



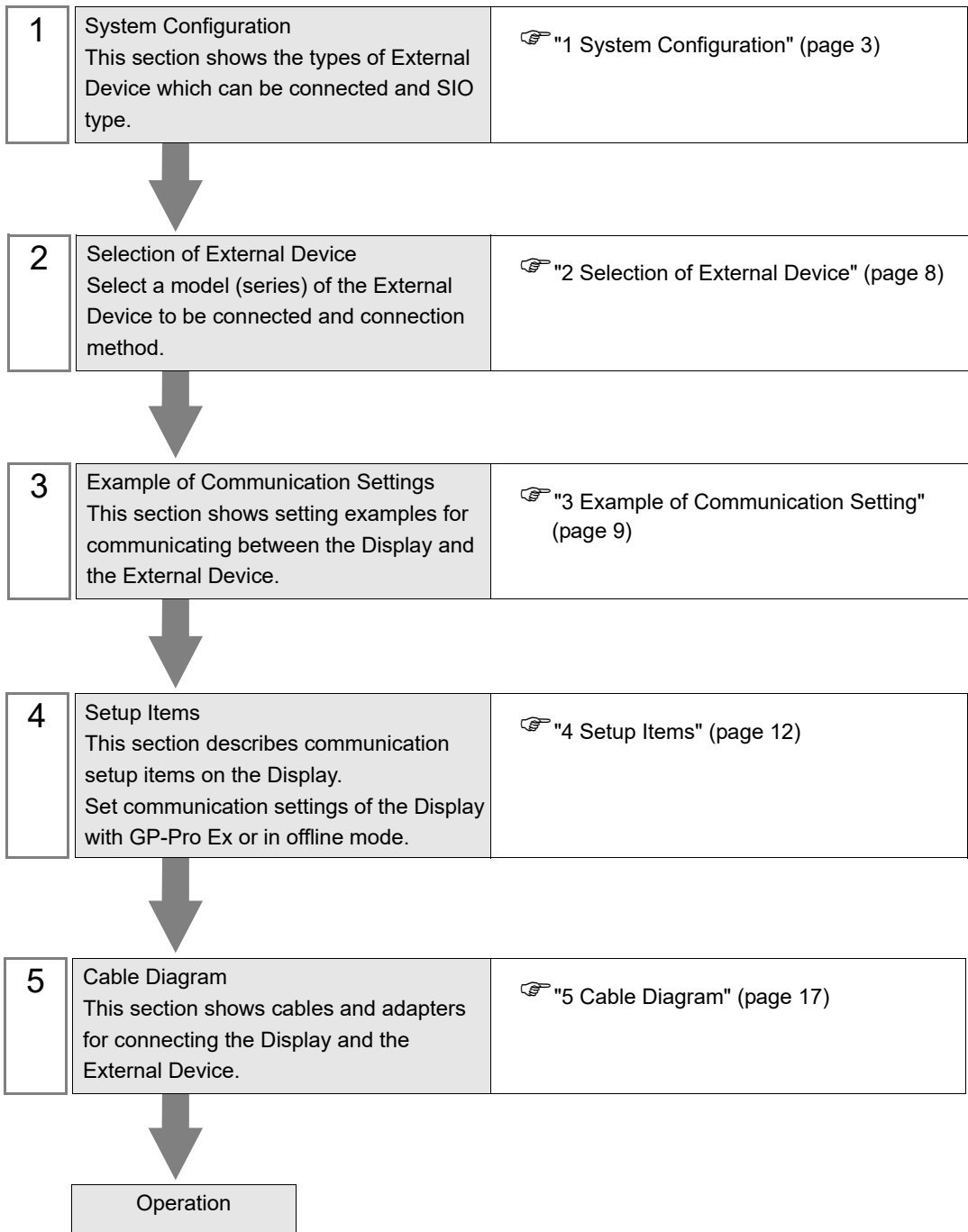
A Series CPU Direct Driver

| | | |
|---|---------------------------------------|----|
| 1 | System Configuration..... | 3 |
| 2 | Selection of External Device | 8 |
| 3 | Example of Communication Setting..... | 9 |
| 4 | Setup Items..... | 12 |
| 5 | Cable Diagram | 17 |
| 6 | Supported Device..... | 27 |
| 7 | Device Code and Address Code..... | 30 |
| 8 | Error Messages..... | 32 |

Introduction

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

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



1 System Configuration

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

| Series | CPU | Link I/F | SIO Type | Setting Example | Cable Diagram | | | | | | | | | | | | | |
|--|--|---------------|---|-------------------------------|--------------------------------|---|--------------------------------|--------------------------------|---|--------------------------------|--------------------------------|---|---------------|--------------------------------|------------------------------|---|---------------|--------------------------------|
| MELSEC AnA Series | A2A A3A A2U A2US A2U-S1 A2US-S1 A2USH-S1 A3U A4U | CPU Direct | RS232C | Setting Example 1 (page 9) | Cable Diagram 1 (page 17) | | | | | | | | | | | | | |
| | A2A A3A A2U A2US A2U-S1 A2US-S1 A2USH-S1 A3U A4U | | | | | RS422 (4wire) | Setting Example 2 (page 10) | Cable Diagram 2 (page 18) | | | | | | | | | | |
| | A2A A3A A2U A2US A2U-S1 A2US-S1 A2USH-S1 A3U A4U | | | | | | | | RS422 (4wire) | Setting Example 3 (page 11) | Cable Diagram 3 (page 21) | | | | | | | |
| | A2A A3A A2U A2US A2U-S1 A2US-S1 A2USH-S1 A3U A4U | | | | | | | | | | | 2-port adapter II by Pro-face (Model: GP070-MD11) | RS422 (4wire) | Setting Example 3 (page 11) | Cable Diagram 3 (page 21) | | | |
| | A2A A3A A2U A2US A2U-S1 A2US-S1 A2USH-S1 A3U A4U | | | | | | | | | | | | | | | 2-port adapter II by Pro-face (Model: GP070-MD11) | RS422 (4wire) | Setting Example 3 (page 11) |
| | A2A A3A A2U A2US A2U-S1 A2US-S1 A2USH-S1 A3U A4U | | 2-port adapter II by Pro-face (Model: GP070-MD11) | RS422 (4wire) | Setting Example 3 (page 11) | | | | | | | | | | | | | |
| | A2A A3A A2U A2US A2U-S1 A2US-S1 A2USH-S1 A3U A4U | | | | | 2-port adapter II by Pro-face (Model: GP070-MD11) | RS422 (4wire) | Setting Example 3 (page 11) | | | | | | | | | | |
| | A2A A3A A2U A2US A2U-S1 A2US-S1 A2USH-S1 A3U A4U | | | | | | | | 2-port adapter II by Pro-face (Model: GP070-MD11) | RS422 (4wire) | Setting Example 3 (page 11) | | | | | | | |
| | A2A A3A A2U A2US A2U-S1 A2US-S1 A2USH-S1 A3U A4U | | | | | | | | | | | 2-port adapter II by Pro-face (Model: GP070-MD11) | RS422 (4wire) | Setting Example 3 (page 11) | Cable Diagram 3 (page 21) | | | |
| | A2A A3A A2U A2US A2U-S1 A2US-S1 A2USH-S1 A3U A4U | | | | | | | | | | | | | | | 2-port adapter II by Pro-face (Model: GP070-MD11) | RS422 (4wire) | Setting Example 3 (page 11) |
| A2A A3A A2U A2US A2U-S1 A2US-S1 A2USH-S1 A3U A4U | 2-port adapter II by Pro-face (Model: GP070-MD11) | RS422 (4wire) | Setting Example 3 (page 11) | Cable Diagram 3 (page 21) | | | | | | | | | | | | | | |

continued to next page

| Series | CPU | Link I/F | SIO Type | Setting Example | Cable Diagram |
|------------------------------|-----------|---|---------------|--------------------------------|------------------------------|
| MELSEC AnN Series | A2CCPU24 | CPU Direct | RS232C | Setting Example 1 (page 9) | Cable Diagram 1 (page 17) |
| | A2CJ-S3 | | | | |
| | A3H | | | | |
| | A0J2H | | | | |
| | A1N | | | | |
| | A2N | | | | |
| | A3N | | | | |
| | A1S | | | | |
| | A1SH | | | | |
| | A2SH | | | | |
| | A1SJ | | | | |
| | A2CJ-S3 | 2-port adapter II by Pro-face (Model: GP070-MD11) | RS422 (4wire) | Setting Example 3 (page 11) | Cable Diagram 3 (page 21) |
| | A3H | | | | |
| | A0J2H | | | | |
| A2N | | | | | |
| A3N | | | | | |
| A2SH | | | | | |
| A1SH | | | | | |
| A1S | | | | | |
| A1SJ | | | | | |
| MELSEC Q Series A Mode | Q02CPU-A | CPU Direct | RS232C | Setting Example 1 (page 9) | Cable Diagram 4 (page 25) |
| | Q02HCPU-A | | | | |
| | Q06HCPU-A | | | | |

■ 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} |
| PE-4000B Atom N270 | COM1, COM2 | - | - |
| PE-4000B Atom N2600 | COM1, COM2 | COM3 ^{*4} , COM4 ^{*4} , COM5 ^{*4} , COM6 ^{*4} | COM3 ^{*4} , COM4 ^{*4} , COM5 ^{*4} , COM6 ^{*4} |
| PS5000 (Slim Panel Type Core i3 Model) ^{*5*6} | COM1, COM2 ^{*4} | COM2 ^{*4} | COM2 ^{*4} |
| PS5000 (Slim Panel Type Atom Model) ^{*5*6} | COM1, COM2 ^{*7} | COM2 ^{*7} | COM2 ^{*7} |
| PS5000 (Enclosed Panel Type) ^{*8} | COM1 | - | - |
| PS5000 (Modular Type PFXPU/PFXPP) ^{*5*6} PS5000 (Modular Type PFXPL2B5-6) | COM1 ^{*7} | COM1 ^{*7} | COM1 ^{*7} |
| PS5000 (Modular Type PFXPL2B1-4) | COM1, COM2 ^{*7} | COM2 ^{*7} | COM2 ^{*7} |
| PS6000 (Advanced Box) PS6000 (Standard Box) | COM1 ^{*9} | *10 | *10 |
| PS6000 (Basic Box) | COM1 ^{*9} | COM1 ^{*9} | COM1 ^{*9} |

*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.
- *4 Set up the SIO type with the BIOS. Please refer to the IPC manual for details of BIOS.
- *5 When setting up communication between an External Device and the RS-232C/422/485 interface module, use the IPC (RS-232C) or PS5000 (RS-422/485) cable diagrams. However, when using PFXZPBMPR42P2 in a RS-422/485 (4-wire) configuration with no flow control, connect 7.RTS+ and 8.CTS+, and connect 6.RTS- and 9.CTS-.
When using RS-422/485 communication with External Devices, you may need to reduce the transmission speed and increase the TX Wait time.
- *6 To use RS-422/485 communication on the RS-232C/422/485 interface module, the DIP Switch setting is required. Please refer to "Knowledge Base" (FAQs) on the support site. (<http://www.pro-face.com/trans/en/manual/1001.html>)

| Settings | FAQ ID |
|--|----------|
| PFXZPBMPR42P2, RS422/485 change method | FA263858 |
| PFXZPBMPR42P2 termination resistor setting | FA263974 |
| PFXZPBMPR44P2, RS422/485 change method | FA264087 |
| PFXZPBMPR44P2 termination resistor setting | FA264088 |

- *7 Set up the SIO type with the DIP Switch. Please refer to the IPC manual for details of DIP Switch. The BOX Atom has not a switch to set the RS-232C, RS-422/485 mode. Use the BIOS for the setting.
- *8 For the connection with the External Device, on the user-created cable read as if the connector on the Display-side is a M12 A-coding 8 pin socket. The pin assignment is the same as described in the cable diagram. For the M12 A-coding connector, use PFXZPSCNM122.
- *9 In addition to COM1, you can also use the COM port on the optional interface.
- *10 Install the optional interface in the expansion slot.

DIP Switch settings (PL3000 / PS3000 Series)

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.

RS-422/485 (4 wire)

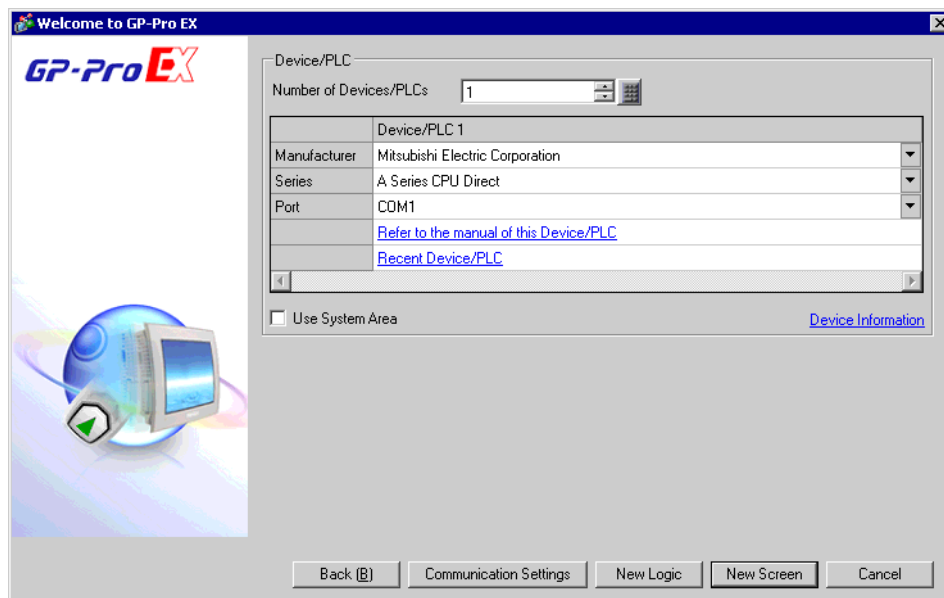
| DIP Switch | Setting | Description |
|------------|---------|---|
| 1 | OFF | Reserved (always OFF) |
| 2 | ON | SIO type: RS-422/485 |
| 3 | ON | |
| 4 | OFF | Output mode of SD (TXD) data: Always output |
| 5 | OFF | Terminal resistance (220Ω) insertion to SD (TXD): None |
| 6 | OFF | Terminal resistance (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 | RS (RTS) Auto control mode: Disabled |
| 10 | OFF | |

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 External Device to connect to the display.



| Setup Items | Setup Description |
|------------------------|---|
| Number of Devices/PLCs | Enter an integer from 1 to 4 to define the number of Devices/PLCs to connect to the display. |
| Manufacturer | Select the manufacturer of the External Device to connect. Select "Mitsubishi Electric Corporation". |
| Series | Select the External Device model (series) and the connection method. Select "A Series CPU Direct". In System configuration, make sure the External Device you are connecting is supported by "A Series CPU Direct". ☞ "1 System Configuration" (page 3) |
| Port | Select the Display port to connect to the External Device. |
| 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 "System Settings [Display Unit] - [System Area] Settings Guide" Cf. Maintenance/Troubleshooting Guide "Main Unit - System Area Settings" |

3 Example of Communication Setting

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

3.1 Setting Example 1

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer Series Port

Text Data Mode [Change](#)

Communication Settings

SID Type RS232C RS422/485(2wire) RS422/485(4wire)

Speed

Data Length 7 8

Parity NONE EVEN ODD

Stop Bit 1 2

Flow Control NONE ER(DTR/DS) XON/XOFF

Timeout (sec)

Retry

Wait To Send (ms)

Adapter

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 or CPU I/F Cable for Mitsubishi PLC A Series (Digital's:GP430-IP10-0), please select it to VCC.

Device-Specific Settings

Allowable Number of Devices/PLCs [Add Device](#)

| No. | Device Name | Settings | Add Indirect Device |
|-----|-------------|-------------------|-------------------------------------|
| 1 | PLC1 | Series=AnA Series | <input type="button" value="+"/> |

◆ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

Individual Device Settings

PLC1

Series AnA Series AnN Series

The range of the address is different according to the series.
Please reconfirm all of address settings that you are using
if you have changed the series.

- NOTE**
- Set Series according to your External Device.
 - Set [AnA Series] when you use Q Series A Mode.

■ Settings of External Device

There is no setting on the External Device.

3.2 Setting Example 2

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

◆ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

NOTE • Set Series according to your External Device.

■ Settings of External Device

There is no setting on the External Device.

3.3 Setting Example 3

■ Settings of GP-Pro EX

◆ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer Series Port

Text Data Mode [Change](#)

Communication Settings

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

Speed

Data Length 7 8

Parity NONE EVEN ODD

Stop Bit 1 2

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

Timeout (sec)

Retry

Wait To Send (ms)

Adapter

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 or CPU I/F Cable for Mitsubishi PLC A Series (Digital's:GP430-IP10-D), please select it to VCC.

Device-Specific Settings

Allowable Number of Devices/PLCs [Add Device](#)

| No. | Device Name | Settings | Add Indirect Device |
|-----|-------------|-------------------|-------------------------------------|
| 1 | PLC1 | Series=AnA Series | <input type="button" value="+"/> |

◆ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .

Individual Device Settings

PLC1

Series AnA Series AnN Series

The range of the address is different according to the series.
Please reconfirm all of address settings that you are using
if you have changed the series.

NOTE • Set Series according to your External Device.

■ Settings of External Device

There is no setting on the External Device.

4 Setup Items

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

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

☞ "3 Example of Communication Setting" (page 9)

4.1 Setup Items in GP-Pro EX

■ Communication Settings

To display the setup screen, from the [Project] menu, point to [System Settings] and select [Device/PLC].

| 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. |


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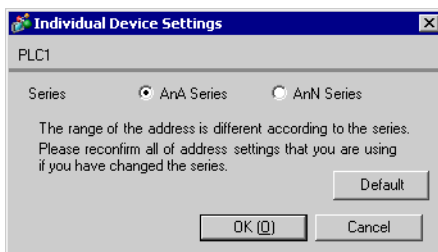
| Setup Items | Setup Description |
|--------------|---|
| Wait To Send | Use an integer from 0 to 255 to enter standby time (ms) for the Display from receiving packets to transmitting next commands. |
| Adapter | When using adapter, select either "Direct" or "2 Port". When using 2-port adapter II, select "2 Port". |
| 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 • Refer to the GP-Pro EX Reference Manual for Indirect Device.

Cf. GP-Pro EX Reference Manual "Changing the Device/PLC at Runtime (Indirect Device)"

■ Device Setting

To display the [Individual Device Settings] dialog box, from [Device-Specific Settings] in the [Device/PLC] window, select the external device and click [Settings] .



| Setup Items | Setup Description |
|-------------|---|
| Series | Select either "AnA Series" or "AnN Series" for the driver series name. Set "AnA Series" when you use Q Series A Mode. |

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.

(Page 1/2)

| Comm. | Device | | | |
|---------------------|--------|--------|----------|------------------------|
| A Series CPU Direct | | [COM1] | Page 1/2 | |
| SIO Type | RS232C | | | |
| Speed | 9600 | | | |
| Data Length | 8 | | | |
| Parity | ODD | | | |
| Stop Bit | 1 | | | |
| Flow Control | NONE | | | |
| Timeout(s) | 3 | | | |
| Retry | 2 | | | |
| Wait To Send(ms) | 0 | | | |
| Adapter | 2 Port | | | |
| | | | | ➔ |
| Exit | | Back | | 2005/09/02 12:25:52 |

| 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 | Speed between the External Device and the Display is shown. |
| Data Length | Data length is displayed. |
| Parity | The parity check method is displayed. |
| Stop Bit | Stop bit length is displayed. |
| Flow Control | The communication control method to prevent overflow of transmission and reception data is displayed. |

| Setup Items | Setup Description |
|--------------|--|
| 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. |
| Adapter | When using adapter, select either "Direct" or "2 Port". When using 2-port adapter II, select "2 Port". |

(Page 2/2)

| Comm. | Device | | | |
|---|--------|------|--------|------------------------|
| A Series CPU Direct | | | [COM1] | Page 2/2 |
| RI / VCC <input checked="" type="radio"/> RI <input type="radio"/> VCC In the case of RS232C, if you use the Digital's RS232C Isolation Unit or CPU I/F Cable for Mitsubishi PLC A Series (Digital's:GP430-IP10-0), please select it to VCC. | | | | |
| | | | | ← |
| Exit | | Back | | 2005/09/02 12:25:54 |

| 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, GP-4*01TM and GP-Rear Module do not have the [Option] setting in the offline mode.

■ 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 | | | |
| A Series CPU Direct | | [COM1] | Page 1/1 | |
| Device/PLC Name | | PLC1 | | |
| Series | | AnA Series | | |
| Exit | | Back | | 2005/09/02 12:25:56 |

| 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]) |
| Series | The driver series name "AnA Series" or "AnN Series" is displayed. You cannot change Series in [Device Setting] in offline mode. |

5 Cable Diagram

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

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

Cable Diagram 1

| Display (Connection Port) | Cable | Notes |
|---|---|---|
| GP3000 (COM1) GP4000*1 (COM1) SP5000*2 (COM1/2) SP-5B00 (COM1) ST3000 (COM1) ST6000 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000 (COM1) LT3000 (COM1) IPC*3 PC/AT | 1A Interface internal cable for Mitsubishi FA equipments by Diatrend Corp. DAFXIH-CABV (3m) | Available to order the length up to 15 m |
| GP-4105 (COM1) GP-4115T (COM1) GP-4115T3 (COM1) | 1B User-created cable + Interface internal cable for Mitsubishi FA equipments by Diatrend Corp. DAFXIH-CABV (3m) | Available to order the length up to 15 m |

*1 All GP4000 models except GP-4100 Series and GP-4203T

*2 Except SP-5B00

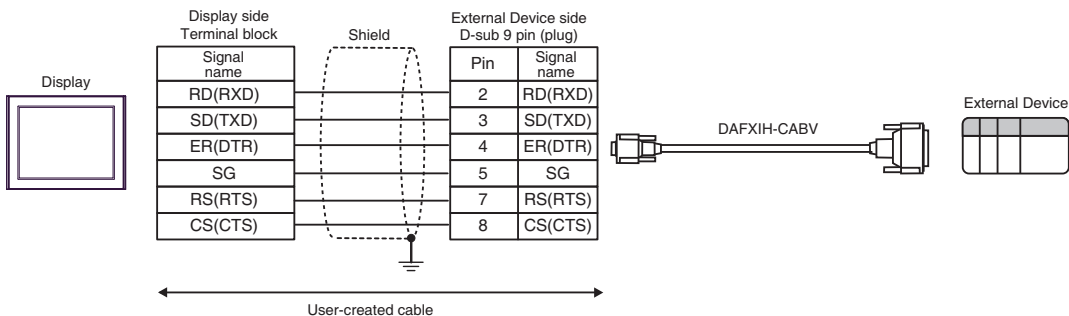
*3 Only the COM port which can communicate by RS-232C can be used.

☞ ■ IPC COM Port (page 5)

1A)



1B)



Cable Diagram 2

| Display (Connection Port) | Cable | | Notes |
|--|-------|---|--|
| GP3000* ¹ (COM1) AGP-3302B (COM2) GP4000* ² (COM2) GP-4*01TM (COM1) GP-Rear Module (COM1) GP-4201T (COM1) SP5000* ³ (COM1/2) SP-5B00 (COM2) ST3000* ⁴ (COM2) ST6000* ⁵ (COM2) ST-6200 (COM1) STM6000 (COM1) STC6000 (COM1) LT3000 (COM1) IPC* ⁶ PS6000 (Basic Box) (COM1/2) | 2A | Mitsubishi A connection cable by Pro-face CA3-CBLA-01 (5m) | |
| | 2B | User-created cable | The cable length must be 500m or less. |
| GP-4106 (COM1) GP-4116T (COM1) | 2C | Mitsubishi PLC A Series Cable by Pro-face ZC9CBA51(5m) | |
| | 2D | User-created cable | The cable length must be 500m or less. |

*1 All GP3000 models except AGP-3302B

*2 All GP4000 models except GP-4100 series, GP-4*01TM, GP-Rear Module, GP-4201T and GP-4*03T

*3 Except SP-5B00

*4 Except AST-3211A and AST-3302B

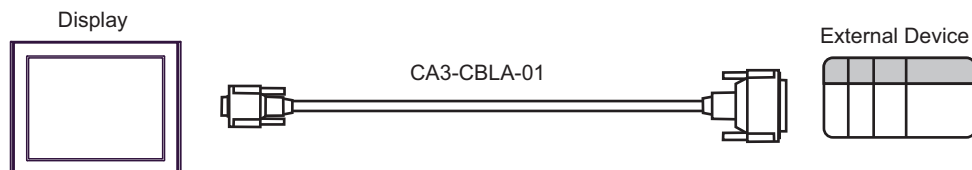
*5 Except ST-6200

*6 Only the COM port which can communicate by RS-422/485 (4 wire) can be used. (Except PE-4000B, and PS6000)

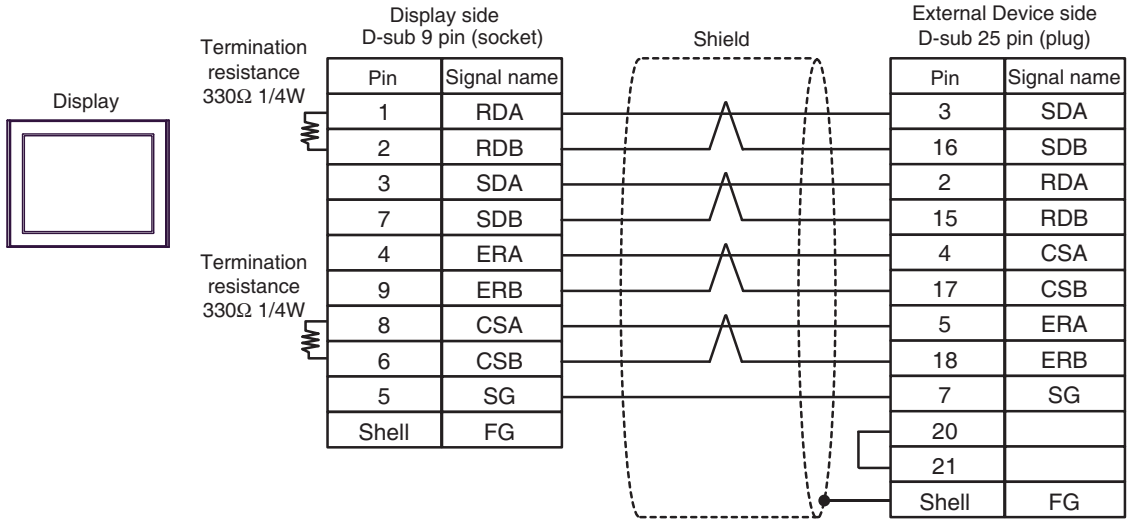
When using PS5000 series, PFXZPBMPR42P2 is required. Use a user-created cable for connection. You cannot use CA-3-CBLA-01.

 ■ IPC COM Port (page 5)

2A)



2B)

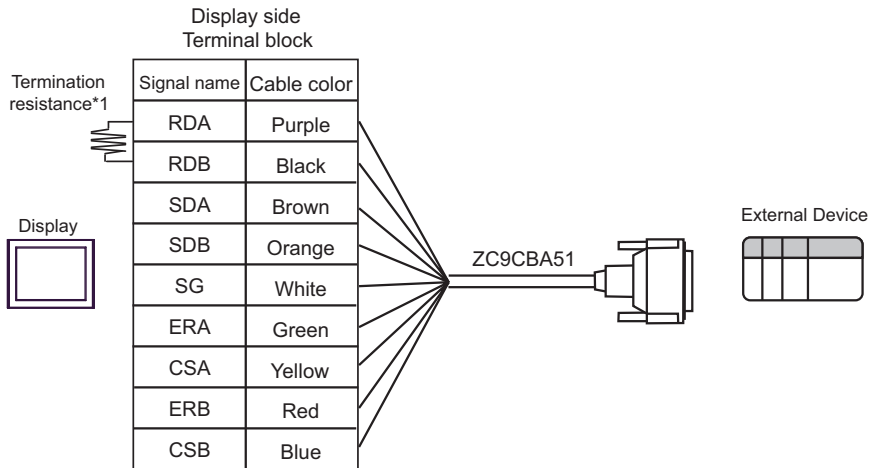


NOTE

- When using PFXZPBMPR42P2 to connect with PS5000 series, replace signals as follows.

| Cable diagram pin number, signal name | PFXZPBMPR42P2 pin number, signal name |
|--|--|
| 1.RDA | 3.RxD+ |
| 2.RDB | 4.RxD- |
| 3.SDA | 2.TxD+ |
| 7.SDB | 1.TxD- |
| 5.SG | 5.GND |
| 4.ERA | 7.RTS+ |
| 9.ERB | 6.RTS- |
| 8.CSA | 8.CTS+ |
| 6.CSB | 9.CTS- |

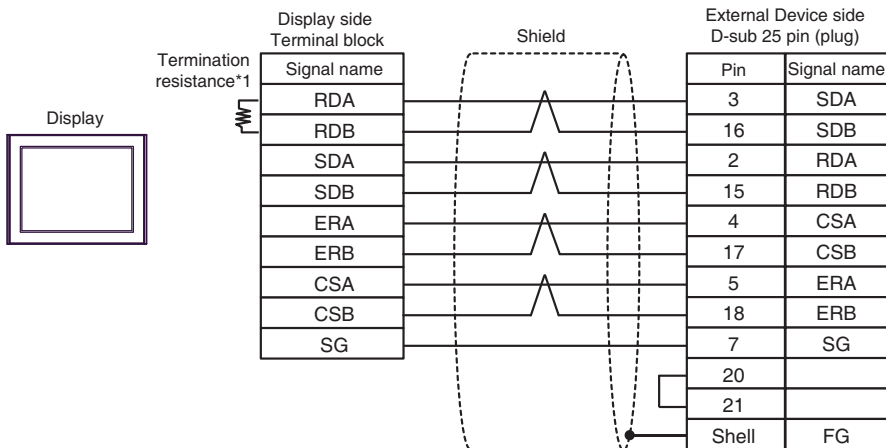
2C)



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

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

2D)



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

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

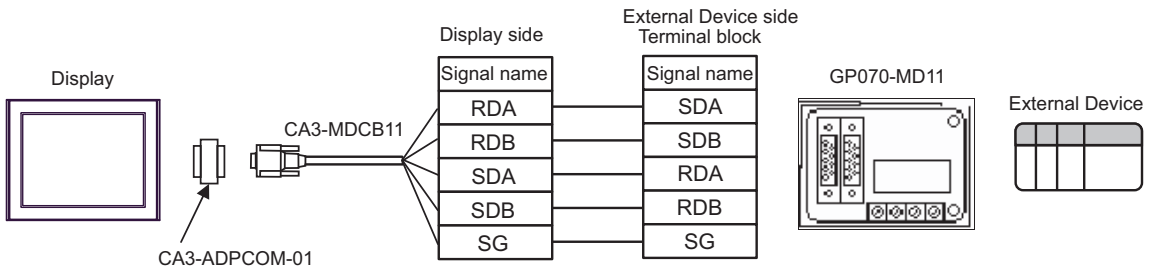
Cable Diagram 3

| Display (Connection Port) | Cable | | Notes |
|---|-------|---|---|
| GP3000* ¹ (COM1) AGP-3302B (COM2) GP-4*01TM (COM1) GP-Rear Module (COM1) ST3000* ² (COM2) LT3000 (COM1) IPC* ³ | 3A | COM port conversion adapter by Pro-face CA3-ADPCOM-01 + 2-port adapter cable for AGP by Pro-face CA3-MDCB11 (5m) + 2-port adapter II by Pro-face GP070-MD11 | |
| | 3B | User-created cable + 2-port adapter II by Pro-face GP070-MD11 | The cable length must be 600m or less. |
| GP3000* ⁴ (COM2) | 3C | Online adapter by Pro-face CA4-ADPONL-01 + 2-port adapter cable for AGP by Pro-face CA3-MDCB11 (5m) + 2-port adapter II by Pro-face GP070-MD11 | |
| | 3D | Online adapter by Pro-face CA4-ADPONL-01 + User-created cable + 2-port adapter II by Pro-face GP070-MD11 | The cable length must be 600m or less. |
| GP-4106 (COM1) GP-4116T (COM1) | 3E | User-created cable + 2-port adapter II by Pro-face GP070-MD11 | The cable length must be 600m or less. |
| GP4000* ⁵ (COM2) GP-4201T (COM1) SP5000* ⁶ (COM1/2) SP-5B00 (COM2) ST6000* ⁷ (COM2) ST-6200 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000* ⁸ (COM2) PS6000 (Basic Box) (COM1/2) | 3F | 2-port adapter cable by Pro-face PFXZCBCBMD1* ⁹ + 2-port adapter II by Pro-face GP070-MD11 | |
| | 3B | User-created cable + 2-port adapter II by Pro-face GP070-MD11 | The cable length must be 600m or less. |
| PE-4000B* ¹⁰ PS5000* ¹⁰ PS6000 (Optional Interface)* ¹⁰ | 3G | User-created cable + 2-port adapter II by Pro-face GP070-MD11 | The cable length must be 600m or less. |

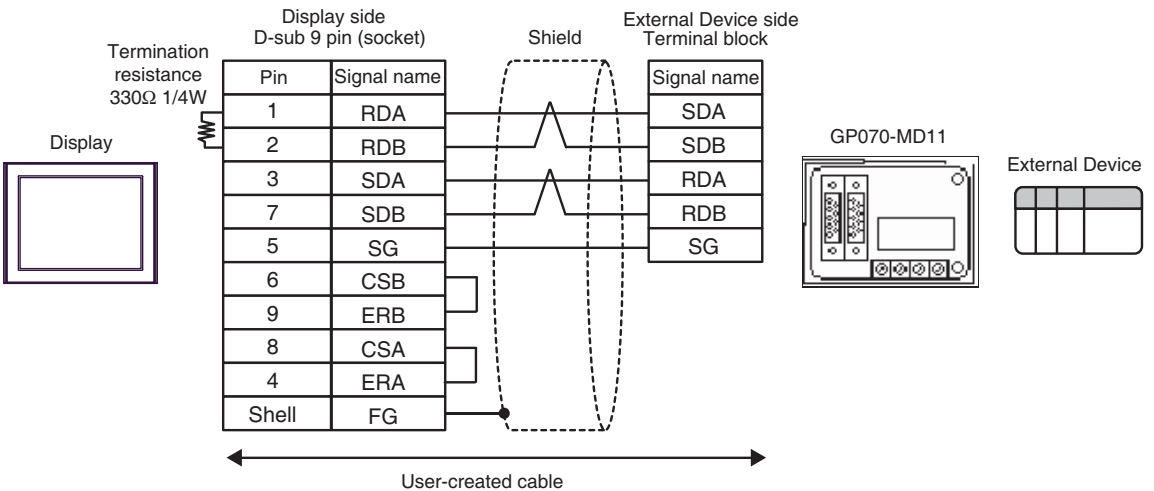
*1 All GP3000 models except AGP-3302B

- *2 Except AST-3211A and AST-3302B
- *3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used. (Except PE-4000B, PS5000, and PS6000)
☞ ■ IPC COM Port (page 5)
- *4 All GP3000 models except GP-3200 series and AGP-3302B
- *5 All GP4000 models except GP-4100 series, GP-4*01TM, GP-Rear Module, GP-4201T and GP-4*03T
- *6 Except SP-5B00
- *7 Except ST-6200
- *8 Due to the specification of the COM port, flow control is not possible, so omit the wiring of the control pins on the Display side of the cable diagram.
- *9 When using a 2-port Adapter Cable (CA3-MDCB11) instead of the 2-port Adapter Cable, refer to Cable Diagram 3A.
- *10 Only the COM port which can communicate by RS-422/485 (4 wire) can be used.
☞ ■ IPC COM Port (page 5)

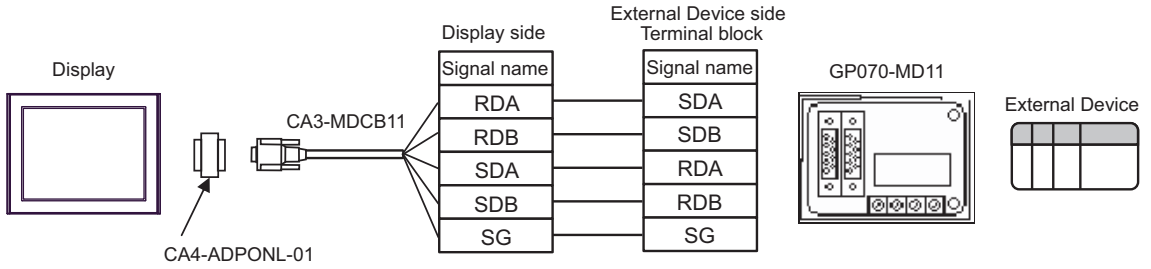
3A)



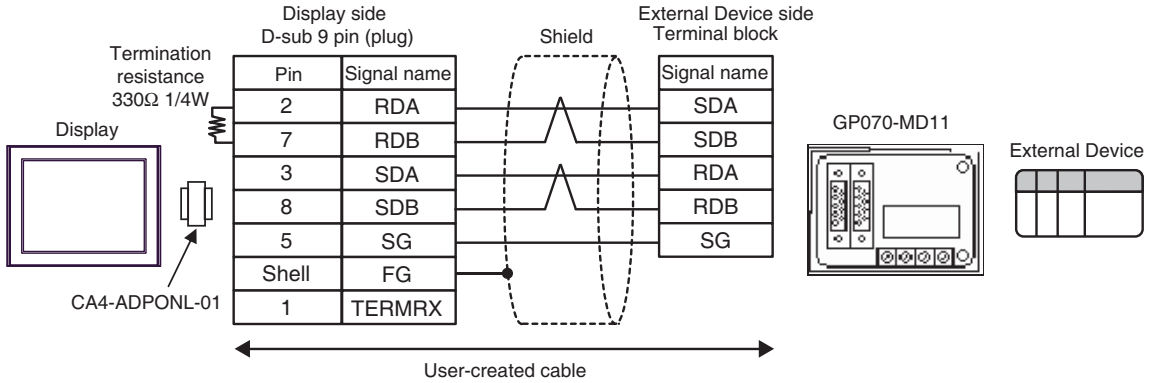
3B)



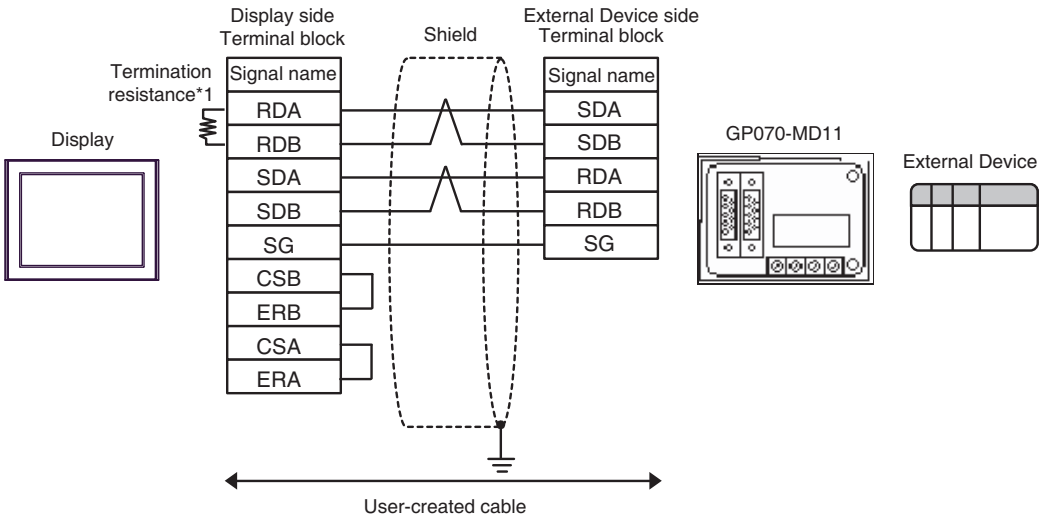
3C)



3D)



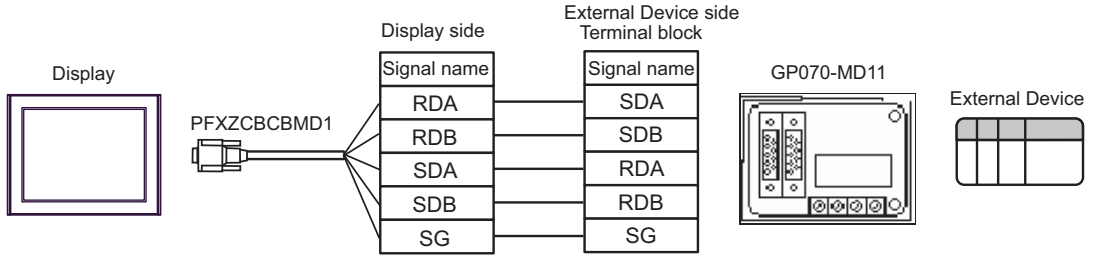
3E)



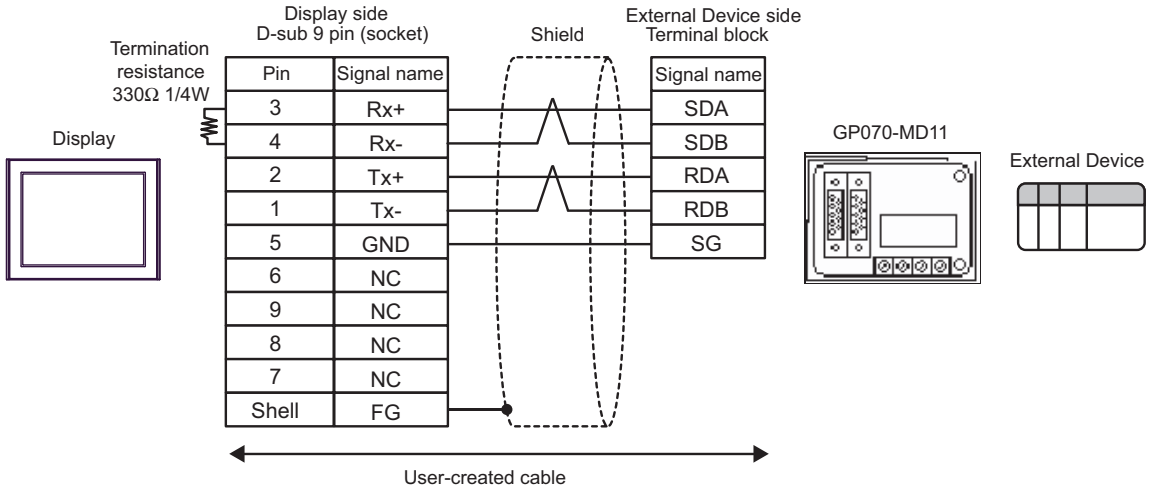
*1 The resistance in the Display is used as the termination resistance. Set the value of the DIP Switch on the rear of the Display as shown in the table below.

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

3F)



3G)



Cable Diagram 4

| Display (Connection Port) | Cable | | Notes |
|---|-------|--|-------|
| GP3000 (COM1) GP4000* ¹ (COM1) SP5000* ² (COM1/2) SP-5B00 (COM1) ST3000 (COM1) ST6000 (COM1) STM6000 (COM1) STC6000 (COM1) ET6000 (COM1) LT3000 (COM1) IPC* ³ PC/AT | 4A | Mitsubishi Q connection cable by Pro-face CA3-CBLQ-01 (5m) or QC30R2 (3m) by Mitsubishi Electric Corp. or DQCABR2V-H (3m)* ⁴ by Diatrend Corp. | |
| GP-4105 (COM1) GP-4115T (COM1) GP-4115T3 (COM1) | 4B | Mitsubishi PLC Q Series CPU I/F Cable by Pro-face ZC9CBQ31(3m) | |

*1 All GP4000 models except GP-4100 Series and GP-4203T

*2 Except SP-5B00

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

☞ ■ IPC COM Port (page 5)

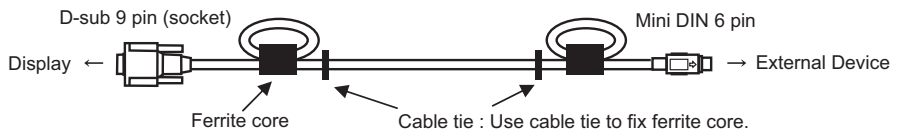
*4 Specify the cable length with (*m) Please contact Diatrend Corp. for available specified cable length.

4A)



IMPORTANT

- We recommend that ferrite core should be attached to your cable for improving noise tolerance.
- Attach ferrite core to the closest position to the connector on both ends of the cable. Also, wind the cable around ferrite core (1 turn) to expect more noise tolerance as shown below.

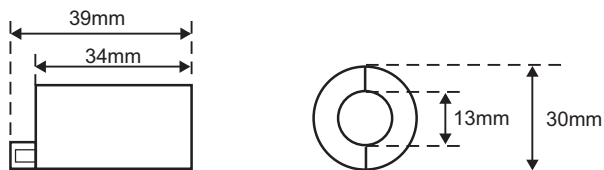


- The cable length must be 15 meters or less.

<Ferrite core recommended>

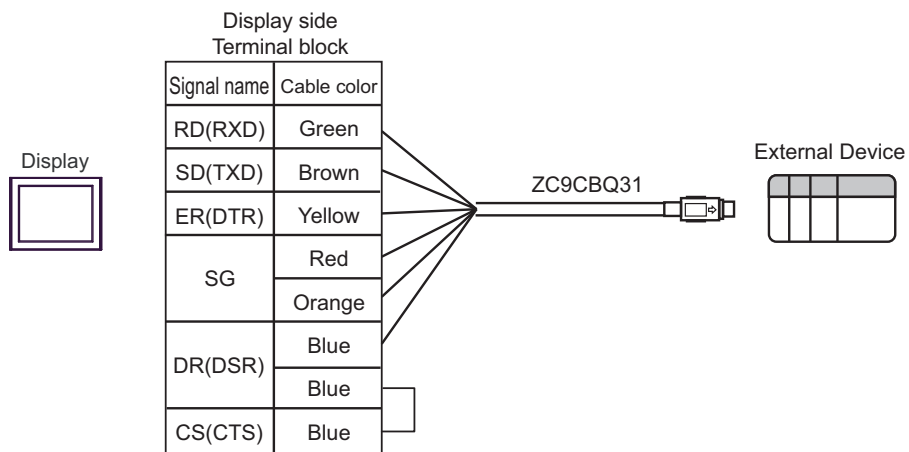
Maker: Seiwa Electric MFG. Co., Ltd.

Model: E04SR301334



- You can use the ferrite core by other companies if it has same size as shown above.


4B)














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 | 32 bits | Notes |
|-------------------------|-----------------|---|--|---|
| Input | X0000 - X1FFF | X0000 - X1FF0 | [L/H] |  |
| Output | Y0000 - Y1FFF | Y0000 - Y1FF0 | |  |
| Internal Relay | M0000 - M8191 | M0000 - M8176 | |  |
| Latch Relay | L0000 - L8191 | L0000 - L8176 | |  |
| Special Relay | M9000 - M9255 | M9000 - M9240 | |  |
| Annunciator | F0000 - F2047 | F0000 - F2032 | |  |
| Link Relay | B0000 - B1FFF | ----- | | |
| Timer (Contact) | TS0000 - TS2047 | ----- | | |
| Timer (Coil) | TC0000 - TC2047 | ----- | | |
| Counter (Contact) | CS0000 - CS1023 | ----- | | |
| Counter (Coil) | CC0000 - CC1023 | ----- | | |
| Timer (Current Value) | ----- | TN0000 - TN2047 | | |
| Counter (Current Value) | ----- | CN0000 - CN1023 | | |
| Data Register | ----- |  D0000 - D8191 | |  |
| Special Register | ----- | D9000 - D9255 | |  |
| Link Register | ----- | W0000 - W1FFF | |  |
| File Register | ----- | R0000 - R8191 |  *1 | |


*1 When you use the file register in AnA, AnU, AnN and A3H, use the user memory area in the memory cassettes below.

·A3NMCA-0 ·A3NMCA-2 ·A3NMCA-4 ·A3NMCA-8 ·A3NMCA-16
 ·A3NMCA-24 ·A3NMCA-40 ·A3NMCA-56 ·A4UMCA-8E


When you set the file register without using the memory cassette, error occurs during communication. Note that you may not use the file register when you set ROM to the ladder program.








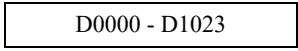



NOTE

- 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 | 32 bits | Notes |
|-------------------------|---------------|---|--|--|
| Input | X0000 - X07FF | X0000 - X07F0 |  |  |
| Output | Y0000 - Y07FF | Y0000 - Y07F0 | |  *1 |
| Internal Relay | M0000 - M2047 | M0000 - M2032 | |  |
| Latch Relay | L0000 - L2047 | L0000 - L2032 | |  |
| Special Relay | M9000 - M9255 | M9000 - M9240 | |  *2 |
| Annunciator | F000 - F255 | F000 - F240 | |  |
| Link Relay | B0000 - B03FF | ----- | | |
| Timer (Contact) | TS000 - TS255 | ----- | | |
| Timer (Coil) | TC000 - TC255 | ----- | | |
| Counter (Contact) | CS000 - CS255 | ----- | | |
| Counter (Coil) | CC000 - CC255 | ----- | | |
| Timer (Current Value) | ----- | TN000 - TN255 | | |
| Counter (Current Value) | ----- | CN000 - CN255 | | |
| Data Register | ----- |  D0000 - D1023 | |  |
| Link Register | ----- | W0000 - W03FF | |  |
| File Register | ----- | R0000 - R8191 |  *3 | |

*1 In case of using A2C, you cannot set the output relay Y01F0 - Y01FF (word: Y01F0) because they are used on the External Device.

*2 You cannot combine AnN and AJ71C24-S3 for use.

*3 When you use the file register in AnA, AnU, AnN and A3H, use the user memory area in the memory cassettes below.

·A3NMCA-0 ·A3NMCA-2 ·A3NMCA-4 ·A3NMCA-8 ·A3NMCA-16
 ·A3NMCA-24 ·A3NMCA-40 ·A3NMCA-56 ·A4UMCA-8E

When you set the file register without using the memory cassette, error occurs during communication. Note that you may not use the file register when you set ROM to the ladder program.

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.

7.1 MELSEC AnA Series, Q Series A Mode

| Device | Device Name | Device Code (HEX) | Address Code |
|-------------------------|-------------|-------------------|---|
| Input | X | 0080 | Value of word address divided by 16 |
| Output | Y | 0081 | Value of word address divided by 16 |
| Internal Relay | M | 0082 | Value of word address divided by 16 |
| Latch Relay | L | 0084 | Value of word address divided by 16 |
| Special Relay | M | 0083 | Value of (word address - 9000) divided by 16 |
| 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 | D | 0000 | Word Address |
| Special Register | D | 0001 | Value of word address from which 9000 is deducted |
| Link Register | W | 0002 | Word Address |
| File Register | R | 000F | Word Address |

7.2 MELSEC AnN Series

| Device | Device Name | Device Code (HEX) | Address Code |
|-------------------------|-------------|-------------------|--|
| Input | X | 0080 | Value of word address divided by 16 |
| Output | Y | 0081 | Value of word address divided by 16 |
| Internal Relay | M | 0082 | Value of word address divided by 16 |
| Latch Relay | L | 0084 | Value of word address divided by 16 |
| Special Relay | M | 0083 | Value of (word address - 9000) divided by 16 |
| 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 | D | 0000 | Word Address |
| Link Register | W | 0002 | Word Address |
| File Register | R | 000F | 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 | <p>Displays IP address or device address of the External Device where error occurs, or error codes received from the External Device.</p> <p>NOTE</p> <ul style="list-style-type: none"> • IP address is displayed such as "IP address(Decimal): MAC address(Hex)". • Device address is displayed such as "Address: Device address". • Received error codes are displayed such as "Decimal[Hex]". |

Display Examples of Error Messages

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

NOTE

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