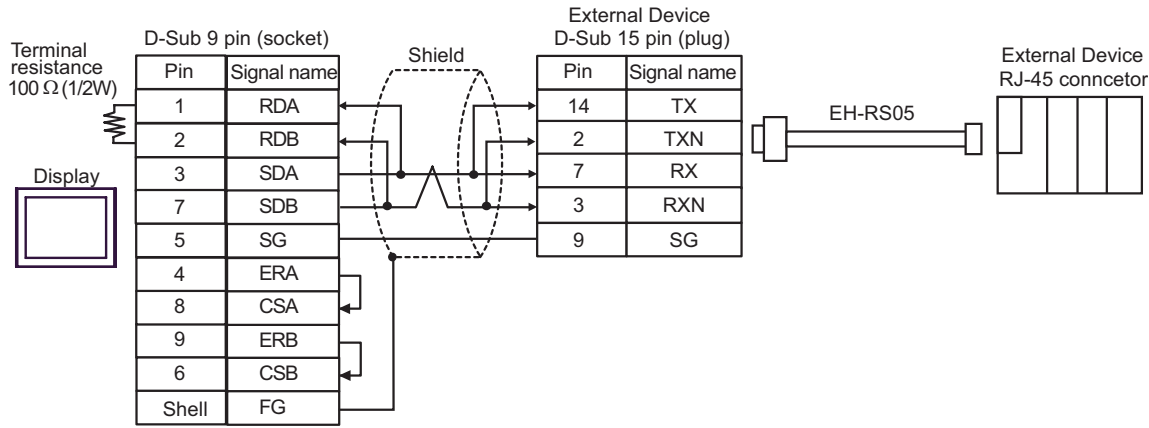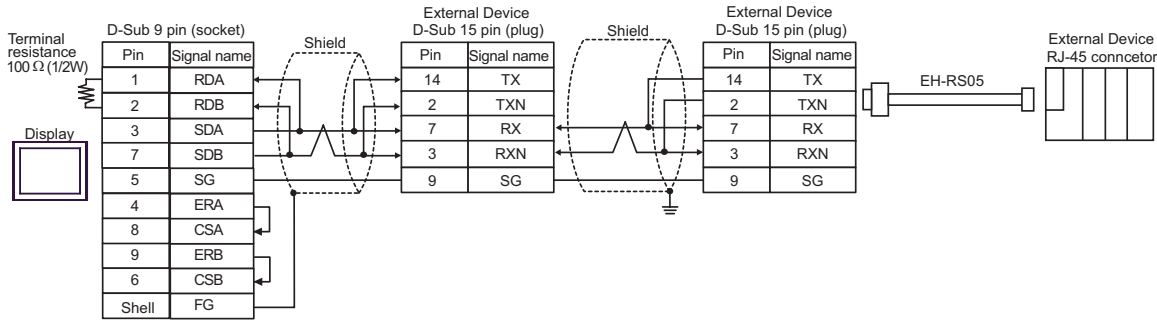
- 1:1 Connection

- 1:n Connection

B. When using your own cable and the conversion cable (EH-RS05) by Hitachi IES Co., Ltd.
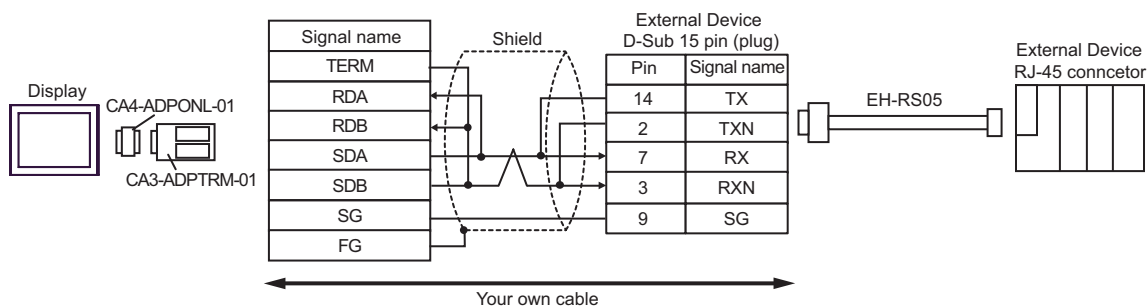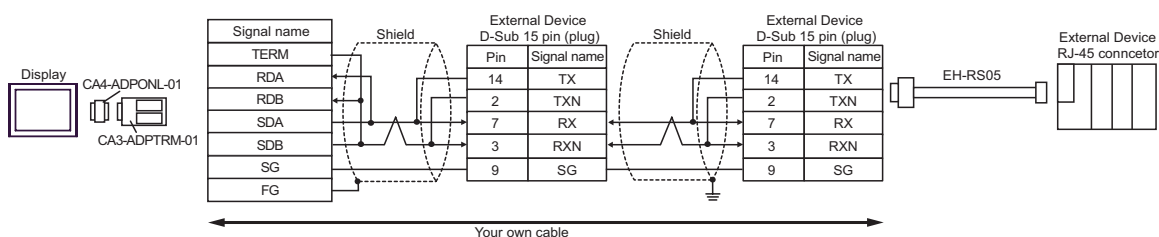
• 1:1 Connection

• 1:n Connection

C. When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable and the conversion cable (EH-RS05) by Hitachi IES Co., Ltd.
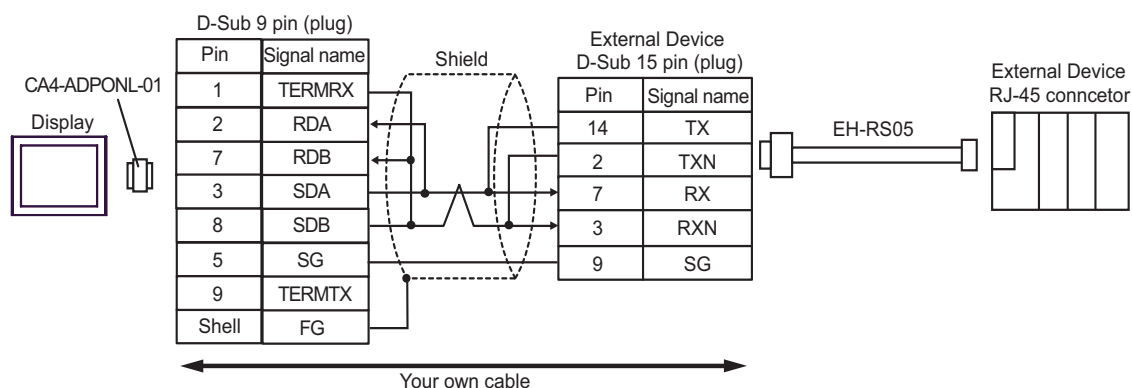
- 1:1 Connection

Signal name		External Device D-Sub 15 pin (plug)	
	Shield	Pin	Signal name
TERM			
RDA		14	TX
RDB		2	TXN
SDA		7	RX
SDB		3	RXN
SG		9	SG
FG			

Display — CA4-ADPONL-01 — CA3-ADPTRM-01

EH-RS05 — External Device RJ-45 conncetor

Your own cable

- 1:n Connection

Signal name		External Device D-Sub 15 pin (plug)			External Device D-Sub 15 pin (plug)	
	Shield	Pin	Signal name	Shield	Pin	Signal name
TERM						
RDA		14	TX		14	TX
RDB		2	TXN		2	TXN
SDA		7	RX		7	RX
SDB		3	RXN		3	RXN
SG		9	SG		9	SG
FG						

Display — CA4-ADPONL-01 — CA3-ADPTRM-01

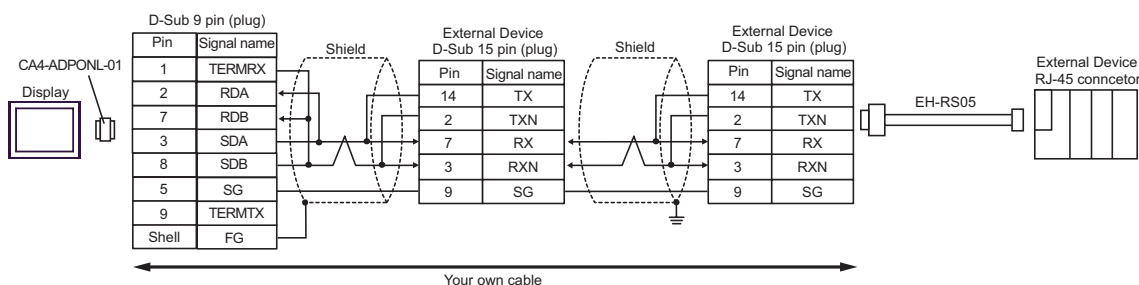EH-RS05 — External Device RJ-45 conncetor

Your own cable

D. When using the online adapter (CA4-ADPONL-01), your own cable and the conversion cable (EH-RS05) by Hitachi IES Co., Ltd.
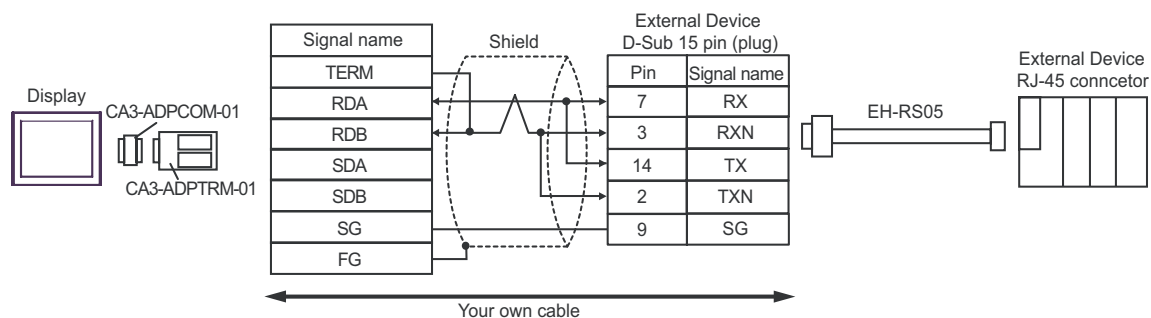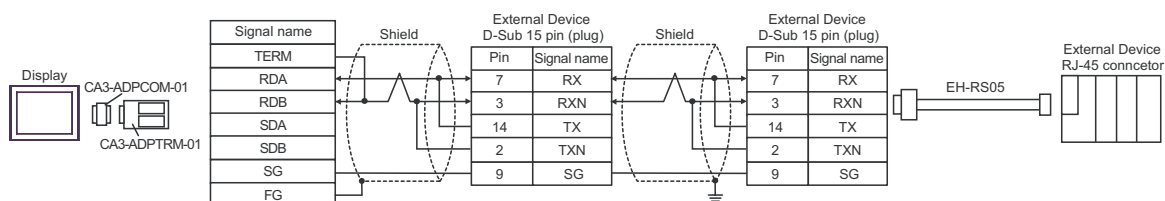
• 1:1 Connection

• 1:n Connection

E. When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face, your own cable and the conversion cable (EH-RS05) by Hitachi IES Co., Ltd.
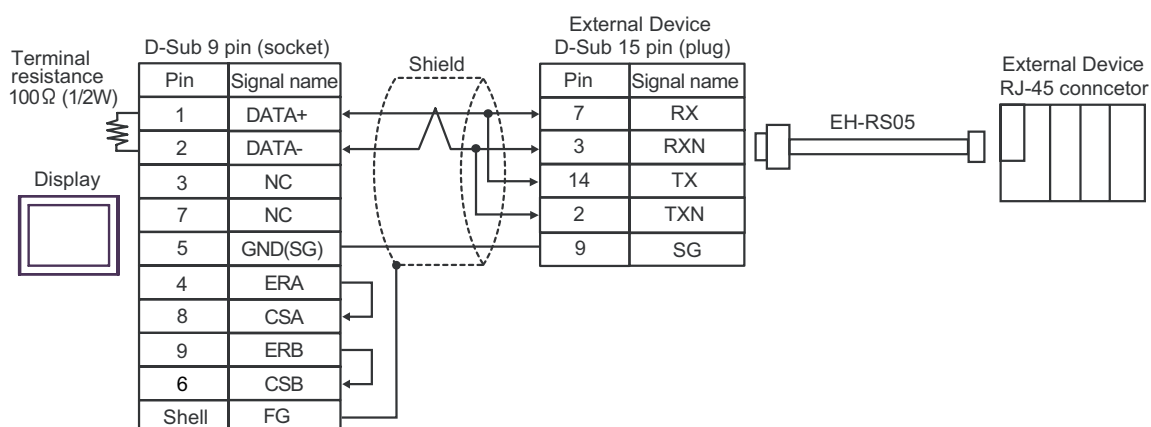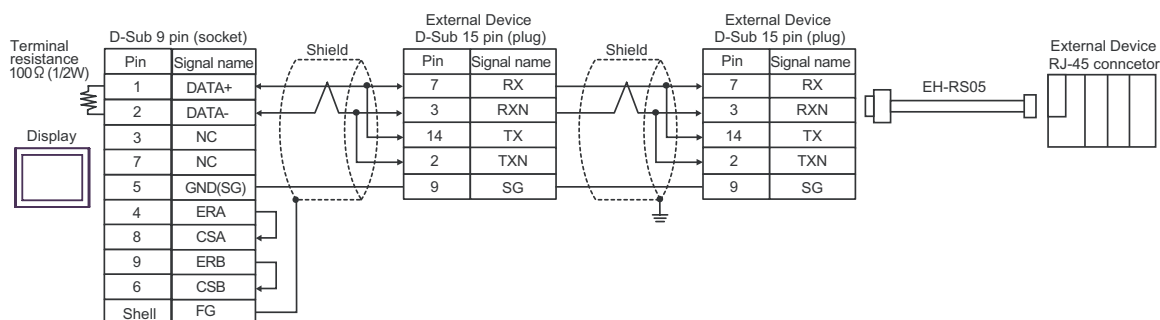
• 1:1 Connection

• 1:n Connection

F.   When using your own cable and the conversion cable (EH-RS05) by Hitachi IES Co., Ltd.

•   1:1 Connection

•   1:n Connection

Cable Diagram 6

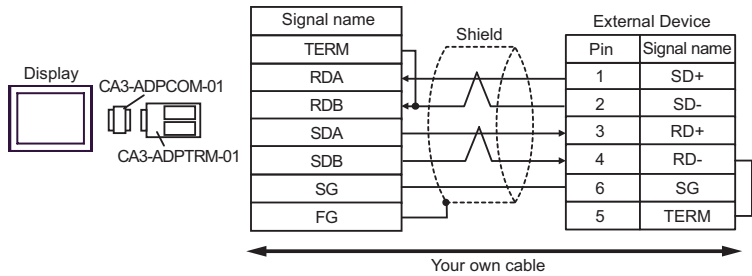| Display (Connection Port)		Cable	Remarks
GP[*1] (COM1) AGP-3302B (COM2) IPC[*2] (COM3)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 500m or less
	B	Your own cable	
GP[*3] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

*1   All GP models except AGP-3302B

*2   Only COM3 of PS -3700A (Pentium®4-M) can be used. When use the COM3, set the SIO type of COM3 with Dip switch.
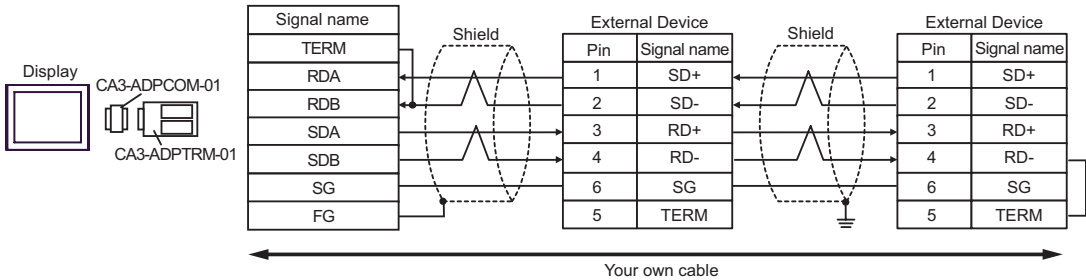   ☞ Dip switch setting: RS-422/485 (4 wire) (page 93)

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

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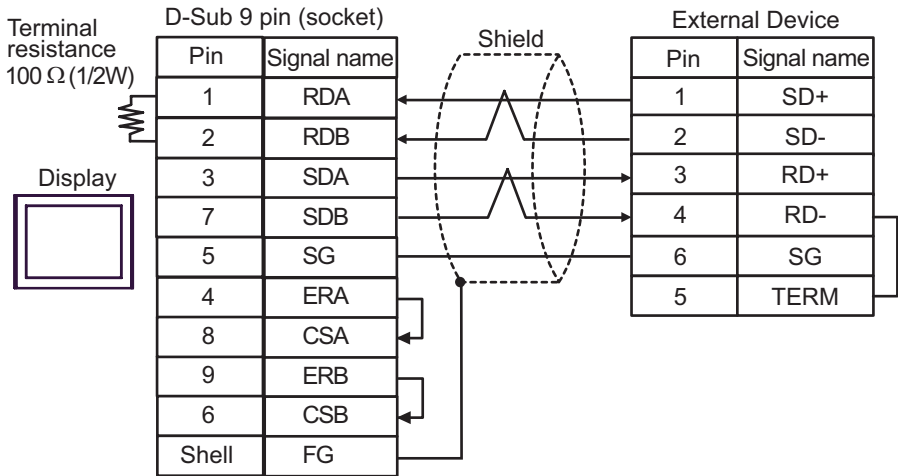
- 1:1 Connection
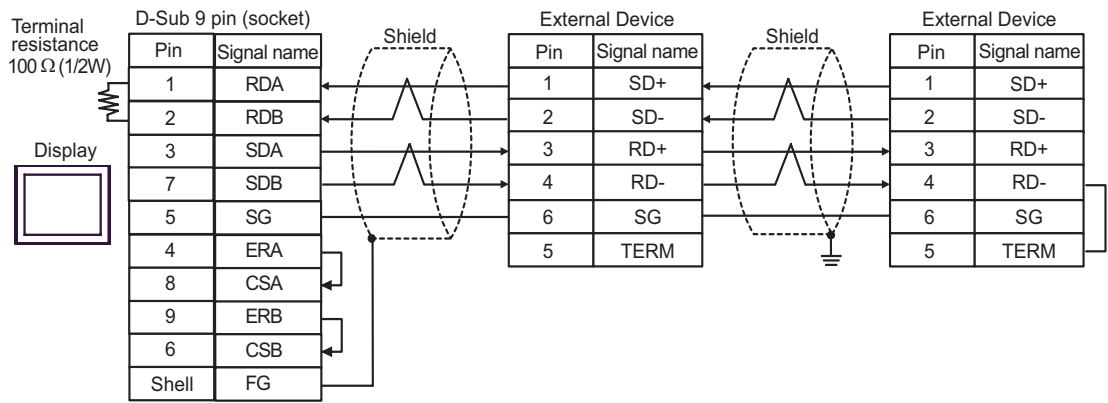

- 1:n Connection

B. When your own cable is used

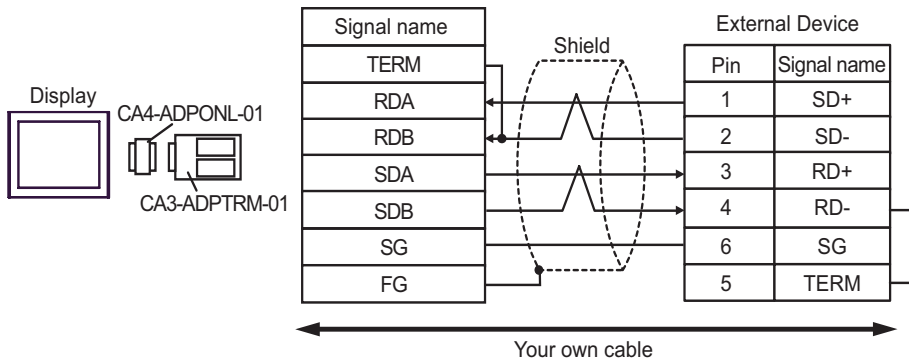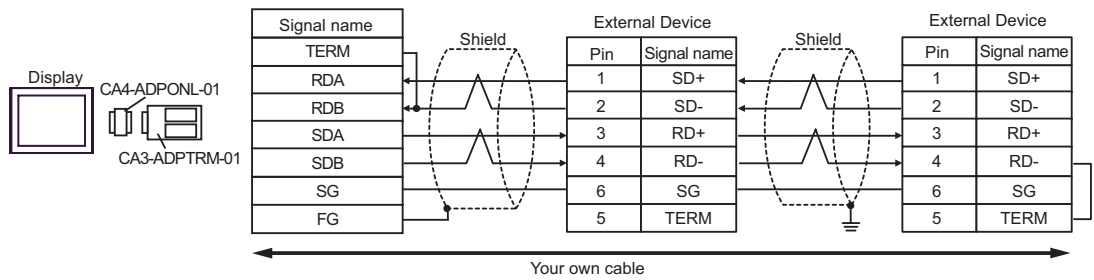- 1:1 Connection

- 1:n Connection

C. When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable
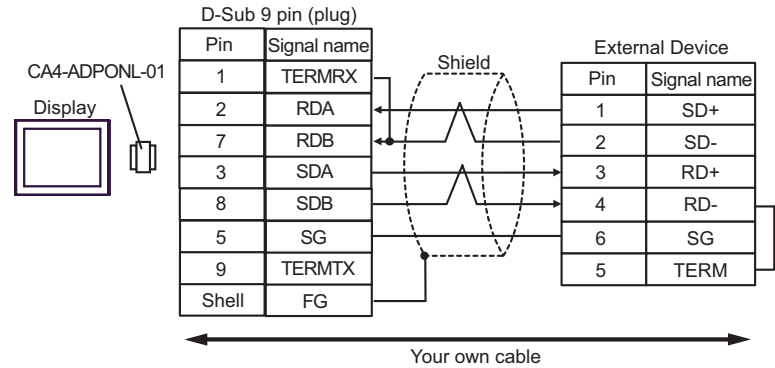
- 1:1 Connection

Your own cable

- 1:n Connection

Your own cable

D. When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable

•   1:1 Connection

Your own cable

•   1:n Connection

Your own cable

Cable Diagram 7

Display (Connection Port)		Cable	Remarks
GP[*1] (COM1) AGP-3302B (COM2)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 500m or less
	B	Your own cable	
GP[*2] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	
IPC[*3] (COM3)	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	F	Your own cable	

*1   All GP models except AGP-3302B

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

*3   Only COM3 of PS -3700A (Pentium®4-M) can be used. When use the COM3, set the SIO type of COM3 with Dip switch.
         ☞ Dip switch setting: RS-422/485 (2 wire) (page 93)

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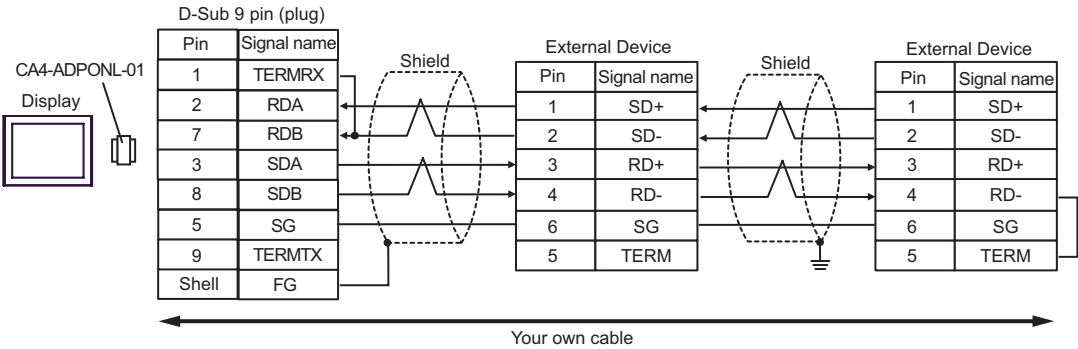
- 1:1 Connection

Your own cable

- 1:n Connection

Your own cable

B. When your own cable is used

• 1:1 Connection

• 1:n Connection

C. When using the online adapter (CA4-ADPONL-01), the 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

Your own cable

- 1:n Connection

Your own cable

E. When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable
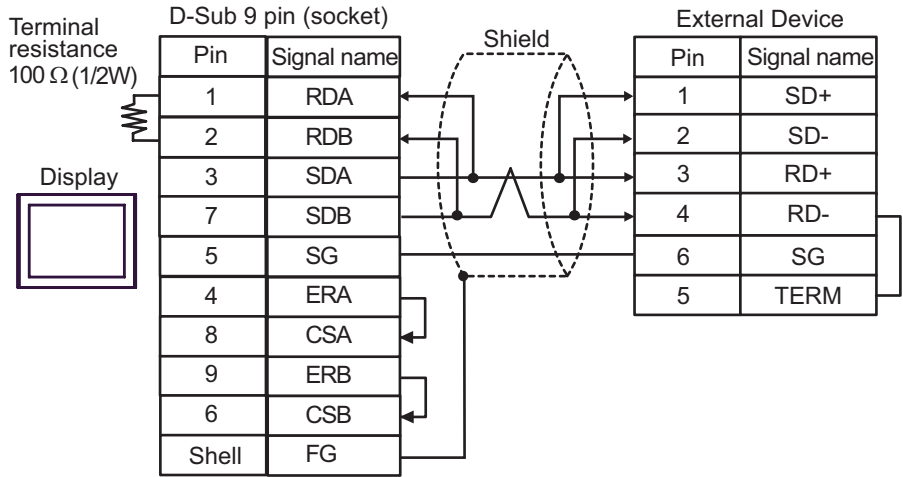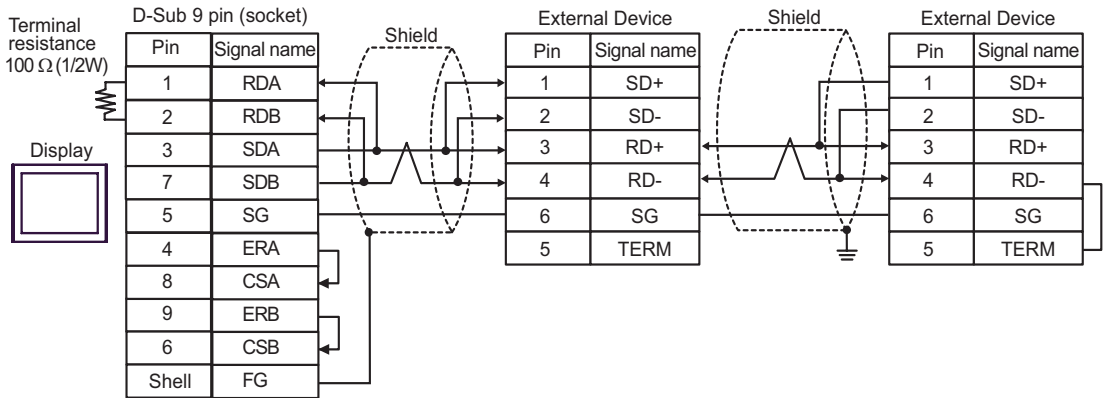
- 1:1 Connection

- 1:n Connection

F. When your own cable is used

• 1:1 Connection

• 1:n Connection

Cable Diagram 8

Display (Connection Port)		Cable	Remarks
GP[*1] (COM1) AGP-3302B (COM2) IPC[*2] (COM3)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 250m or less
	B	Your own cable	
GP[*3] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

*1   All GP models except AGP-3302B

*2   Only COM3 of PS -3700A (Pentium®4-M) can be used. When use the COM3, set the SIO type of COM3 with Dip switch.
        ☞Dip switch setting: RS-422/485 (4 wire) (page 93)

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

A.When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter

(CA3-ADPTRM-01) by Pro-face and your own cable

• 1:1 Connection
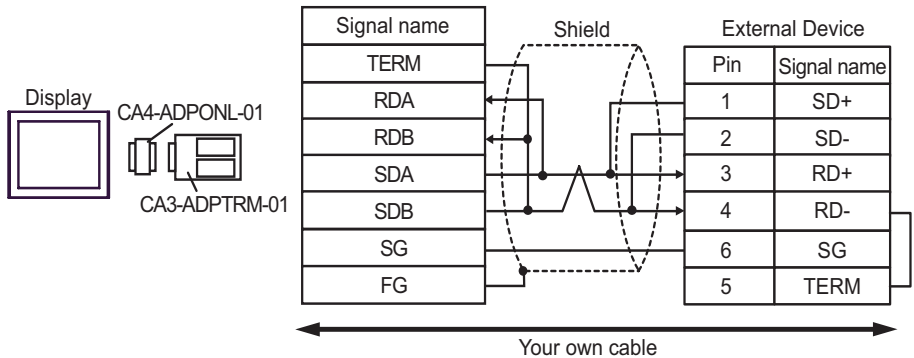

• 1:n Connection
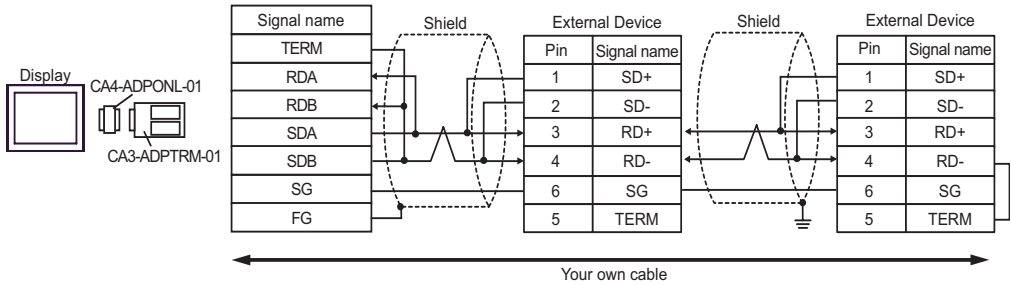

B.When your own cable is used

• 1:1 Connection

• 1:n Connection

C. When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable
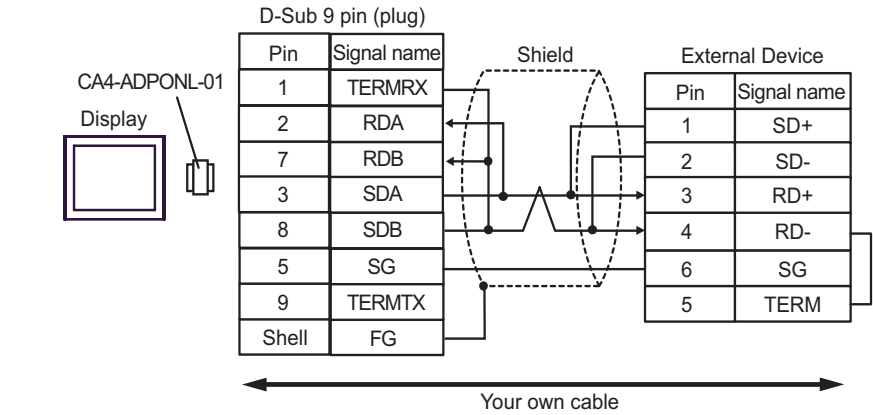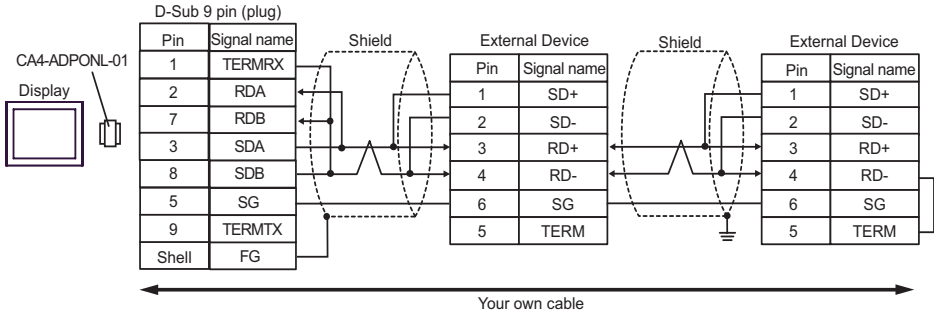
• 1:1 Connection

• 1:n Connection

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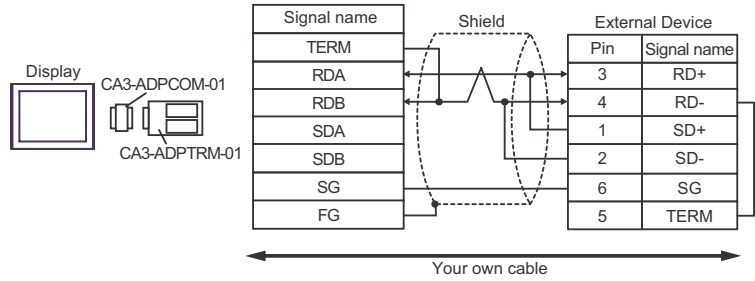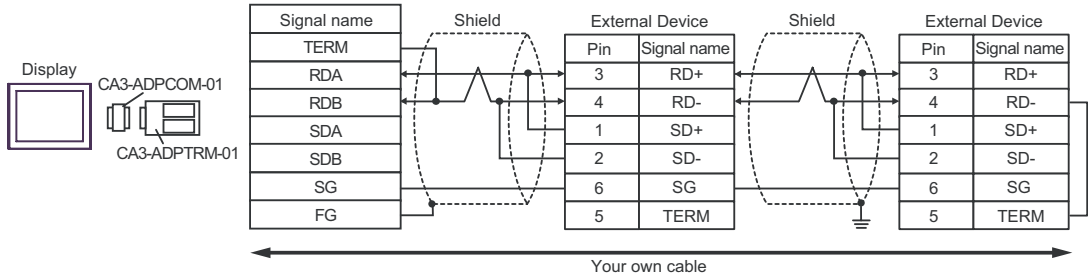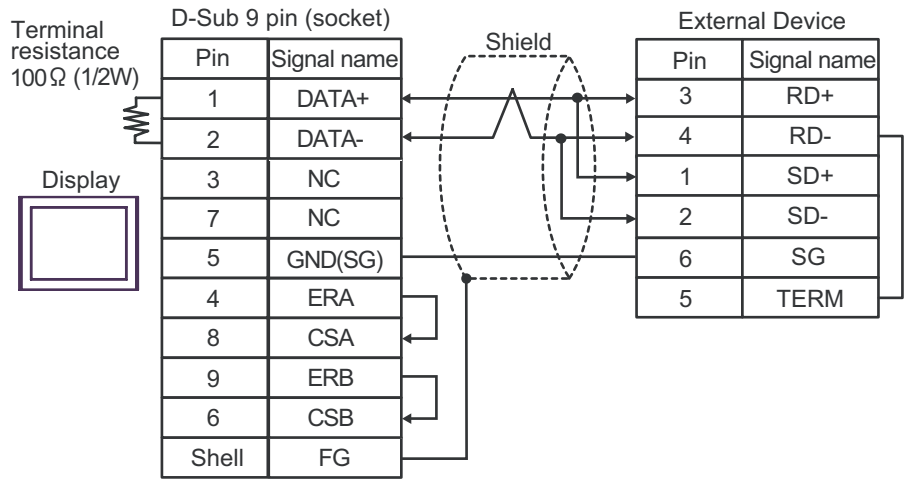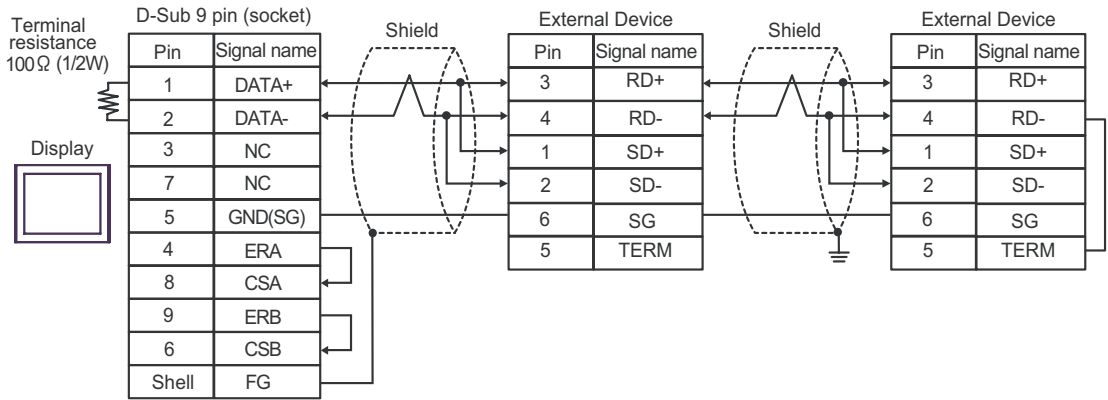
- 1:1 Connection

D-Sub 9 pin (plug)			External Device D-Sub 15 pin (plug)	
Pin	Signal name	Shield	Pin	Signal name
1	TERMRX			
2	RDA		13	SDP
7	RDB		12	SDN
3	SDA		11	RDP
8	SDB		10	RDN
5	SG		7	SG
9	TERMTX		9	RT
Shell	FG		14	RSP
			15	CSN

CA4-ADPONL-01
Display

Your own cable

- 1:n Connection

D-Sub 9 pin (plug)			External Device D-Sub 15 pin (plug)			External Device D-Sub 15 pin (plug)	
Pin	Signal name	Shield	Pin	Signal name	Shield	Pin	Signal name
1	TERMRX						
2	RDA		13	SDP		13	SDP
7	RDB		12	SDN		12	SDN
3	SDA		11	RDP		11	RDP
8	SDB		10	RDN		10	RDN
5	SG		7	SG		7	SG
9	TERMTX		9	RT		9	RT
Shell	FG		14	RSP		14	RSP
			15	CSN		15	CSN

CA4-ADPONL-01
Display

Your own cable

Cable Diagram 9

Display (Connection Port)		Cable	Remarks
GP[*1] (COM1) AGP-3302B (COM2)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 250m or less
	B	Your own cable	
GP[*2] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	
IPC[*3] (COM3)	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	F	Your own cable	

*1   All GP models except AGP-3302B

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

*3   Only COM3 of PS -3700A (Pentium®4-M) can be used. When use the COM3, set the SIO type of COM3 with Dip switch.
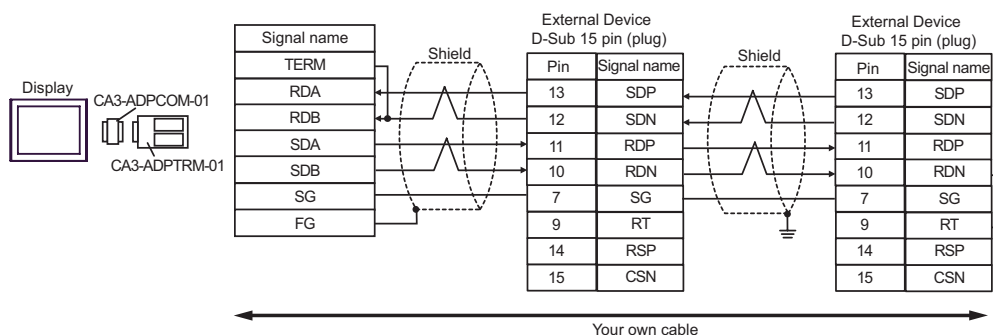☞Dip switch setting: RS-422/485 (2 wire) (page 93)

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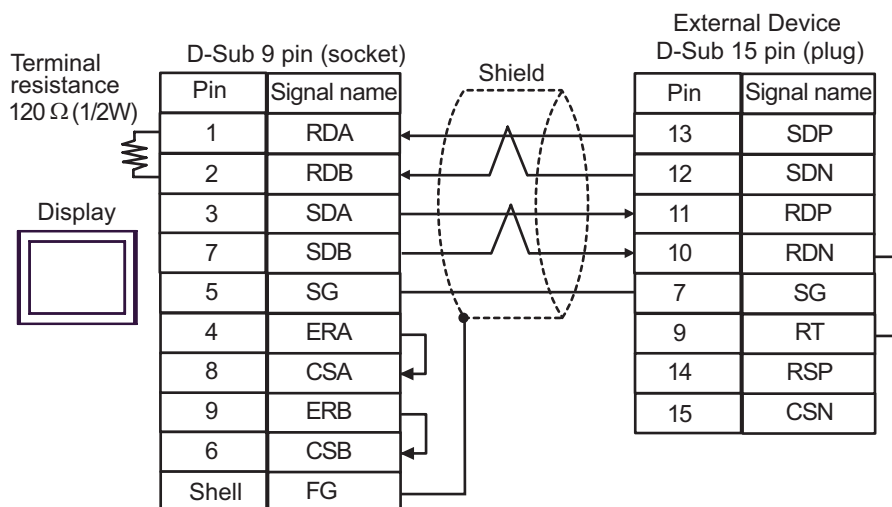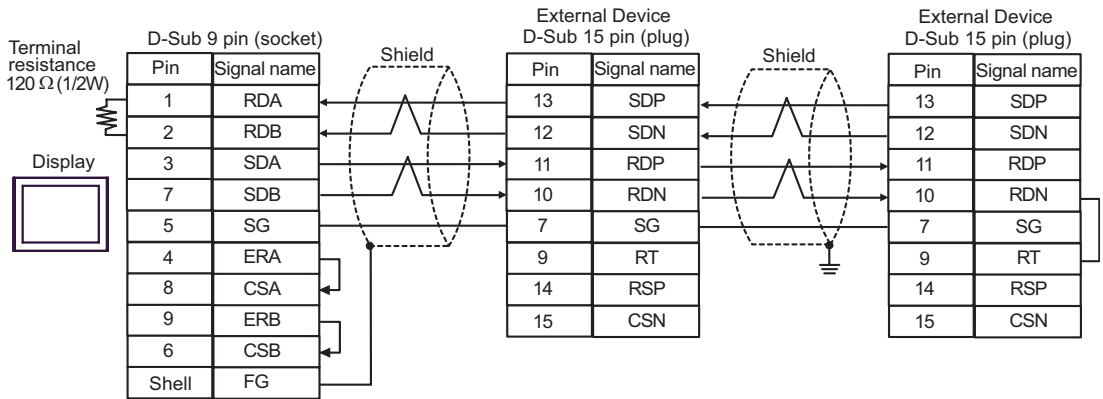
• 1:1 Connection

• 1:n Connection

B.When your own cable is used
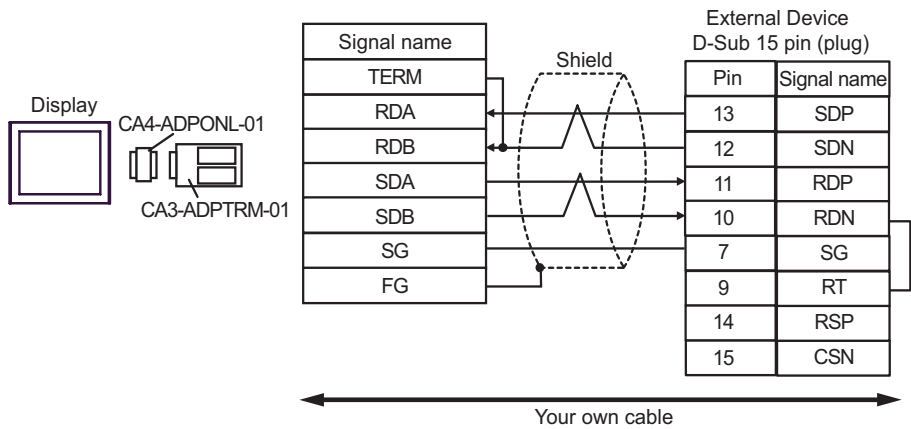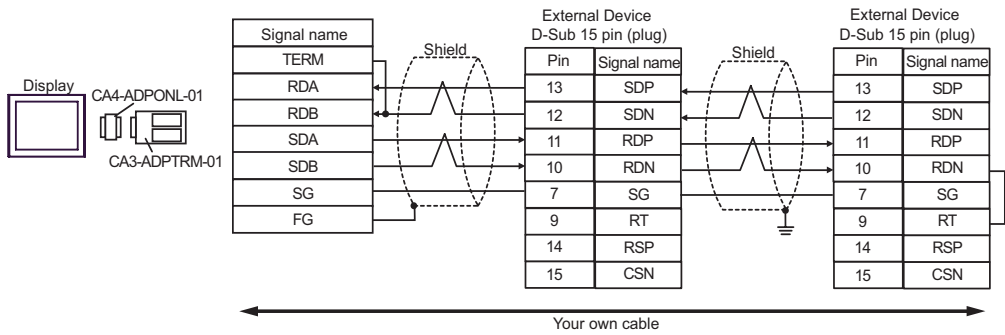
• 1:1 Connection

• 1:n Connection

C. When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable
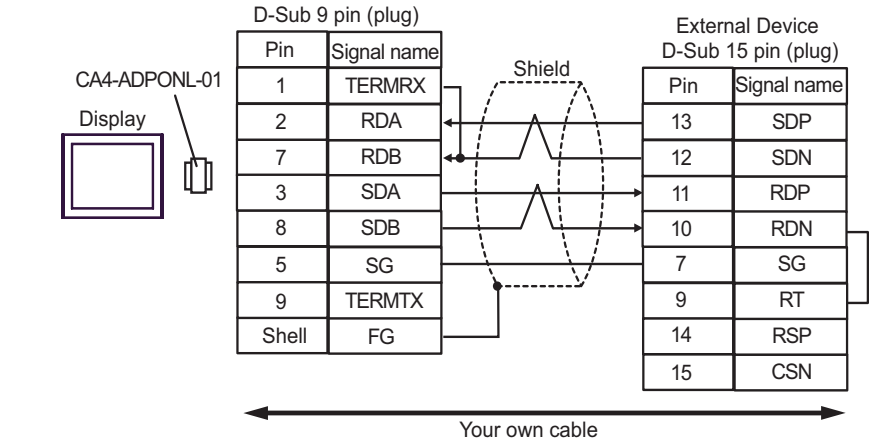
- 1:1 Connection

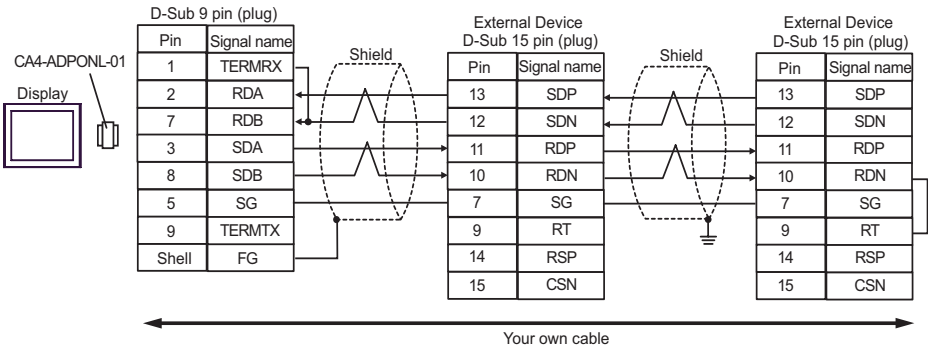| Signal name		Shield	External Device D-Sub 15 pin (plug)	
			Pin	Signal name
TERM			13	SDP
RDA			12	SDN
RDB			11	RDP
SDA			10	RDN
SDB			7	SG
SG			9	RT
FG			14	RSP
			15	CSN

Your own cable

- 1:n Connection

Signal name		Shield	External Device D-Sub 15 pin (plug)		Shield	External Device D-Sub 15 pin (plug)	
			Pin	Signal name		Pin	Signal name
TERM			13	SDP		13	SDP
RDA			12	SDN		12	SDN
RDB			11	RDP		11	RDP
SDA			10	RDN		10	RDN
SDB			7	SG		7	SG
SG			9	RT		9	RT
FG			14	RSP		14	RSP
			15	CSN		15	CSN

Your own cable

D. When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable

•   1:1 Connection

Your own cable

•   1:n Connection

Your own cable

E. When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable
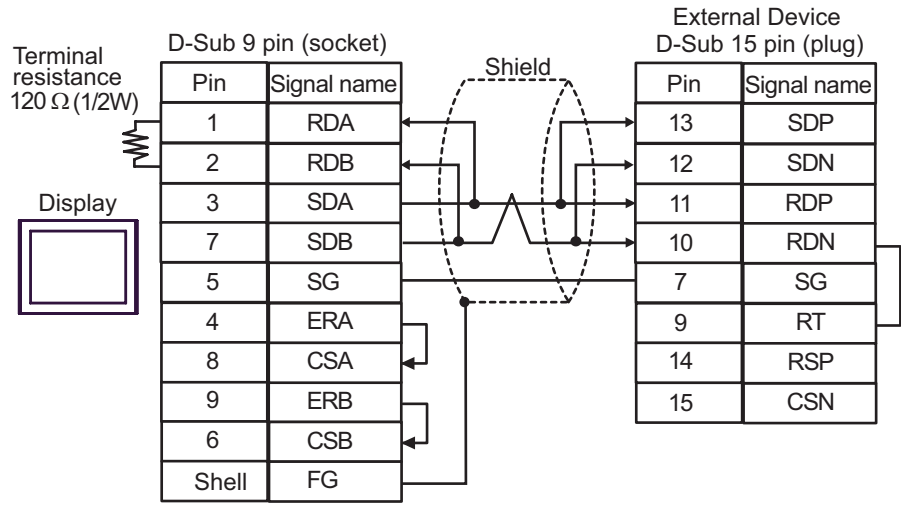
• 1:1 Connection

Your own cable

• 1:n Connection

Your own cable

F. When your own cable is used

• 1:1 Connection

• 1:n Connection

Cable Diagram 10

Display (Connection Port)		Cable	Remarks
GP[*1] (COM1) AGP-3302B (COM2) IPC[*2] (COM3)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 500m or less
	B	Your own cable	
GP[*3] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	

*1   All GP models except AGP-3302B

*2   Only COM3 of PS -3700A (Pentium®4-M) can be used. When use the COM3, set the SIO type of COM3 with Dip switch.
☞ Dip switch setting: RS-422/485 (4 wire) (page 93)

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

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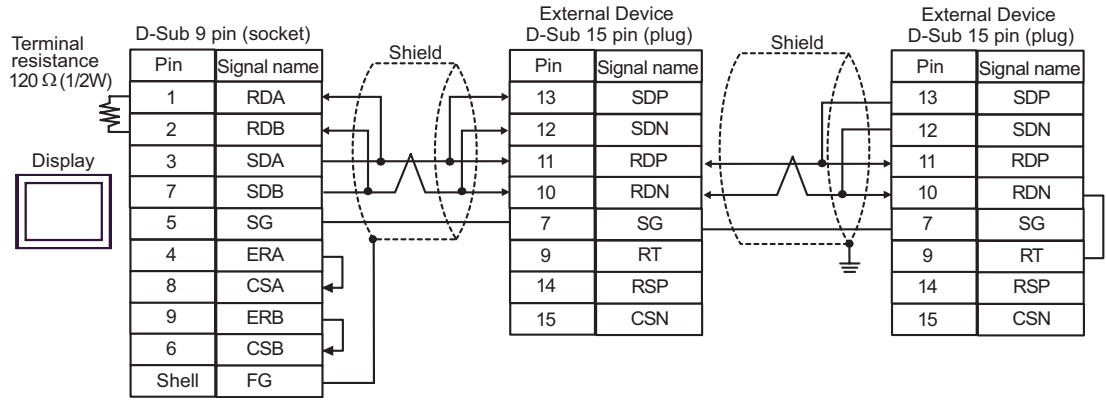
• 1:1 Connection

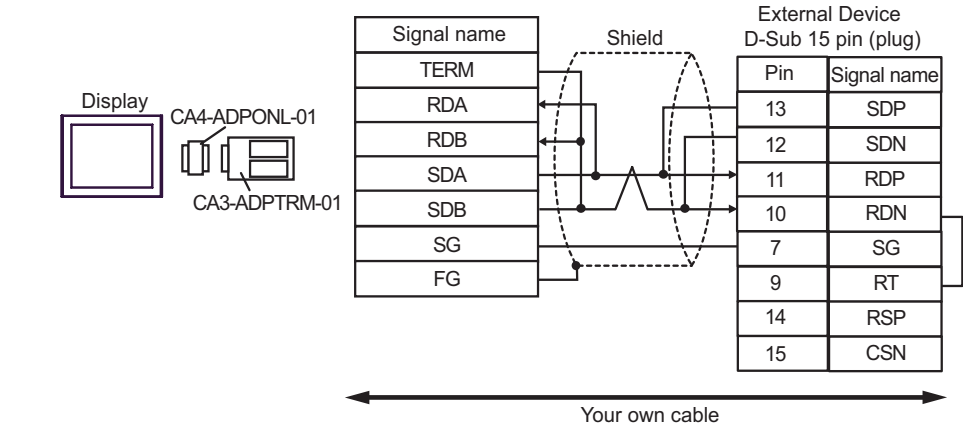
• 1:n Connection

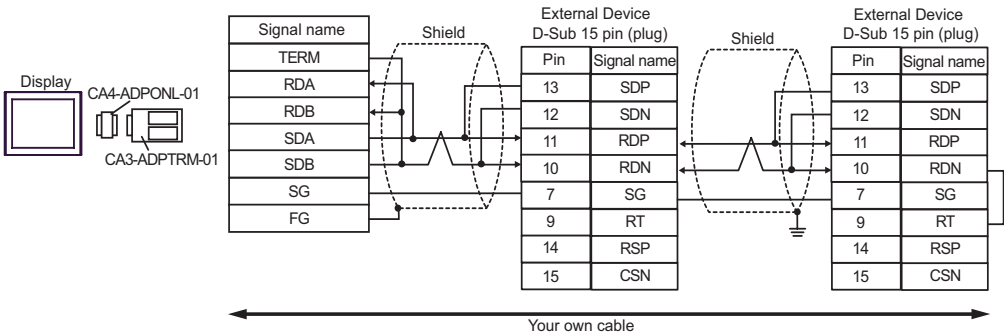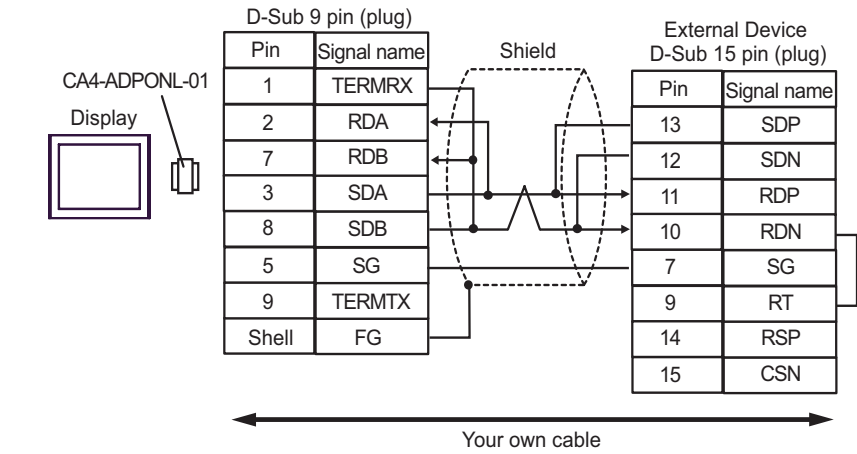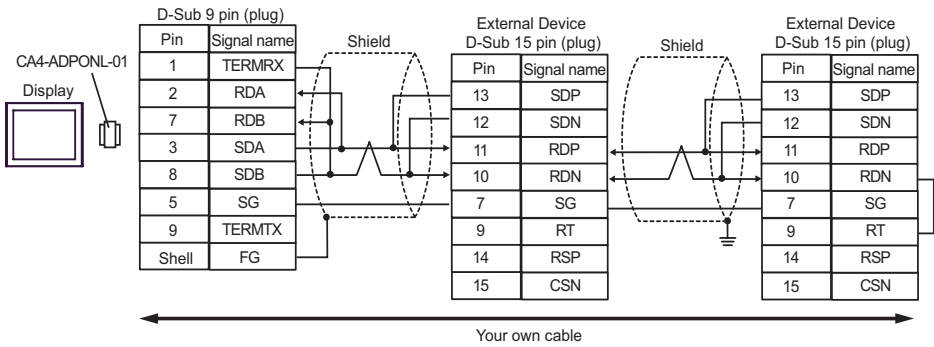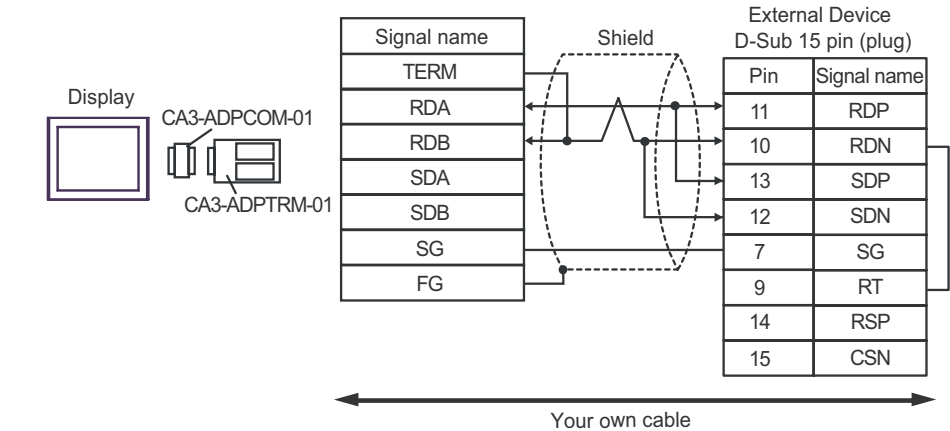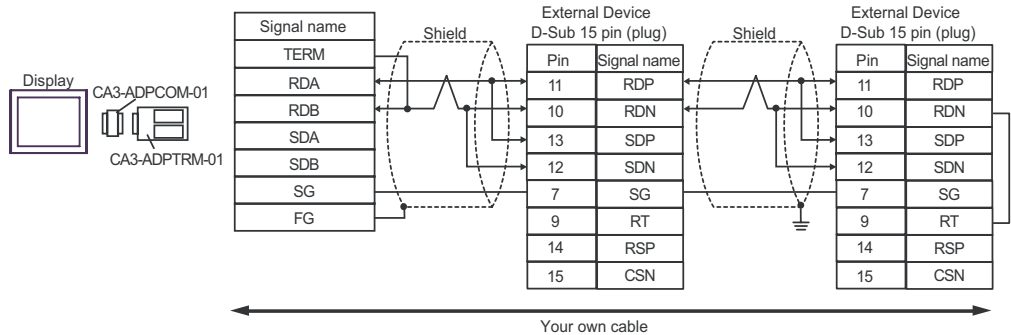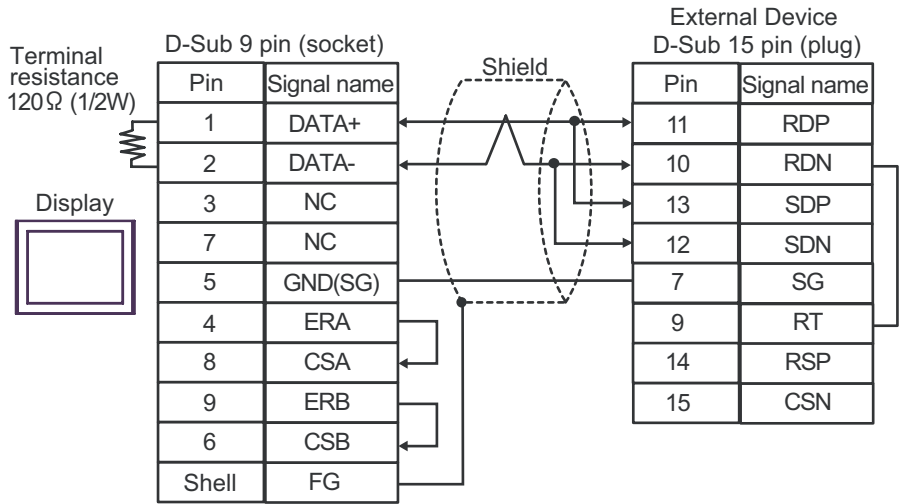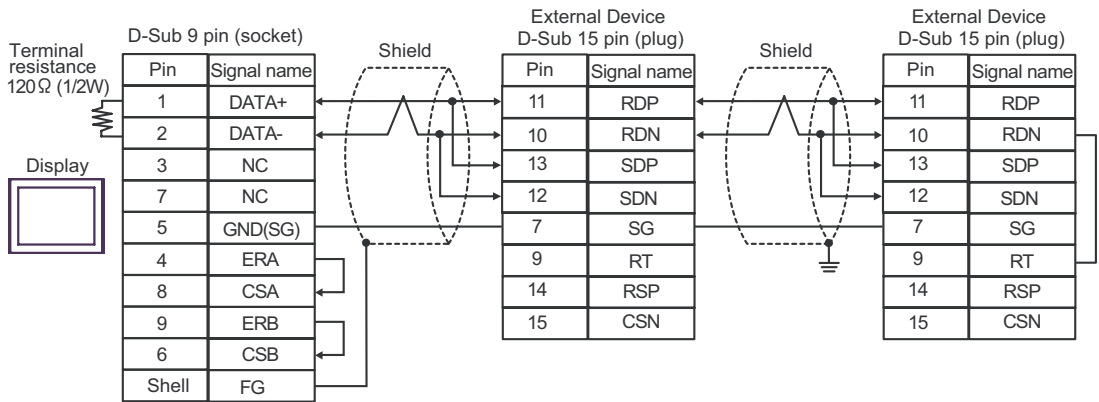B. When your own cable is used

• 1:1 Connection

- 1:n Connection

Terminal resistance 120 Ω (1/2W)

Display

D-Sub 9 pin (socket)

Pin	Signal name
1	RDA
2	RDB
3	SDA
7	SDB
5	SG
4	ERA
8	CSA
9	ERB
6	CSB
Shell	FG

Shield

External Device RJ-45 conncetor

Pin	Signal name
4	SDP
5	SDN
7	RDP
6	RDN
1	SG
8	TERM

Shield

External Device RJ-45 conncetor

Pin	Signal name
4	SDP
5	SDN
7	RDP
6	RDN
1	SG
8	TERM

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

- 1:1 Connection

Display CA4-ADPONL-01 CA3-ADPTRM-01

Signal name
TERM
RDA
RDB
SDA
SDB
SG
FG

Shield

External Device RJ-45 conncetor

Pin	Signal name
4	SDP
5	SDN
7	RDP
6	RDN
1	SG
8	TERM

Your own cable

- 1:n Connection

Display CA4-ADPONL-01 CA3-ADPTRM-01

Signal name
TERM
RDA
RDB
SDA
SDB
SG
FG

Shield

External Device RJ-45 conncetor

Pin	Signal name
4	SDP
5	SDN
7	RDP
6	RDN
1	SG
8	TERM

Shield

External Device RJ-45 conncetor

Pin	Signal name
4	SDP
5	SDN
7	RDP
6	RDN
1	SG
8	TERM

Your own cable

D.When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable

• 1:1 Connection

• 1:n Connection

Cable Diagram 11

Display (Connection Port)		Cable	Remarks
GP[*1] (COM1) AGP-3302B (COM2)	A	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	Cable length: 500m or less
	B	Your own cable	
GP[*2] (COM2)	C	Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	D	Online adapter by Pro-face CA4-ADPONL-01 + Your own cable	
IPC[*3] (COM3)	E	COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + Your own cable	
	F	Your own cable	

*1   All GP models except AGP-3302B

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

*3   Only COM3 of PS -3700A (Pentium®4-M) can be used. When use the COM3, set the SIO type of COM3 with Dip switch.
☞ Dip switch setting: RS-422/485 (2 wire) (page 93)

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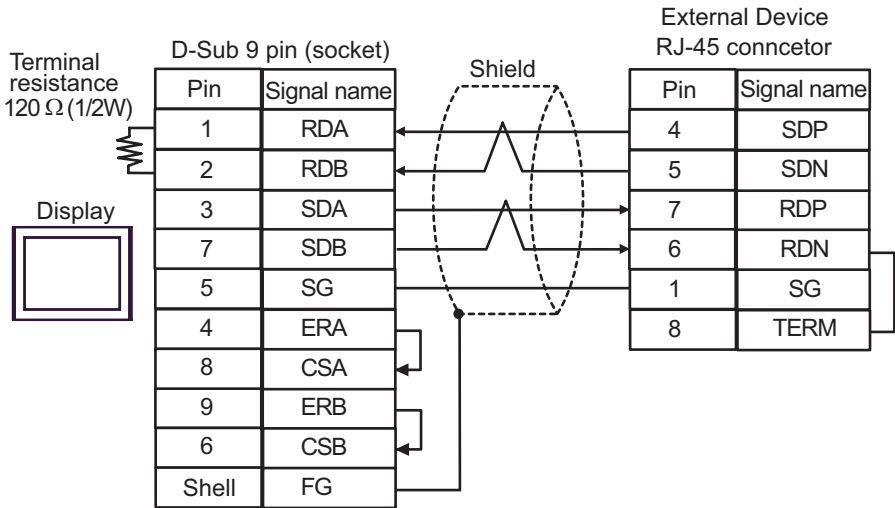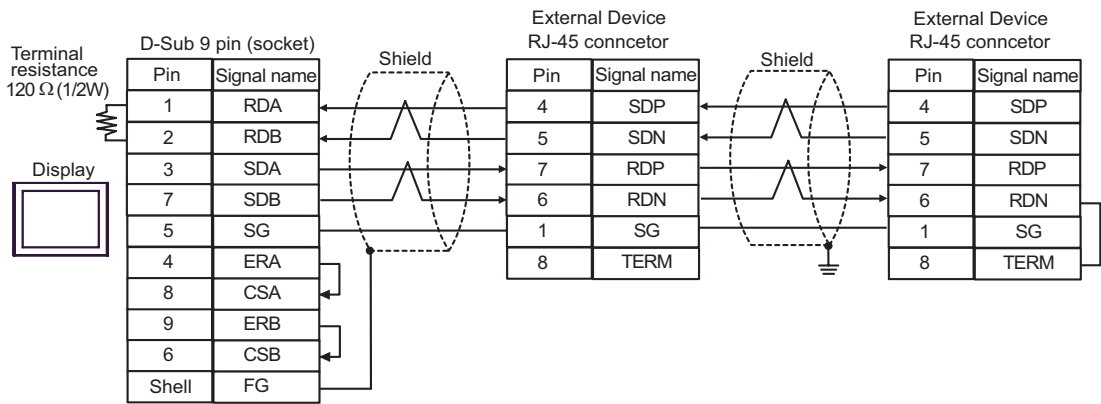
• 1:1 Connection

• 1:n Connection

B. When your own cable is used
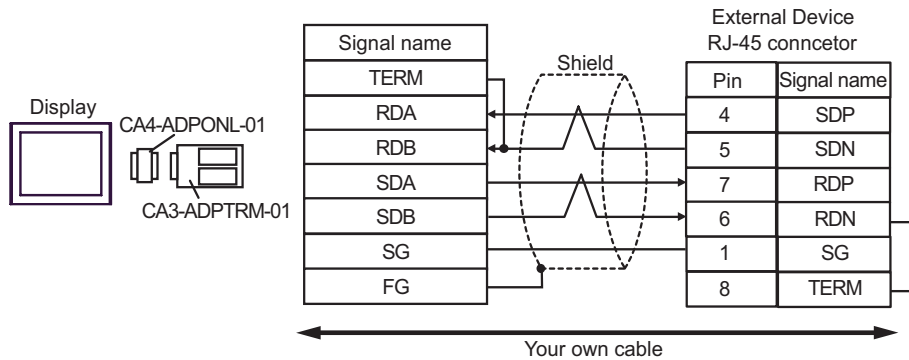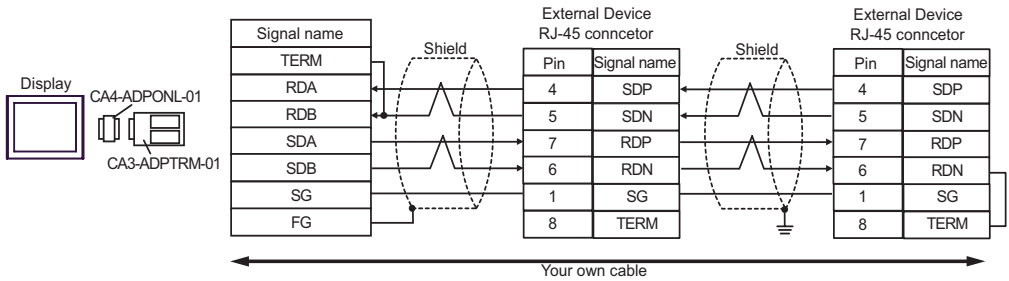
• 1:1 Connection

• 1:n Connection

C. When using the online adapter (CA4-ADPONL-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable
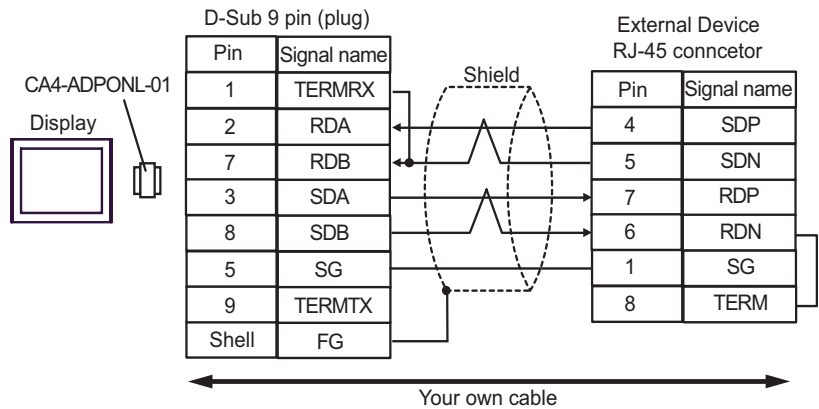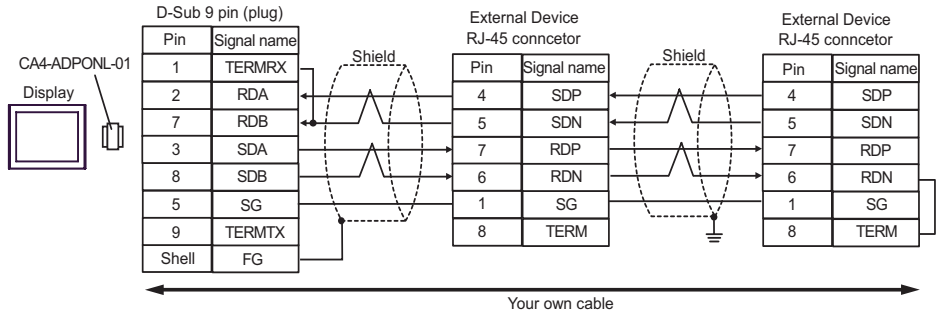
• 1:1 Connection

Your own cable

• 1:n Connection

Your own cable

D. When using the online adapter (CA4-ADPONL-01) by Pro-face and your own cable

- 1:1 Connection

Your own cable

- 1:n Connection

Your own cable

E. When using the COM port conversion adapter (CA3-ADPCOM-01), the terminal block conversion adapter (CA3-ADPTRM-01) by Pro-face and your own cable

• 1:1 Connection

• 1:n Connection

F. When your own cable is used

• 1:1 Connection

• 1:n Connection

6   Supported Device

Range of supported device address is shown in the table below.

6.1   H/EH-150/MICRO-EH Series

⬚⬚⬚⬚ This address can be specified as system data area.

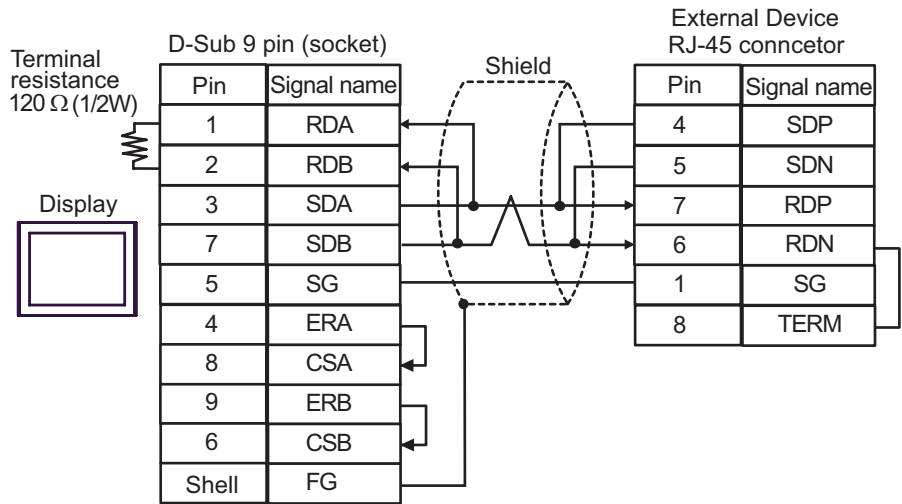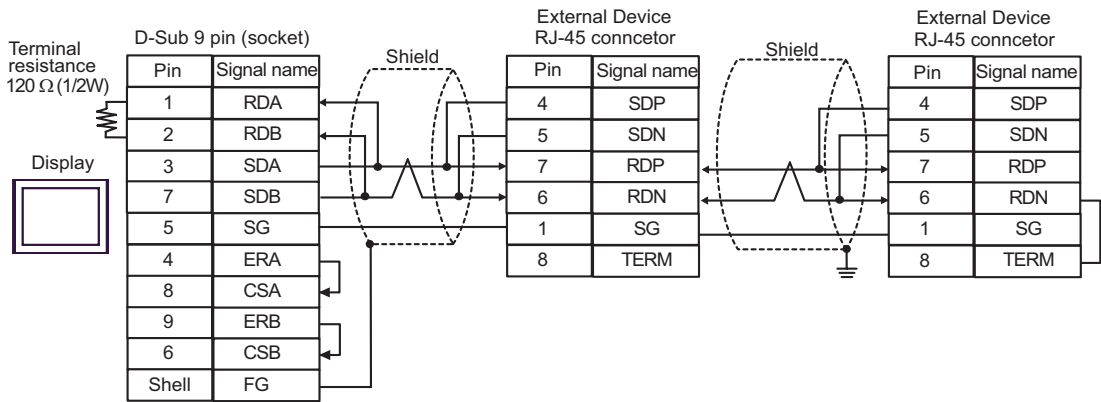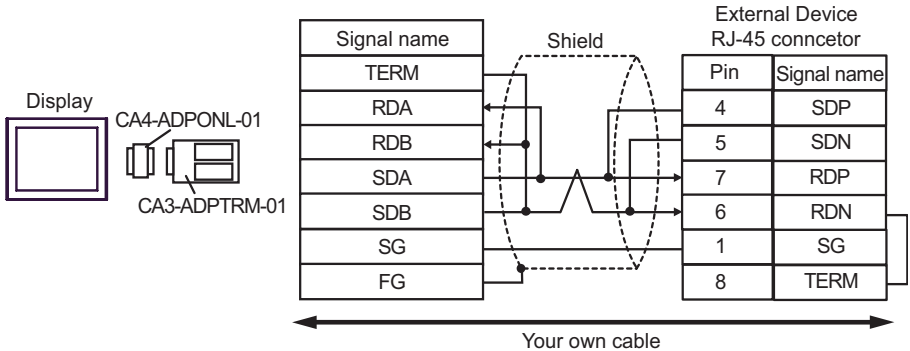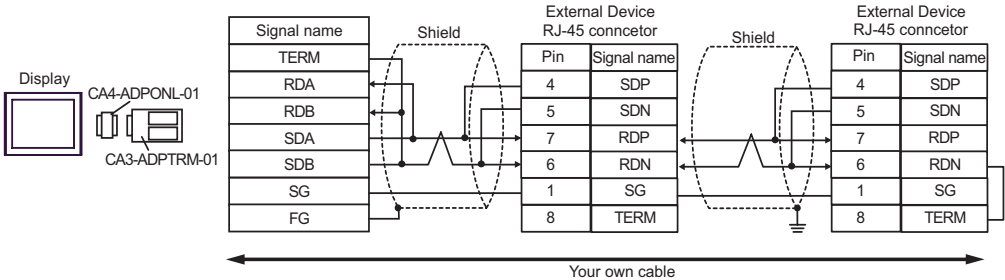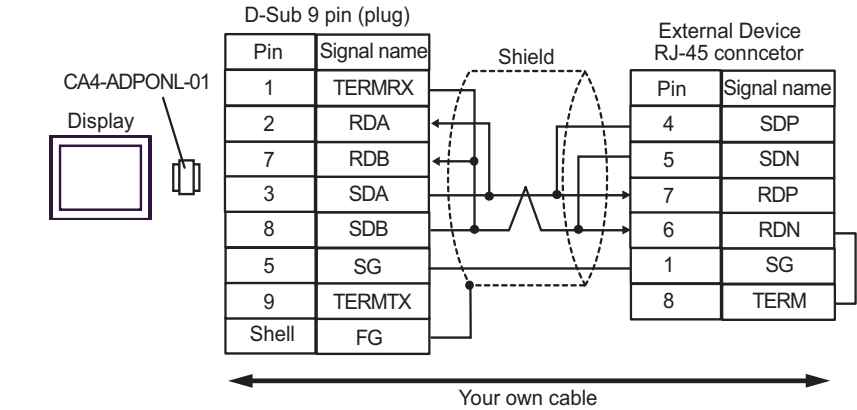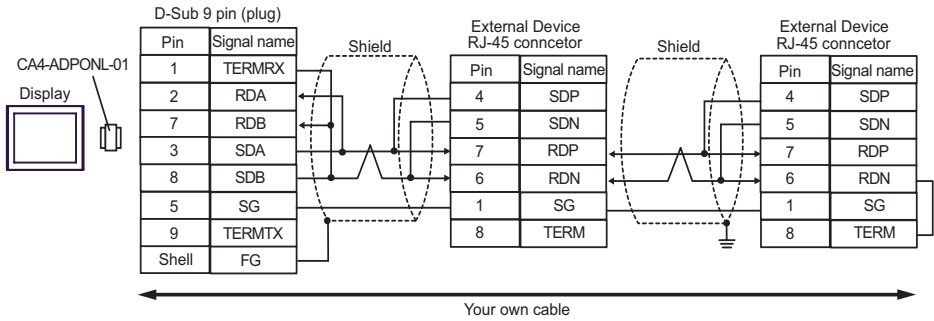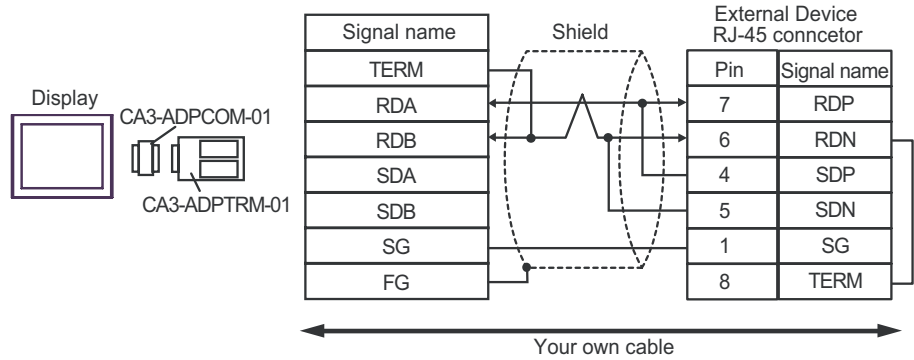| Device	Bit Address	Word Address	Double Word Address	32 bits	Remarks
External Input	X00000-X05A95	WX0000-WX05A7	DX0000-DX05A6		*1 *2
External Output	Y00000-Y05A95	WY0000-WY05A7	DY0000-DY05A6		*2
Remote Input Relay	X10000-X49995	WX1000-WX4997	DX1000-DX4996		*1 *3
Remote Output Relay	Y10000-Y49995	WY1000-WY4997	DY1000-DY4996		*3
Internal Output	R000-R7BF	-	-		
Special Internal Output	R7C0-R7FF	-	-		
Data Area	M0000-M3FFF	WM000-WM3FF	DM000-DM3FE		
First CPU Link	L00000-L03FFF	WL0000-WL03FF	DL0000-DL03FE		
Second CPU Link	L10000-L13FFF	WL1000-WL13FF	DL1000-DL13FE		
On Delay Timer	TD0000 -TD1023	-	-		
Single-shot Timer	SS0000-SS1023	-	-		
Watchdog Timer	WDT0000-WDT1023	-	-	⌐L / H⌐	
Mono Stable Timer	MS0000-MS1023	-	-		
Retentive Timer	TMR0000-TMR1023	-	-		
Up Counter	CU0000-CU2047	-	-		
Ring Counter	RCU0000-RCU2047	-	-		
Up-down Counter	CT0000-CT2047	-	-		
Timer Counter (Elapsed Value)	-	TC0000-TC2047	-		
Word Internal Output	-	WR0000-WRC3FF	DR0000-DRC3FE		Bit F
Special Word Internal Output	-	WRF000-WRF1FF	DRF000-DRF1FE		Bit F
Network Link Area	-	WN0000-WN7FFF	DN0000-DN7FFE		Bit F

*1   Write disable

---

*2   Specify as shown below.

(Example) External input unit No.1, Slot No.2, Internal Module Bit No.34

```
X 0 1 2 3 4
        └── Module Bit No. (00-95, decimal)
      └──── Slot No. (0-A, hexadecimal)
    └────── Unit No. (0-5)
```

(Example) External input unit No.1, Slot No.2, Internal Module Word No.34

```
W X 0 1 2 3
          └── Module Word No.(0-7)
        └──── Slot No.(0-A, hexadecimal)
      └────── Unit No.(0-5)
```

*3   Specify as shown below.

(Example) Remote External Input Remote Master No.1, Remote Slave No.2, Slot No.3, Internal Module Bit No.45

```
X 1 2 3 4 5
          └── Module Bit No.(0-95)
        └──── Slot No.(0-9)
      └────── Remote Slave No.(0-9)
    └──────── Remote Master No.(1-4)
```
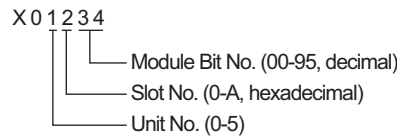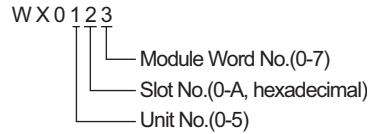
(Example) Remote External Input Remote Master No.1, Remote Slave No.2, Slot No.3, Internal Module Word No.4
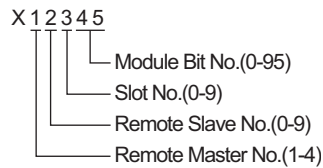
```
W X 1 2 3 4
          └── Module Word No.(0-7)
        └──── Slot No.(0-9)
      └────── Remote Slave No.(0-9)
    └──────── Remote Master No.(1-4)
```
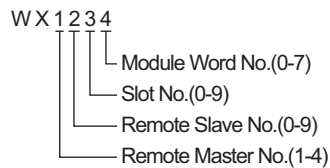
| NOTE | • Available type and range of device vary depending on CPU. Be sure to check them in each CPU manual before using. |

■ How to set address when using the CPU link

Set the check box of "Use CPU Link" to ON.

When using CPU Link, loop No. and unit No. are added to the address.
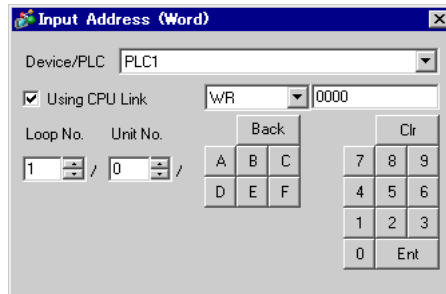
(Example) Loop No.1, Unit No.2
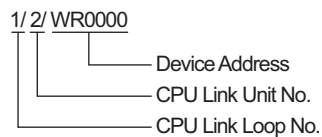
NOTE

• Please refer to the GP-Pro EX Reference Manual for system data area.

Cf.   GP-Pro EXReference 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"

6.2 Web Controller Series

This address can be specified as system data area.

Device	Bit Address	Word Address	Double Word Address	32 bit	Remarks
External Input	X0000-X0012 X1000-X1015 X2000-X2015 X3000-X3015 X4000-X4015	WX030-WX031 WX100-WX104 WX200-WX204 WX300-WX304 WX400-WX404	DX030 DX100-DX103 DX200-DX203 DX300-DX303 DX400-DX403	⌐L / H⌐	*1
External Output	Y0100-Y0109 Y1016-Y1031 Y2016-Y2031 Y3016-Y3031 Y4016-Y4031	WY40 WY105-WY107 WY205-WY207 WY305-WY307 WY405-WY407	DY105-DY106 DY205-DY206 DY305-DY306 DY405-DY406		
Internal Output	R000-R7BF	-	-		
Special Internal Output	R7C0-R7FF	-	-		
Data Area	M0000-M3FFF	WM000-WM3FF	DM000-DM3FE		
On Delay Timer	TD000-TD255	-	-		*2
Single-shot Timer	SS000-SS255	-	-		*2
Up Counter	CU000-CU255	-	-		*2
Up-down Counter	CT000-CT255	-	-		*2*3
Timer Counter (Elapsed Value)	-	TC000-TC255	-		
Word Internal Output	-	WR0000-WRC3FF	DR0000-DRC3FE		*4 [Bit F]
Word Special Internal Output		WRF000-WRF1FF	DRF000-DRF1FE		[Bit F]

*1   Write disable

*2   Each timer or counter needs to be defined on the ladder program.

*3   Both the Up-down counter Up input and Down input are defined by CT, however, the device names of the External Device are CTU, CTDrespectively.

   To access CTU, define the corresponding address as CTU on the ladder program of the External Device. Similarly, to access CTD, define the corresponding address as CTD on the ladder program of the External Device.

*4   In case of EH-WD10DR, the address range is "WR0000-WR3FFF", "DR0000-DR3FFE".

NOTE
- Please refer to the GP-Pro EX Reference Manual for system data area.
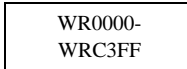
   Cf.   GP-Pro EXReference Manual "Appendix 1.4 LS Area (only for direct access method)"

- Please refer to the precautions on manual notation for icons in the table.

   ☞ "Manual Symbols and Terminology"

6.3 EHV Series

 This address can be specified as system data area.

Device	Bit Address	Word Address	Double Word Address	32 bits	Remarks
External Input	X00000-X05A95	WX0000-WX05A7	DX0000-DX05A6		*1 *2
External Output	Y00000-Y05A95	WY0000-WY05A7	DY0000-DY05A6		*2
Remote Input Relay	X10000-X45A95	WX1000-WX45A7	DX1000-DX45A6		*1 *3
Remote Output Relay	Y10000-Y45A95	WY1000-WY45A7	DY1000-DY45A6		*3
Extension External Input	EX00000-EX5A7FF	WEX0000-WEX5A7F	DEX0000-DEX5A7E		*1
Extension External Output	EY00000-EY5A7FF	WEY0000-WEY5A7F	DEY0000-DEY5A7E		
Internal Output	R000-R7BF	-	-		
Special Internal Output	R7C0-RFFF	-	-		
Data Area	M00000-M7FFFF	WM0000-WM7FFF	DM0000-DM7FFE		
First CPU Link	L00000-L03FFF	WL0000-WL03FF	DL0000-DL03FE		
Second CPU Link	L10000-L13FFF	WL1000-WL13FF	DL1000-DL13FE		
Third CPU Link	L20000-L23FFF	WL2000-WL23FF	DL2000-DL23FE	⌐L / H⌐	
Fourth CPU Link	L30000-L33FFF	WL3000-WL33FF	DL3000-DL33FE		
Fifth CPU Link	L40000-L43FFF	WL4000-WL43FF	DL4000-DL43FE		
Sixth CPU Link	L50000-L53FFF	WL5000-WL53FF	DL5000-DL53FE		
Seventh CPU Link	L60000-L63FFF	WL6000-WL63FF	DL6000-DL63FE		
Eighth CPU Link	L70000-L73FFF	WL7000-WL73FF	DL7000-DL73FE		
On Delay Timer	TD0000-TD2559	-	-		
Off Delay Timer	TDN0000-TDN2559	-	-		
Single-shot Timer	SS0000-SS2559	-	-		
Watchdog Timer	WDT0000-WDT2559	-	-		
Mono Stable Timer	MS0000-MS2559	-	-		
Retentive Timer	TMR0000-TMR2559	-	-		
Up-down Counter	CT000-CT511	-	-		
Up Counter	CU000-CU511	-	-		

Device	Bit Address	Word Address	Double Word Address	32 bits	Remarks
Link Counter	RCU000-RCU511	-	-		
Timer Counter (Elapsed Value)	-	TC0000-TC2559	-		
Word Internal Output	WR00000-WREFFFF	WR0000-WREFFF	DR0000-DREFFE	[L / H]	
Special Word Internal Output	WRF000.0-WRFFFF.F	WRF000-WRFFFF	DRF000-DRFFFE		
Data Area	WN00000.0-WN1FFFF.F	WN00000-WN1FFFF	DN00000-DN1FFFE		

*1   Write disable

*2   Specify as shown below.

   (Example) External input unit No.1, Slot No.2, Internal Module Bit No.34


```
X 0 1 2 3 4
          └── Module Bit No.(00-95, decimal)
        └──── Slot No.(0-A, hexadecimal)
      └────── Unit No.(0-5)
```

   (Example) External input unit No.1, Slot No.2, Internal Module Word No.3

```
W X 0 1 2 3
          └── Module Word No.(0-7)
        └──── Slot No.(0-A, hexadecimal)
      └────── Unit No.(0-5)
```

*3   Specify as shown below.

   (Example) Remote External Input Remote Master No.1, Remote Slave No.2, Slot No.3, Internal Module Bit No.45

```
X 1 2 3 4 5
          └── Module Bit No.(0-95, decimal)
        └──── Slot No.(0-A, hexadecimal)
      └────── Remote Slave No.(0-5)
    └──────── Remote Master No.(1-4)
```
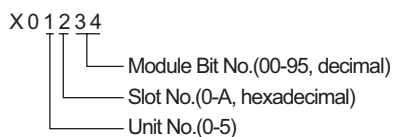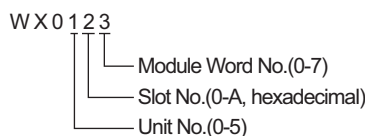
   (Example) Remote External Input Remote Master No.1, Remote Slave No.2, Slot No.3, Internal Module Word No.4
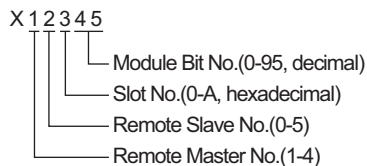
```
W X 1 2 3 4
          └── Module Word No.(0-7)
        └──── Slot No.(0-A, hexadecimal)
      └────── Remote Slave No.(0-5)
    └──────── Remote Master No.(1-4)
```
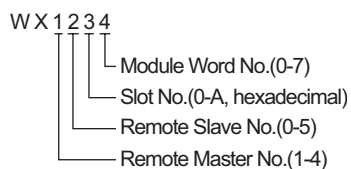
■ When using CPU Link

Set the check box of "Use CPU Link" to ON.

When using CPU Link, loop No. and unit No. are added to the address.
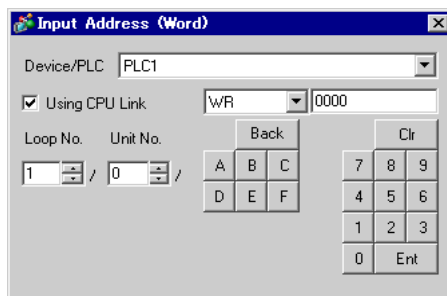
(Example) Loop No.1, Unit No.2
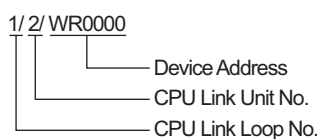
NOTE

• Please refer to the GP-Pro EX Reference Manual for system data area.

    Cf.   GP-Pro EXReference 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 Type & Address" for the address type in data displays.

7.1   H/EH-150/MICRO-EH Series

Device	Device Name	Device Code (HEX)	Address Code
External Input	X	80	Word Address
	WX		Word Address
	DX	20	Word Address
External Output	Y	81	Word Address
	WY		Word Address
	DY	21	Word Address
Data Area	M	82	Word Address
	WM		Word Address
	DM	22	Word Address
CPU Link	L	83	Word Address
	WL		Word Address
	DL	23	Word Address
Timer Counter (Elapsed Value)	TC	60	Word Address
Word Internal Output	WR	00	Word Address
	DR	24	Word Address
Network Link Area	WN	01	Word Address
	DN	25	Word Address

7.2　　　Web Controller Series

Device	Device Name	Device Code (HEX)	Address Code
External Input	X	80	Word Address
	WX		Word Address
	DX	20	Word Address
External Output	Y	81	Word Address
	WY		Word Address
	DY	21	Word Address
Data Area	M	82	Word Address
	WM		Word Address
	DM	22	Word Address
Timer Counter (Elapsed Value)	TC	60	Word Address
Word Internal Output Word Special Internal Output	WR	00	Word Address
	DR	24	Word Address

7.3 EHV Series

Device	Device Name	Device Code (HEX)	Address Code
External Input	X	80	Word Address
	WX		Word Address
	DX	20	Word Address
External Output	Y	81	Word Address
	WY		Word Address
	DY	21	Word Address
Extension External Input	EX	84	Word Address
	WEX		Word Address
	DEX	26	Word Address
Extension External Output	EY	85	Word Address
	WEY		Word Address
	DEY	27	Word Address
Data Area	M	82	Word Address
	WM		Word Address
	DM	22	Word Address
CPU Link	L	83	Word Address
	WL		Word Address
	DL	23	Word Address
Word Internal Output	WR	00	Word Address
	DR	24	Word Address
Data Area	WN	01	Word Address
	DN	25	Word Address
Timer Counter (Elapsed Value)	TC	60	Word Address

8   Error Messages

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

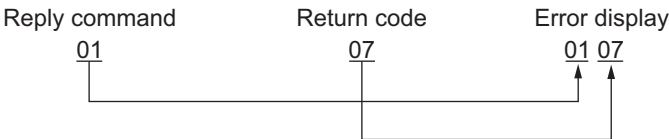| Item	Description
No.	Error No.
Device Name	Name of the External Device where error occurs. Device name is a title of the External Device set with GP-Pro EX.((Initial value[PLC1])
Error Message	Displays messages related to the error which occurs.
Error Occurrence Area	Displays IP address or device address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

Display Examples of Error Messages

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

NOTE
• Please refer to the manual of the 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.

■ Driver-Specific Error Codes

Error codes are sent as separated 2 bytes codes The Display displays the error number using 1-byte code.
Example:

Reply command	Return code	Error display
01	07	01 07

Error Code	Description
01, 05	The requested number of points is beyond the designated range.
01, 06	Designated device does not exist.
01, 07	Designated device address is beyond the range.

NOTE
• Please refer to the manual of the External Device for more detail of received error codes.