A Series Computer Link Driver

Introduction

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

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

| 1 | System Configuration
This section shows the types of External Devices which can be connected and SIO type. |)"1 System Configuration" (page 3) |

| 2 | Selection of External Device
Select a model (series) of the External Device to be connected and connection method. |)"2 Selection of External Device" (page 9) |

| 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 10) |

| 4 | Setup Items
This section describes communication setup items on the Display.
Set communication settings of the Display with GP-Pro Ex or in offline mode. |)"4 Setup Items" (page 26) |

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

Operation

1   System Configuration

The system configuration in the case when the External Device of Mitsubishi Electric Corp. and the Display are connected is shown.

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
MELSEC AnA Series	A2ACPU A2ACPU-S1 A3ACPU A2UCPU A2UCPU-S1 A3UCPU A4UCPU	AJ71C24-S6 AJ71C24-S8	RS232C	Setting Example 1 (page 10)	Cable Diagram 1 (page 31)
			RS422/485 (4wire)	Setting Example 5 (page 18)	Cable Diagram 2 (page 33)
			RS422/ 485(4Wire) Multilink	Setting Example 5 (page 18)	Cable Diagram 4 (page 41)
		AJ71UC24	RS232C	Setting Example 2 (page 12)	Cable Diagram 1 (page 31)
			RS422/485 (4wire)	Setting Example 6 (page 20)	Cable Diagram 2 (page 33)
			RS422/ 485(4Wire) Multilink	Setting Example 6 (page 20)	Cable Diagram 4 (page 41)
	A2USCPU A2USHCPU-S1	A1SJ71C24-R2 A1SJ71UC24-R2	RS232C	Setting Example 3 (page 14)	Cable Diagram 3 (page 39)
		A1SJ71C24-R4 A1SJ71UC24-R4	RS422/485 (4wire)	Setting Example 7 (page 22)	Cable Diagram 2 (page 33)
			RS422/ 485(4Wire) Multilink	Setting Example 7 (page 22)	Cable Diagram 4 (page 41)

| Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
MELSEC AnN Series	A1NCPU A2NCPU A2NCPU-S1 A3NCPU	AJ71C24 AJ71C24-S3 AJ71C24-S6 AJ71C24-S8	RS232C	Setting Example 1 (page 10)	Cable Diagram 1 (page 31)
			RS422/485 (4wire)	Setting Example 5 (page 18)	Cable Diagram 2 (page 33)
			RS422/485(4Wire) Multilink	Setting Example 5 (page 18)	Cable Diagram 4 (page 41)
		AJ71UC24	RS232C	Setting Example 2 (page 12)	Cable Diagram 1 (page 31)
			RS422/485 (4wire)	Setting Example 6 (page 20)	Cable Diagram 2 (page 33)
			RS422/485(4Wire) Multilink	Setting Example 6 (page 20)	Cable Diagram 4 (page 41)
	A1SCPU A1SJCPU A1SJHCPU A1SHCPU A2SHCPU	A1SJ71C24-R2 A1SJ71UC24-R2	RS232C	Setting Example 3 (page 14)	Cable Diagram 3 (page 39)
		A1SJ71C24-R4 A1SJ71UC24-R4	RS422/485 (4wire)	Setting Example 7 (page 22)	Cable Diagram 2 (page 33)
			RS422/485(4Wire) Multilink	Setting Example 7 (page 22)	Cable Diagram 4 (page 41)
	A0J2CPU A0J2HCPU	A0J2-C214-S1	RS422/485 (4wire)	Setting Example 8 (page 24)	Cable Diagram 2 (page 33)
			RS422/485(4Wire) Multilink	Setting Example 8 (page 24)	Cable Diagram 4 (page 41)
	A2CCPUC24	Link port on CPU	RS232C	Setting Example 4 (page 16)	Cable Diagram 3 (page 39)
MELSEC QnA Series	Q2ACPU Q2ACPU-S1 Q3ACPU Q4ACPU Q4ARCPU	AJ71UC24	RS232C	Setting Example 2 (page 12)	Cable Diagram 1 (page 31)
			RS422/485 (4wire)	Setting Example 6 (page 20)	Cable Diagram 2 (page 33)
			RS422/485(4Wire) Multilink	Setting Example 6 (page 20)	Cable Diagram 4 (page 41)
	Q2ASCPU Q2ASCPU-S1 Q2ASHCPU Q2ASHCPU-S1	A1SJ71UC24-R2 A1SJ71UC24-PRF	RS232C	Setting Example 3 (page 14)	Cable Diagram 3 (page 39)
		A1SJ71UC24-R4	RS422/485 (4wire)	Setting Example 7 (page 22)	Cable Diagram 2 (page 33)
			RS422/485(4Wire) Multilink	Setting Example 7 (page 22)	Cable Diagram 4 (page 41)

Series	CPU	Link I/F	SIO Type	Setting Example	Cable Diagram
MELSEC Q Series	Q02CPU-A Q02HCPU-A Q06HCPU-A	A1SJ71UC24-R2 A1SJ71UC24-PRF	RS232C	Setting Example 3 (page 14)	Cable Diagram 3 (page 39)
		A1SJ71UC24-R4	RS422/485 (4wire)	Setting Example 7 (page 22)	Cable Diagram 2 (page 33)
			RS422/ 485(4Wire) Multilink	Setting Example 7 (page 22)	Cable Diagram 4 (page 41)

■ Connection Configuration

• 1:1 Connection

• 1:n Connection
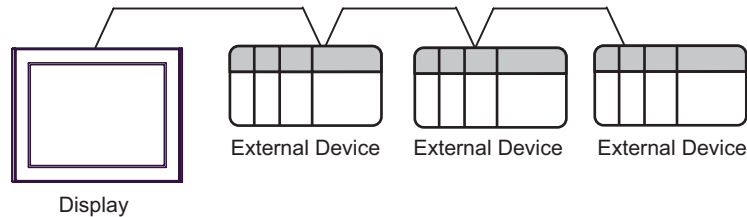
• 1:n Connection (when communicating via network)

You can access other stations via MELSECNET/10, MELSECNET(II), MELSECNET/B.
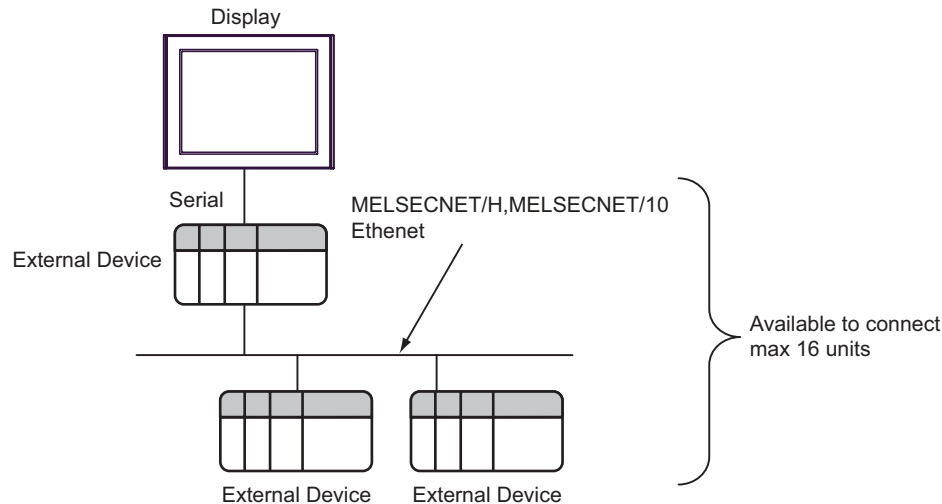
• n:1 Connection (Multilink connection)
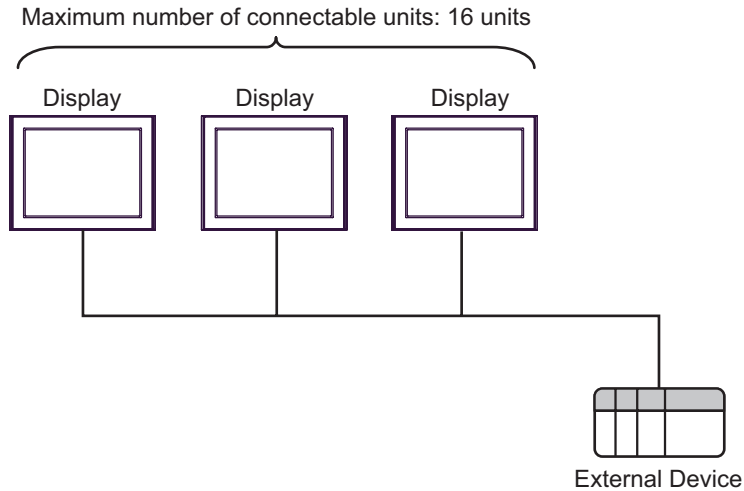
Maximum number of connectable units: 16 units

Display   Display   Display

External Device

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

• n:m Connection (Multilink connection)
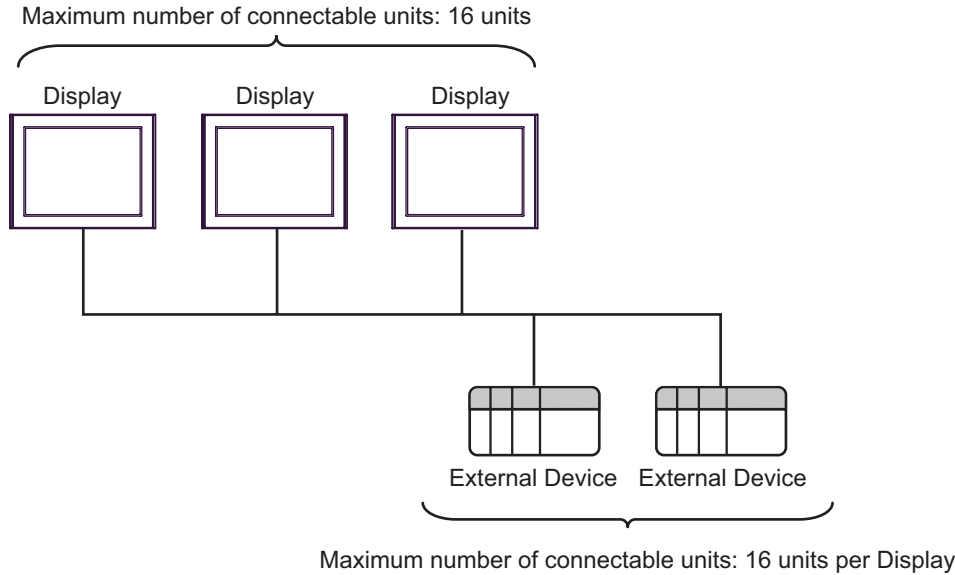
Maximum number of connectable units: 16 units

Display   Display   Display

External Device   External Device

Maximum number of connectable units: 16 units per Display

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

■ IPC COM Port

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

Usable port

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

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

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

*3   When making communication between an External Device and COM port on the Expansion slot, only RS-232C is supported. However, ER (DTR/CTS) control cannot be executed because of the specification of COM port.
For connection with External Device, use user-created cables and disable Pin Nos. 1, 4, 6 and 9.
Please refer to the IPC manual for details of pin layout.

DIP switch setting: RS-232C

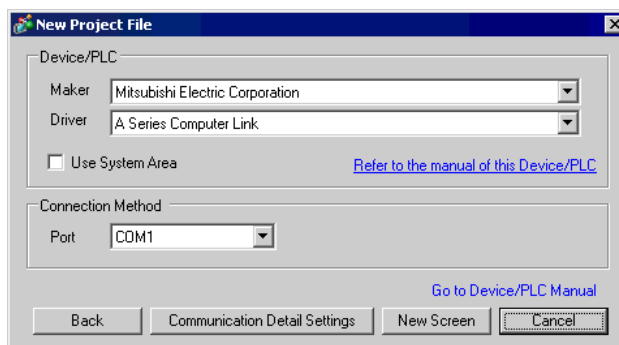| DIP switch	Setting	Description
1	OFF[*1]	Reserved (always OFF)
2	OFF	SIO type: RS-232C
3	OFF	
4	OFF	Output mode of SD (TXD) data: Always output
5	OFF	Terminal resistance (220Ω) insertion to SD (TXD): None
6	OFF	Terminal resistance (220Ω) insertion to RD (RXD): None
7	OFF	Short-circuit of SDA (TXA)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

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

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

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

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

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

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

2 Selection of External Device

Select the External Device to be connected to the Display.

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

3 Example of Communication Setting

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

When you use the A Series, use GP-Pro EX and the ladder software to set as below.

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 External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

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

■ Setting of External Device

Use the DIP switch of the Computer Link Unit for setting. Please refer to the manual of the External Device for more details.

◆ Mode Setting Rotary Switch

Settings	Setup Description
4	Protocol mode in Form 4

◆ Communication Setting DIP Switch

DIP Switch	Settings	Setup Description
SW11	OFF	Main channel setting
SW12	OFF	Data bit setting
SW13	OFF	Transmission speed setting
SW14	ON	
SW15	ON	
SW16	ON	Parity bit setting whether enable or disable
SW17	ON	Parity setting whether Even or Odd
SW18	ON	Stop bit setting
SW21	ON	Sum check setting whether enable or disable
SW22	ON	Write setting during RUN whether enable or disable
SW23	OFF	Termination resistance on the sending side whether exist or not exist
SW24	OFF	Termination resistance on the receiving side whether exist or not exist

◆ Station Setting Rotary Switch

Rotary Switch	Settings	Setup Description
X10	0	Station No. setting
X1	0	

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/PLC 1	

Summary   Change Device/PLC

Maker　Mitsubishi Electric Corporation　　　Series　A Series Computer Link　　　Port　COM1

Text Data Mode　　2　Change

Communication Settings

SIO Type　　　　　⊙ RS232C　　　○ RS422/485(2wire)　　　○ RS422/485(4wire)

Speed　　　　　　19200

Data Length　　　⊙ 7　　　　○ 8

Parity　　　　　　○ NONE　　⊙ EVEN　　　○ ODD

Stop Bit　　　　　○ 1　　　　⊙ 2

Flow Control　　　○ NONE　　⊙ ER(DTR/CTS)　　○ XON/XOFF

Timeout　　　　　3　　 (sec)

Retry　　　　　　2

Wait To Send　　　0　　 (ms)

RI / VCC　　　⊙ RI　　　○ VCC

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

Device-Specific Settings

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

No.　Device Name　　　　　Settings
1　PLC1　　　　　　　　　Station No.=0,PC No.=255

◆ Device Setting

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

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

Individual Device Settings

PLC1

Station No.　　　0

PC No.　　　　　255

Default

OK (O)　　　Cancel

■ Setting of External Device

Use the DIP switch of the Computer Link Unit for setting. Please refer to the manual of the External Device for more details.

◆ Mode Setting Rotary Switch

Settings	Setup Description
4	Protocol mode in Form 4

◆ Communication Setting DIP Switch

DIP Switch	Settings	Setup Description
SW11	OFF	Main channel setting
SW12	OFF	Data bit setting
SW13	OFF	Transmission speed setting
SW14	ON	
SW15	ON	
SW16	ON	Parity bit setting whether enable or disable
SW17	ON	Parity setting whether Even or Odd
SW18	ON	Stop bit setting
SW21	ON	Sum check setting whether enable or disable
SW22	ON	Write setting during RUN whether enable or disable
SW23	ON	Computer link/Multiple drop link selection
SW24	Unused	Unused

◆ Station Setting Rotary Switch

Rotary Switch	Settings	Setup Description
X10	0	Station No. setting
X1	0	

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 External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

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

■ Setting of External Device

Use the DIP switch of the Computer Link Unit for setting. Please refer to the manual of the External Device for more details.

◆ Mode Setting Rotary Switch

Settings	Setup Description
4	Protocol mode in Form 4

◆ Communication Setting DIP Switch

DIP Switch	Settings	Setup Description
SW03	Unused	Unused
SW04	ON	Write setting during RUN whether enable or disable
SW05	OFF	Transmission speed setting
SW06	ON	
SW07	ON	
SW08	OFF	Data bit setting
SW09	ON	Parity bit setting whether enable or disable
SW10	ON	Parity setting whether Even or Odd
SW11	ON	Stop bit setting
SW12	ON	Sum check setting whether enable or disable

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 Setting

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

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

■ Setting of External Device

Use the DIP switch of the Computer Link Unit for setting. Please refer to the manual of the External Device for more details.

◆ Mode Setting Rotary Switch

Settings	Setup Description
4	Protocol mode in Form 4

◆ Communication Setting DIP Switch

DIP Switch	Settings	Setup Description
SW11	OFF	Transmission speed setting
SW12	ON	
SW13	ON	
SW14	ON	Data bit setting
SW15	ON	Parity bit setting whether enable or disable
SW16	ON	Parity setting whether Even or Odd
SW17	ON	Stop bit setting
SW18	ON	Sum check setting whether enable or disable
SW19	ON	Main channel setting
SW20	OFF	Write setting during RUN whether enable or disable

◆ Station Setting Rotary Switch

Rotary Switch	Settings	Setup Description
X10	0	Station No. setting
X1	0	

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 Setting

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

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

■ Setting of External Device

Use the DIP switch of the Computer Link Unit for setting. Please refer to the manual of the External Device for more details.

◆ Mode Setting Rotary Switch

Settings	Setup Description
8	Protocol mode in Form 4

◆ Communication Setting DIP Switch

DIP Switch	Settings	Setup Description
SW11	ON	Main channel setting
SW12	OFF	Data bit setting
SW13	OFF	Transmission speed setting
SW14	ON	
SW15	ON	
SW16	ON	Parity bit setting whether enable or disable
SW17	ON	Parity setting whether Even or Odd
SW18	ON	Stop bit setting
SW21	ON	Sum check setting whether enable or disable
SW22	ON	Write setting during RUN whether enable or disable
SW23	ON	Termination resistance on the sending side whether exist or not exist
SW24	ON	Termination resistance on the receiving side whether exist or not exist

◆ Station Setting Rotary Switch

Rotary Switch	Settings	Setup Description
X10	0	Station No. setting
X1	0	

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] ([Setting]) of External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

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

■ Setting of External Device

Use the DIP switch of the Computer Link Unit for setting. Please refer to the manual of the External Device for more details.

◆ Mode Setting Rotary Switch

Settings	Setup Description
8	Protocol mode in Form 4

◆ Communication Setting DIP Switch

DIP Switch	Settings	Setup Description
SW11	ON	Main channel setting
SW12	OFF	Data bit setting
SW13	OFF	Transmission speed setting
SW14	ON	
SW15	ON	
SW16	ON	Parity bit setting whether enable or disable
SW17	ON	Parity setting whether Even or Odd
SW18	ON	Stop bit setting
SW21	ON	Sum check setting whether enable or disable
SW22	ON	Write setting during RUN whether enable or disable
SW23	ON	Computer link/Multiple drop link selection
SW24	Unused	Unused

◆ Station Setting Rotary Switch

Rotary Switch	Settings	Setup Description
X10	0	Station No. setting
X1	0	

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 External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

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

■ Setting of External Device

Use the DIP switch of the Computer Link Unit for setting. Please refer to the manual of the External Device for more details.

◆ Mode Setting Rotary Switch

Settings	Setup Description
8	Protocol mode in Form 4

◆ Communication Setting DIP Switch

DIP Switch	Settings	Setup Description
SW01	Unused	Unused
SW02	ON	Computer link/Multiple drop link selection
SW03	Unused	Unused
SW04	ON	Write setting during RUN whether enable or disable
SW05	OFF	Transmission speed setting
SW06	ON	
SW07	ON	
SW08	OFF	Data bit setting
SW09	ON	Parity bit setting whether enable or disable
SW10	ON	Parity setting whether Even or Odd
SW11	ON	Stop bit setting
SW12	ON	Sum check setting whether enable or disable

◆ Station Setting Rotary Switch

Rotary Switch	Settings	Setup Description
X10	0	Station No. setting
X1	0	

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 External Device you want to set from [Device-Specific Settings] of [Device/PLC Settings].

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

■ Setting of External Device

Use the DIP switch of the Computer Link Unit for setting. Please refer to the manual of the External Device for more details.

◆ Mode Setting Rotary Switch

Settings	Setup Description
8	Protocol mode in Form 4

◆ Communication Setting DIP Switch

DIP Switch	Settings	Setup Description
SW10	ON	Computer link/Multiple drop link selection
SW11	ON	Main channel setting
SW12	ON	Write setting during RUN whether enable or disable
SW13	OFF	
SW14	ON	Transmission speed setting
SW15	ON	
SW16	OFF	Data bit setting
SW17	ON	Parity bit setting whether enable or disable
SW18	ON	Parity setting whether Even or Odd
SW19	ON	Stop bit setting
SW20	ON	Sum check setting whether enable or disable

◆ Termination resistance DIP switch

DIP Switch	Settings	Setup Description
SW21	OFF	Unused
SW22	Option	Termination resistance on the sending side
SW23	Option	Termination resistance on the receiving side

◆ Station Setting Rotary Switch

Rotary Switch	Settings	Setup Description
X10	0	Station No. setting
X1	0	

4 Setup Items

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

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

)"3 Example of Communication Setting" (page 10)

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. **IMPORTANT** • Set the value to 5 seconds or more when you communicate via network.
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.
RI/VCC	You can switch RI/VCC of the 9th pin when you select RS232C for SIO type. It is necessary to change RI/5V by changeover switch of IPC when connect with IPC. Please refer to the manual of the IPC for more detail.

■ Device Setting

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

When you connect multiple External Device, click ▓▓ from [Device-Specific Settings] of [Device/PLC Settings] to add another External Device.
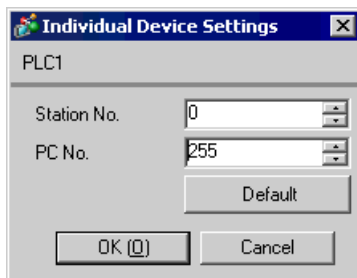
Setup Items	Setup Description
Station No.	Enter a station number of the External Device, using 0 to 31.
PC No.	Set when you communicate via network. Use an integer from 0 to 64 to enter PC No. of the External Device to communicate. If you do not communicate via network, enter 255.

4.2 Setup Items in Offline Mode

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

Cf.   Maintenance/Troubleshooting Guide "Offline Mode"

• The number of the setup items to be displayed for 1 page in the offline mode depends on the Display in use. Please refer to the Reference manual for details.

■ Communication Settings

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

```
Comm.        Device       Option


A Series Computer Link                    [COM1]        Page 1/1


              SIO Type          RS232C            ▼
              Speed             19200             ▼
              Data Length       ● 7        ○ 8
              Parity            ○ NONE   ● EVEN    ○ ODD
              Stop Bit          ○ 1        ● 2
              Flow Control      ER(DTR/CTS)       ▼

              Timeout(s)                    3 ▼ ▲
              Retry                         2 ▼ ▲
              Wait To Send(ms)              0 ▼ ▲




              Exit                      Back      2005/09/02
                                                  12:31:03
```

Setup Items	Setup Description
SIO Type	Select the SIO type to communicate with the External Device. **IMPORTANT** To make the communication settings correctly, confirm the serial interface specifications of Display unit for [SIO Type]. We cannot guarantee the operation if a communication type that the serial interface does not support is specified. For details concerning the serial interface specifications, refer to the manual for Display unit.
Speed	Select speed between the External Device and the Display.
Data Length	Select data length.
Parity	Select how to check parity.
Stop Bit	Select stop bit length.
Flow Control	Select the communication control method to prevent overflow of transmission and reception data.
Timeout (s)	Use an integer from 1 to 127 to enter the time (s) for which the Display waits for the response from the External Device. **IMPORTANT** • Set the value to 5 seconds or more when you communicate via network.
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 (ms)	Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands.

■ Device Setting

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

Comm.	Device	Option		

A Series Computer Link   [COM1]   Page 1/1

Device/PLC Name   PLC1 ▼

Station No.   0 ▼ ▲
PC No.   255 ▼ ▲

| | Exit | | Back | 2005/09/02 12:31:05 |

Setup Items	Setup Description
Device/PLC Name	Select the External Device for device setting. Device name is a title of External Device set with GP-Pro EX.(Initial value [PLC1])
Station No.	Enter a station number of the External Device, using 0 to 31.
PC No.	Set when you communicate via network. Use an integer from 0 to 64 to enter PC No. of the External Device to communicate. If you do not communicate via network, enter 255.

◾ Option

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

Comm.	Device	Option		

A Series Computer Link   [COM1]   Page 1/1

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

| | Exit | | Back | 2005/09/02 12:31:07 |

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

NOTE

• GP-4100 series and GP-4*01TM do not have the [Option] setting in the offline mode.

5 Cable Diagram

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

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

Cable Diagram 1

Display (Connection Port)	Cable		Notes
GP3000 (COM1) GP-4*01TM (COM1) ST (COM1) IPC[*1] PC/AT	1A	RS232C cable by Pro-face CA3-CBL232/5M-01 (5m)	
	1B	User-created cable	The cable length must be 15m or less.
GP-4105 (COM1)	1C	User-created cable	

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

☞ ■ IPC COM Port (page 7)

1A)

1B)

1C)

Display side
Terminal block

External Device side
D-sub 25 pin (plug)

Display

Signal name
RD(RXD)
SD(TXD)
ER(DTR)
SG
RS(RTS)
CS(CTS)

Shield

Pin	Signal name
2	SD(TXD)
3	RD(RXD)
6	DSR(DR)
7	SG
8	CD
20	DTR(ER)
5	CS(CTS)
1	FG
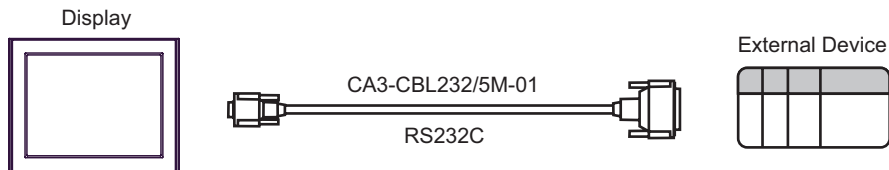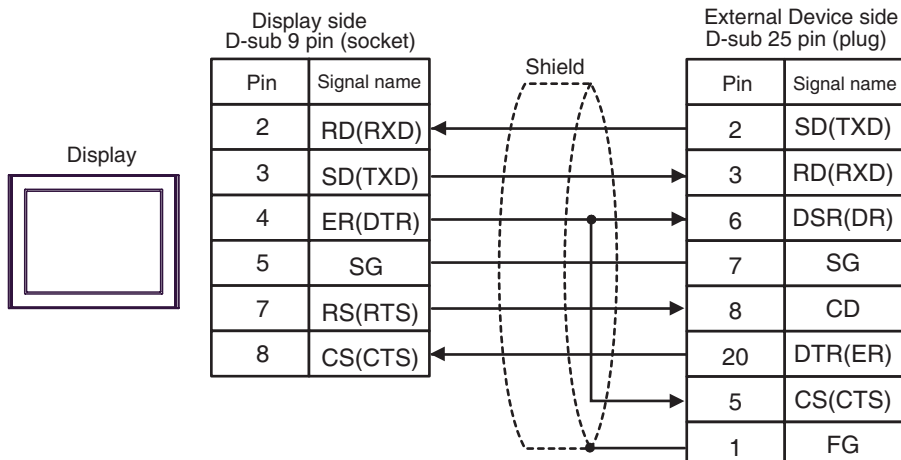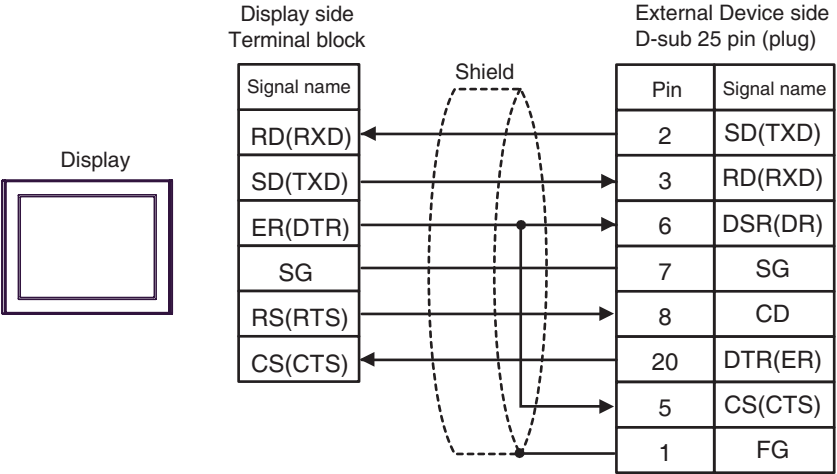
Cable Diagram 2

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

*1   All GP3000 models except AGP-3302B

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

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

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

> NOTE • In order to improve noise resistance characteristics, please use a twist pair whole shield cable as a transmission cable and ground the shield line.

2A)

• 1:1 Connection
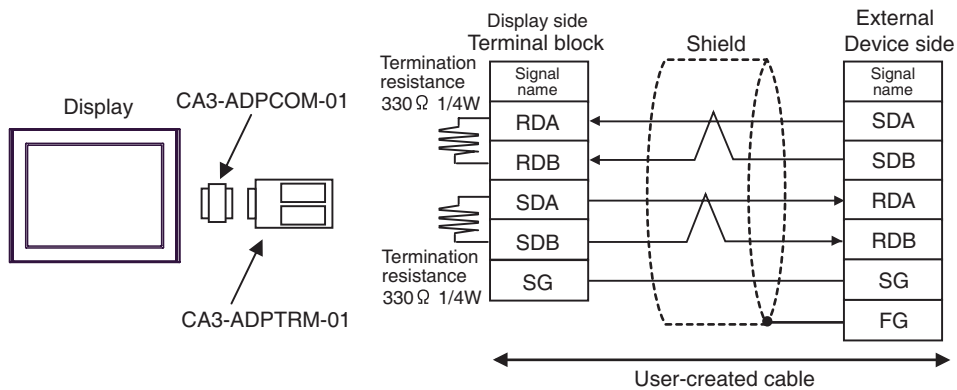
• 1:n Connection
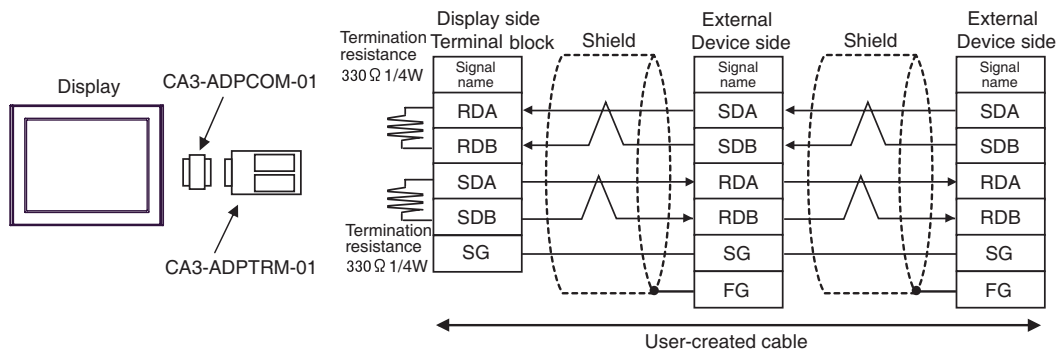
| IMPORTANT | • The termination resistance of 330Ω1/4W is required between SDA-SDB and RDA-RDB in the unit on the terminatory External Device.
• When the termination resistance is attached to the unit, you can turn ON the switch to load the termination resistance. Please refer to the manual of the External Device for more details. |

2B)

- 1:1 Connection
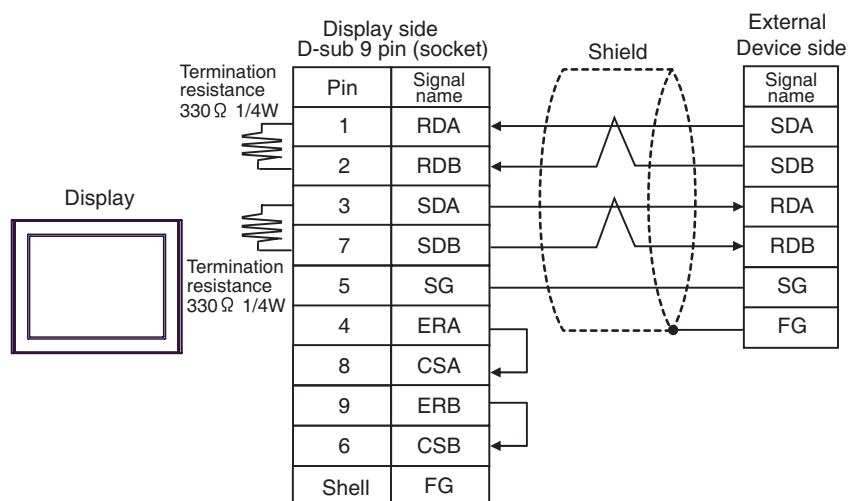
- 1:n Connection
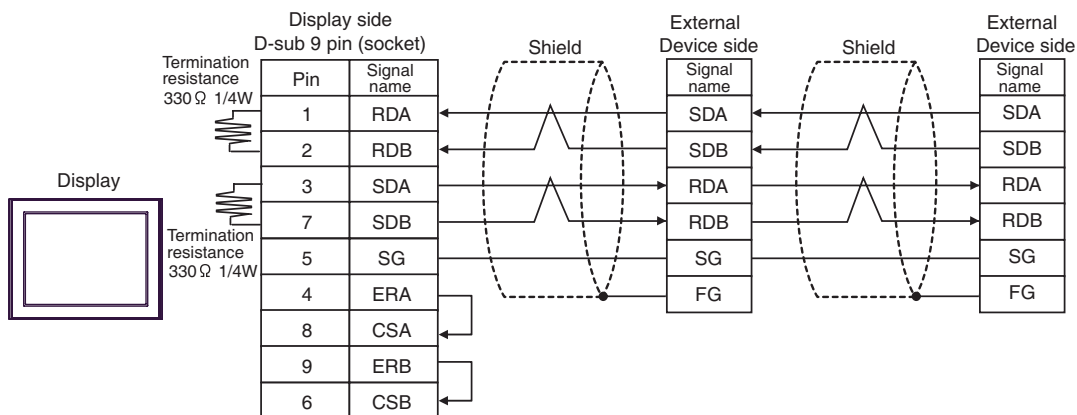
IMPORTANT	• The termination resistance of 330Ω1/4W is required between SDA-SDB and RDA-RDB in the unit on the terminatory External Device. • When the termination resistance is attached to the unit, you can turn ON the switch to load the termination resistance. Please refer to the manual of the External Device for more details.

2C)

- 1:1 Connection
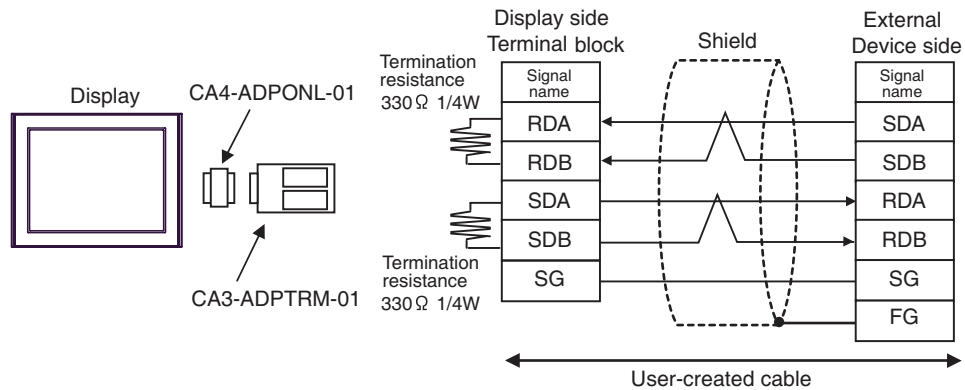
- 1:n Connection
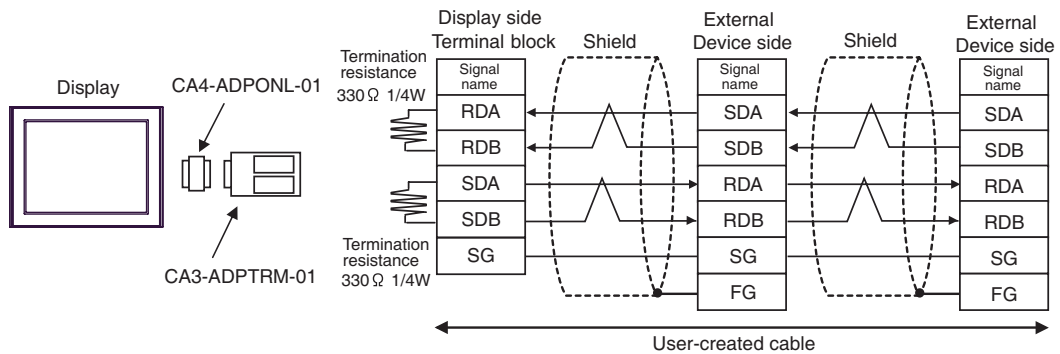
IMPORTANT

- The termination resistance of 330Ω1/4W is required between SDA-SDB and RDA-RDB in the unit on the terminatory External Device.
- When the termination resistance is attached to the unit, you can turn ON the switch to load the termination resistance. Please refer to the manual of the External Device for more details.

2D)

• 1:1 Connection
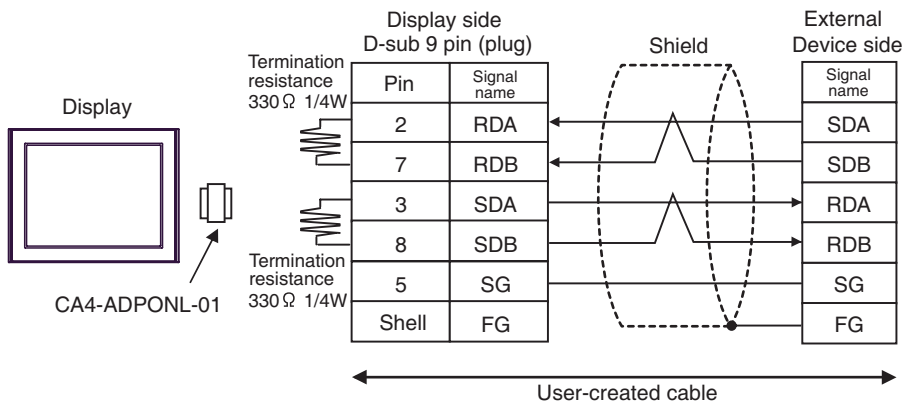
• 1:n Connection
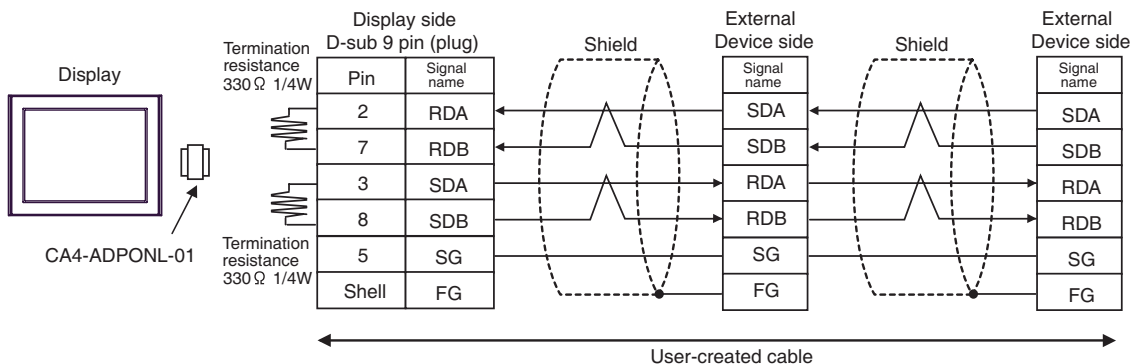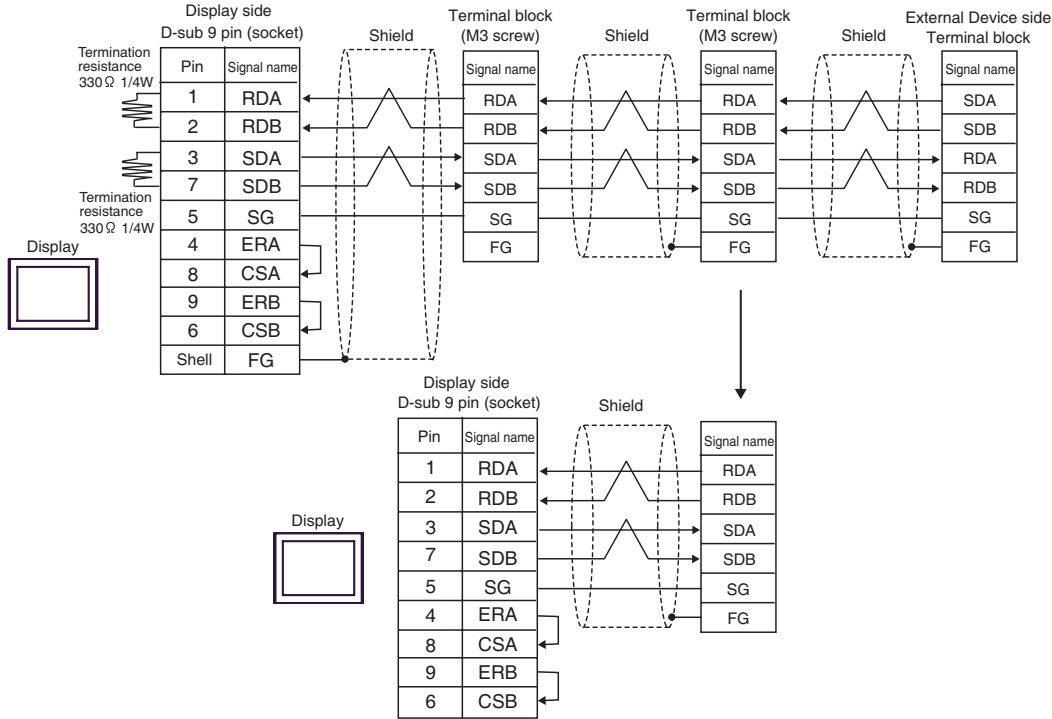

IMPORTANT
• The termination resistance of 330Ω1/4W is required between SDA-SDB and RDA-RDB in the unit on the terminatory External Device.
• When the termination resistance is attached to the unit, you can turn ON the switch to load the termination resistance. Please refer to the manual of the External Device for more details.

2E)

• 1:1 Connection
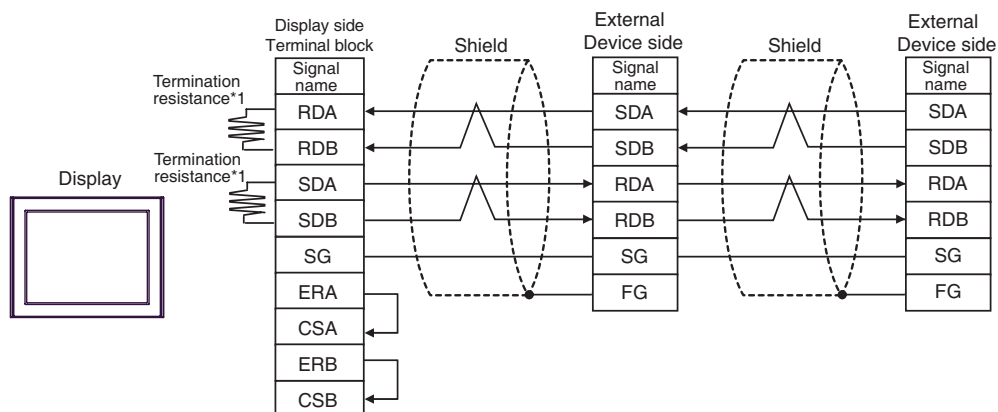
Display side Terminal block — Shield — External Device side

Signal name		Signal name
RDA	←	SDA
RDB	←	SDB
SDA	→	RDA
SDB	→	RDB
SG		SG
ERA		FG
CSA		
ERB		
CSB		

Termination resistance*1
Termination resistance*1
Display

• 1:n Connection

Display side Terminal block — Shield — External Device side — Shield — External Device side

Signal name		Signal name		Signal name
RDA	←	SDA	←	SDA
RDB	←	SDB	←	SDB
SDA	→	RDA	→	RDA
SDB	→	RDB	→	RDB
SG		SG		SG
ERA		FG		FG
CSA				
ERB				
CSB				

Termination resistance*1
Termination resistance*1
Display

IMPORTANT
• The termination resistance of 330Ω1/4W is required between SDA-SDB and RDA-RDB in the unit on the terminatory External Device.
• When the termination resistance is attached to the unit, you can turn ON the switch to load the termination resistance. Please refer to the manual of the External Device for more details.
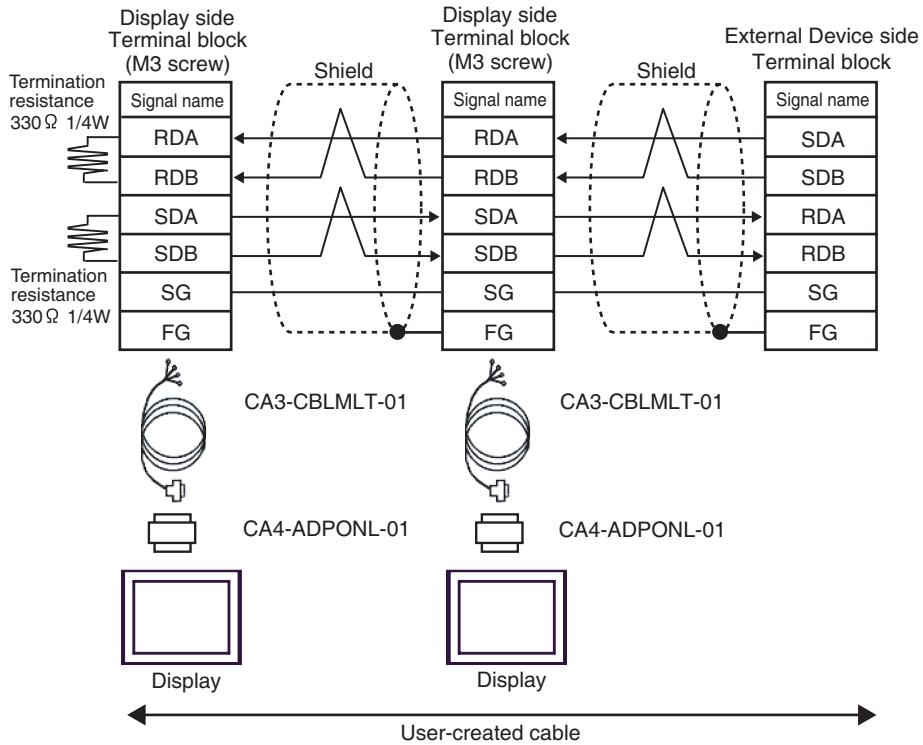
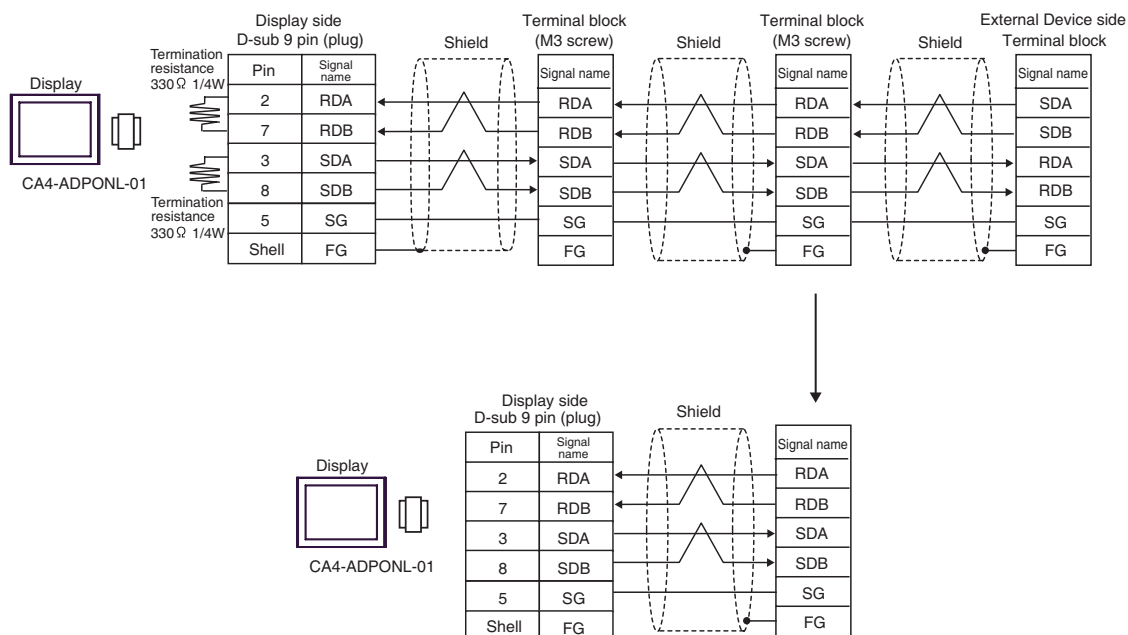*1　The resistance in the Display is used as the termination resistance. Set the value of the DIP Switch on the rear of the Display as shown in the table below.

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

Cable Diagram 3

Display (Connection Port)		Cable	Notes
GP3000 (COM1) GP-4*01TM (COM1) ST (COM1) IPC[*1] PC/AT	3A	Mitsubishi Q link cable by Pro-face CA3-CBLLNKMQ-01 (5m)	
	3B	User-created cable	The cable length must be 15m or less.
GP-4105 (COM1)	3C	User-created cable	

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

☞ ■ IPC COM Port (page 7)

3A)

3B)
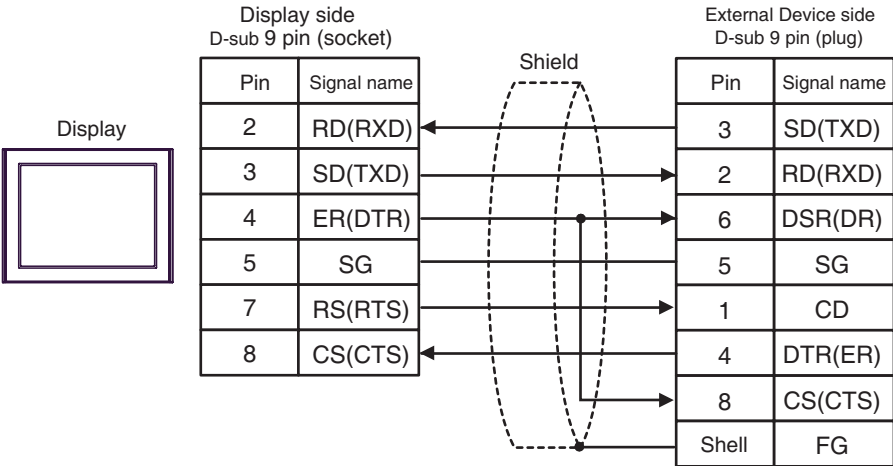
3C)
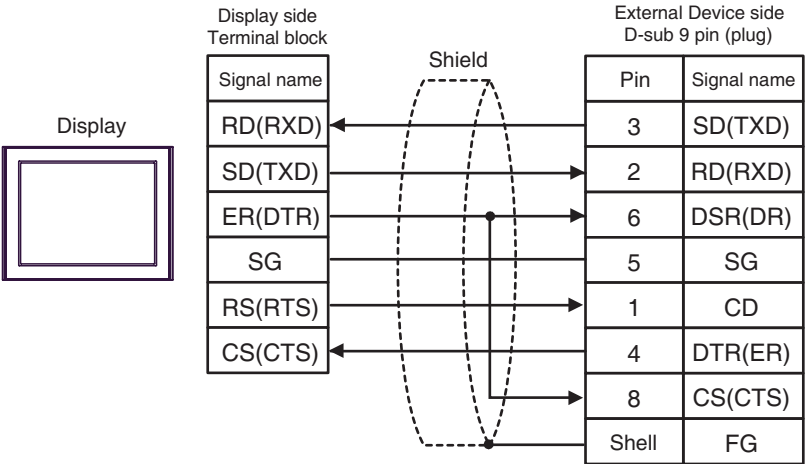
Cable Diagram 4

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

*1   All GP3000 models except AGP-3302B

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

*3   Only the COM port which can communicate by RS-422/485 (4 wire) can be used.
    ☞ ■ IPC COM Port (page 7)

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

4A)
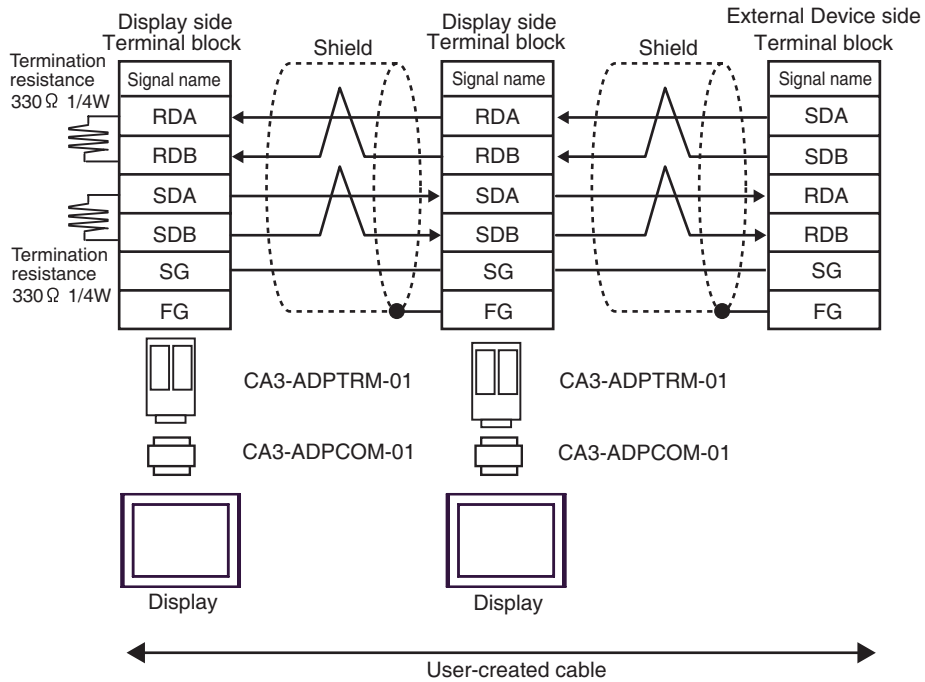
	Display side Terminal block	Shield	Display side Terminal block	Shield	External Device side Terminal block

Termination resistance 330Ω 1/4W

Signal name		Signal name		Signal name
RDA	←	RDA	←	SDA
RDB	←	RDB	←	SDB
SDA	→	SDA	→	RDA
SDB	→	SDB	→	RDB
SG		SG		SG
FG		FG		FG

Termination resistance 330Ω 1/4W

CA3-ADPTRM-01   CA3-ADPTRM-01

CA3-ADPCOM-01   CA3-ADPCOM-01

Display   Display

User-created cable

IMPORTANT
- The termination resistance of 330Ω1/4W is required between SDA-SDB and RDA-RDB in the unit on the terminatory External Device.
- When the termination resistance is attached to the unit, you can turn ON the switch to load the termination resistance. Please refer to the manual of the External Device for more details.

4B)

Display side
Terminal block
(M3 screw)

Display side
Terminal block
(M3 screw)

External Device side
Terminal block

Shield

Shield

Termination
resistance
330 Ω 1/4W

Signal name
RDA
RDB
SDA
SDB
SG
FG

Termination
resistance
330 Ω 1/4W

Signal name
RDA
RDB
SDA
SDB
SG
FG

Signal name
SDA
SDB
RDA
RDB
SG
FG

CA3-CBLMLT-01

CA3-CBLMLT-01

CA3-ADPCOM-01

CA3-ADPCOM-01

Display

Display

User-created cable
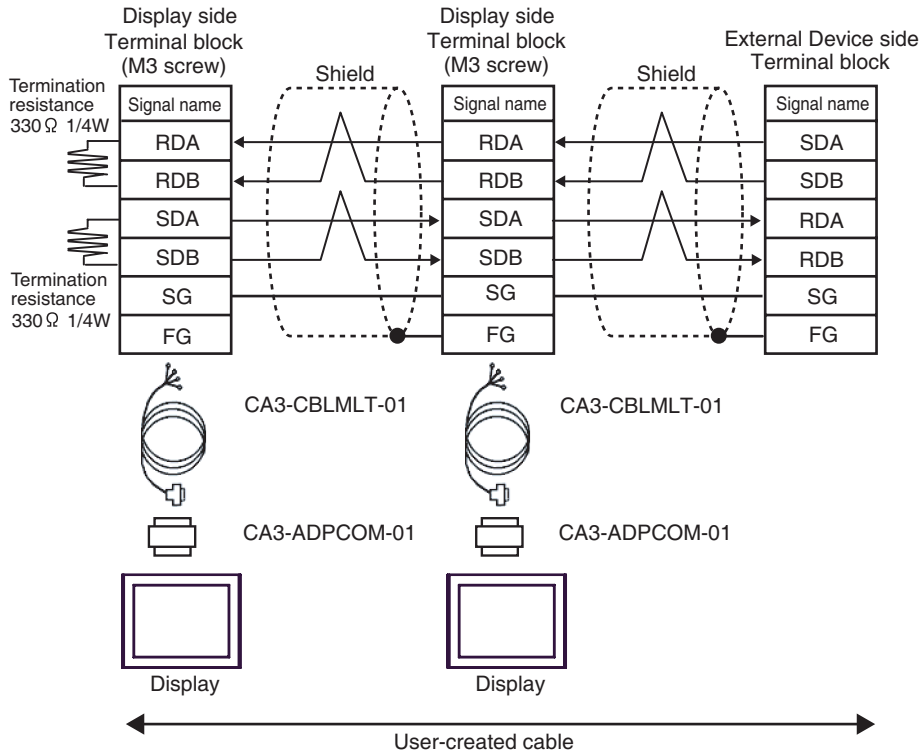
IMPORTANT

• The termination resistance of 330Ω1/4W is required between SDA-SDB and RDA-RDB in the unit on the terminatory External Device.

• When the termination resistance is attached to the unit, you can turn ON the switch to load the termination resistance. Please refer to the manual of the External Device for more details.

4C)


```
IMPORTANT    • The termination resistance of 330Ω1/4W is required between SDA-SDB and RDA-
               RDB in the unit on the terminatory External Device.
             • When the termination resistance is attached to the unit, you can turn ON the switch
               to load the termination resistance. Please refer to the manual of the External Device
               for more details.
```

4D)
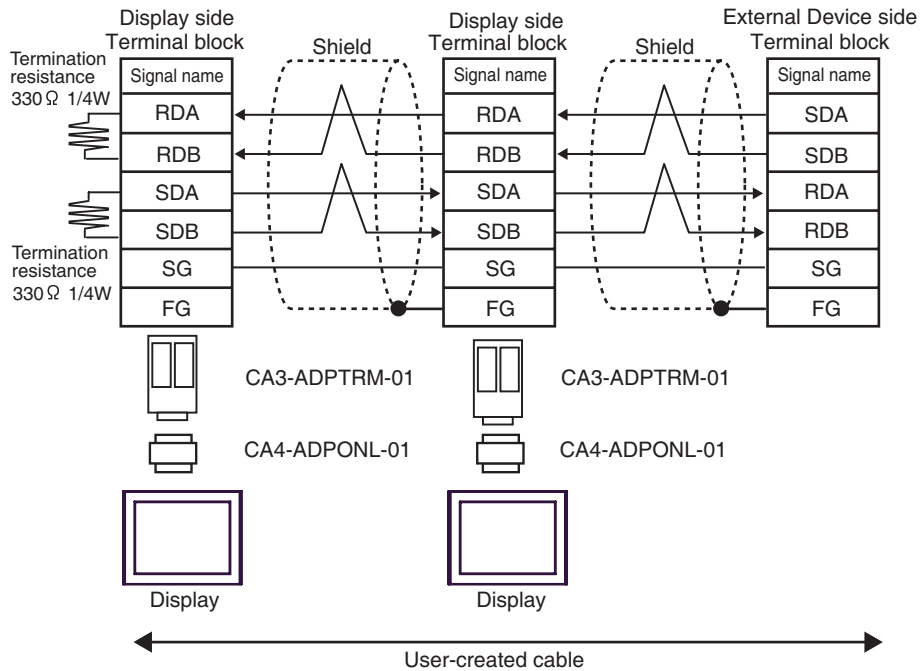
4E)

IMPORTANT
- The termination resistance of 330Ω1/4W is required between SDA-SDB and RDA-RDB in the unit on the terminatory External Device.
- When the termination resistance is attached to the unit, you can turn ON the switch to load the termination resistance. Please refer to the manual of the External Device for more details.

4F)

IMPORTANT
- The termination resistance of 330Ω1/4W is required between SDA-SDB and RDA-RDB in the unit on the terminatory External Device.
- When the termination resistance is attached to the unit, you can turn ON the switch to load the termination resistance. Please refer to the manual of the External Device for more details.

4G)
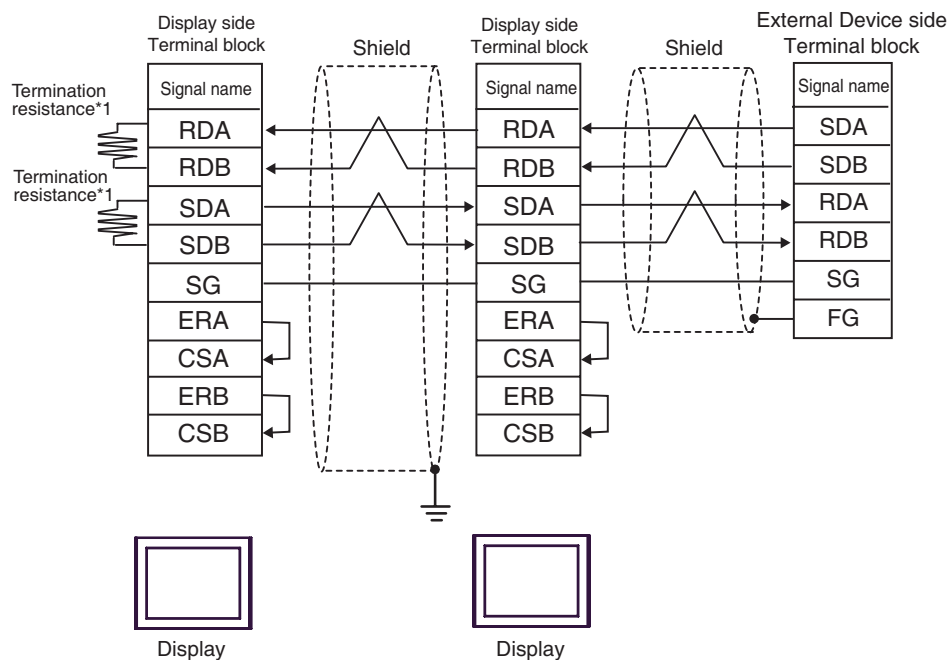
IMPORTANT

• The termination resistance of 330Ω1/4W is required between SDA-SDB and RDA-RDB in the unit on the terminatory External Device.

• When the termination resistance is attached to the unit, you can turn ON the switch to load the termination resistance. Please refer to the manual of the External Device for more details.

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

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

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

6 Supported Device

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

6.1 MELSEC AnA Series, Q Series A Mode

⬜ This address can be specified as system data area.

Device	Bit Address	Word Address	32bits	Notes
Input	X00000 - X01FFF (X007FF[*1])	X00000 - X01FF0 (X007F0[*1])	⌐L / H⌐	[...0]
Output	Y00000 - Y01FFF (Y007FF[*1])	Y00000 - Y01FF0 (Y007F0[*1])		[...0]
Internal Relay	M0000 - M8191	M0000 - M8176		[÷16]
Latch Relay	L000000 - L008191	L000000 - L008176		[÷16]
Step Relay	S000000 - S008191	S000000 - S008176		[÷16]
Link Relay	B00000 - B01FFF (B00FFF[*1])	B00000 - B01FF0 (B00FF0[*1])		[...0]
Annunciator	F000000 - F002047	F000000 - F002032		[÷16]
Special Relay	M9000 - M9255	M9000 - M9240		[÷16]
Timer (Contact)	TS00000 - TS02047	------		
Timer (Coil)	TC00000 - TC02047	------		
Counter (Contact)	CS00000 - CS01023	------		
Counter (Coil)	CC00000 - CC01023	------		
Timer (Current Value)	------	TN00000 - TN02047		
Counter (Current Value)	------	CN00000 - CN01023		
Data Register	------	D00000 - D08191 (D06143[*1])		[Bit15]
Link Register	------	W0000 - W1FFF (W0FFF[*1])		[BitF]
File Register	------	R00000 - R08191		[Bit15]
Extension File Register	------	0R0000 - 0R8191 : 64R0000 - 64R8191		[Bit15]
Special Register[*2]	------	D09000 - D09255		[Bit15]

*1 Shows the maximum device number that can be specified in the computer link unit except AJ71UC24, A1SJ71UC24 - R2/R4/PRF.

*2   Divided into 3 areas, for read only, for write only, for the system. When you write outside the write enable range, CPU error of the External Device may occur.

NOTE

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

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

    ☞ "Manual Symbols and Terminology"

6.2   MELSEC AnN Series

☐▭▭▭▭ This address can be specified as system data area.

| Device	Bit Address	Word Address	32bits	Notes
Input	X00000 - X007FF	X00000 - X007F0		[···0]
Output	Y00000 - Y007FF	Y00000 - Y007F0		[···0]
Internal Relay	M0000 - M2047	M0000 - M2032		[÷16]
Latch Relay	L000000 - L002047	L000000 - L002032		[÷16]
Step Relay	S000000 - S002047	S000000 - S002032		[÷16]
Link Relay	B00000 - B003FF	B00000 - B003F0		[···0]
Annunciator	F000000 - F000255	F000000 - F000240		[÷16]
Special Relay	M9000 - M9255	M9000 - M9240		[÷16]
Timer (Contact)	TS00000 - TS00255	------		
Timer (Coil)	TC00000 - TC00255	------		
Counter (Contact)	CS00000 - CS00255	------	[L / H]	
Counter (Coil)	CC00000 - CC00255	------		
Timer (Current Value)	------	TN00000 - TN00255		
Counter (Current Value)	------	CN00000 - CN00255		
Data Register	------	D00000 - D01023		[Bit 15]
Link Register	------	W0000 - W03FF		[Bit F]
File Register	------	R00000 - R08191		[Bit 15]
Extension File Register	------	0R0000 - 0R8191 : 28R0000 - 28R8191		[Bit 15]
Special Register[*1]	------	D09000 - D09255		[Bit 15]

*1   Divided into 3 areas, for read only, for write only, for the system. When you write outside the write enable range, CPU error of the External Device may occur.

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

6.3   MELSEC QnA Series

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

Device	Bit Address	Word Address	32bits	Notes
Input Relay	X0000 - X07FF	X0000 - X07F0		[***0]
Output Relay	Y0000 - Y07FF	Y0000 - Y07F0		[***0]
Internal Relay	M0000 - M8191	M0000 - M8176		[÷16]
Special Relay	M9000 - M9255 (SM1000 - SM1255)	M9000 - M9240 (SM1000 - SM1240)		[÷16]
Annunciator	F00000 - F02047	F00000 - F02047		[÷16]
Link Relay	B00000 - B00FFF	B00000 - B00FF0		[***0]
Timer (Contact)	TS00000 - TS02047	------		
Timer (Coil)	TC00000 - TC02047	------	[L / H]	
Counter (Contact)	CS00000 - CS01023	------		
Counter (Coil)	CC00000 - CC01023	------		
Timer (Current Value)	------	TN00000 - TN02047		
Counter (Current Value)	------	CN00000 - CN01023		
Data Register	------	D000000 - D006143		[Bit F]
Special Register	------	D009000 - D009255 (SD1000 - SD1255)		[Bit F]
Link Register	------	W0000 - W0FFF		[Bit F]

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

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

   ☞ "Manual Symbols and Terminology"

7 Device Code and Address Code

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

Device	Device Name	Device Code (HEX)	Address Code
Input	X	0080	Value of word address divided by 0x10
Output	Y	0081	Value of word address divided by 0x10
Internal Relay	M (0000 - 8991)	0082	Value of word address divided by 16
Special Relay	M (9000 - 9991)	0083	Value of (word address - 9000) divided by 16
Latch Relay	L	0084	Value of word address divided by 16
Step Relay	S	0087	Value of word address divided by 16
Link Relay	B	0088	Value of word address divided by 0x10
Annunciator	F	0085	Value of word address divided by 16
Timer (Current Value)	TN	0060	Word Address
Counter (Current Value)	CN	0061	Word Address
Data Register Special Register	D	0000	Word Address
Link Register	W	0002	Word Address
File Register	R	000F	Word Address
Extension File Register	0R	0010	Word Address
	:	:	:
	31R	002F	Word Address
	:	:	:
	64R	0050	Word Address

8   Error Messages

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

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

Display Examples of Error Messages

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

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