Yaskawa Electric Corporation

MEMOBUS SIO Driver

| 1 | System Configuration | |
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| 4 | Setup Items | 53 |
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| 7 | Device Code and Address Code | |
| 8 | Error Messages | 113 |

PREFACE

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 | (P 11 Custom Configuration 1 (2000 2) |
|---|---|---|
| | This section shows the types of External | "1 System Configuration" (page 3) |
| | Devices which can be connected and SIO | |
| | type. | |
| | | |
| | | |
| 2 | Selection of External Device | |
| | Select a model (series) of the External | "2 Selection of External Device" (page 9) |
| | Device to be connected and connection | |
| | method. | |
| | | |
| | | |
| 3 | Example of Communication Settings | [©] "3 Example of Communication Setting" |
| | This section shows setting examples for | |
| | communicating between the Display and | (page 10) |
| | the External Device. | |
| | | |
| 4 | Setup Items | ~~ |
| . | This section describes communication | 🖙 "4 Setup Items" (page 53) |
| | setup items on the Display. | |
| | Set communication settings of the Display | |
| | with GP-Pro EX or in off-line mode. | |
| | | |
| 5 | Cable Diagram | ~ |
| | This section shows cables and adapters | "5 Cable Diagram" (page 58) |
| | for connecting the Display and the | |
| | External Device. | |
| | L | |
| | | |
| | Operation | |
| | | |

1 System Configuration

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

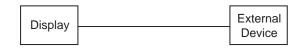
| Series | CPU | Link I/F | SIO Type | Setting Example | Cable Diagram |
|--------------|---------------------|------------------------------|----------------------|---|----------------------------------|
| | | CN1 on CP217IF | RS232C | "3.1 Setting Example 1" (page 10) | " Cable Diagram 1" (page 58) |
| | CP-9200SH | CN2 on CP217IF | RS232C | "3.1 Setting Example 1" (page 10) | " Cable Diagram 2" (page 60) |
| Control Pack | | CN3 on CP217IF | RS422/485 (4wire) | "3.2 Setting Example 2" (page 15) | " Cable Diagram 3" (page 61) |
| | CP-9200 CP-9200H | Port on the CPU unit | RS232C | "3.13 Setting Example 13" (page 49) | " Cable Diagram 12" (page 94) |
| | MP920 | PORT1, PORT2 on the CPU unit | RS232C | "3.3 Setting Example 3" (page 20) | " Cable Diagram 1" (page 58) |
| | | CN1, CN2 on 217IF | RS232C | "3.3 Setting Example 3" (page 20) | " Cable Diagram 9" (page 84) |
| | | CN3 on 217IF | RS422/485 (4wire) | "3.4 Setting Example 4" (page 23) | " Cable Diagram 4" (page 64) |
| MP900 | | | RS422/485 (2wire) | "3.5 Setting Example 5" (page 26) | " Cable Diagram 5" (page 67) |
| MP900 | MP930 | PORT1, PORT2 on the CPU unit | RS232C | "3.3 Setting Example 3" (page 20) | " Cable Diagram 1" (page 58) |
| | unit MP940 | PORT1 on the CPU unit | RS232C | "3.3 Setting Example 3" (page 20) | " Cable Diagram 6" (page 73) |
| | | PORT2 on the CPU | RS422/485 (4wire) | "3.4 Setting Example 4" (page 23) | " Cable Diagram 7" (page 74) |
| | | unit | RS422/485 (2wire) | "3.5 Setting Example 5" (page 26) | " Cable Diagram 8" (page 78) |

| Series | CPU | Link I/F | SIO Type | Setting Example | Cable Diagram |
|---------------|--|--|----------------------|---|------------------------------------|
| | | Serial port on 218IF-01 | RS232C | "3.6 Setting Example 6" (page 29) | " Cable Diagram 1" (page 58) |
| | | Serial port on 218IF-02 | RS232C | "3.6 Setting Example 6" (page 29) | " Cable Diagram 1" (page 58) |
| | MP2300 | Serial port on 260IF-01 | RS232C | "3.6 Setting Example 6" (page 29) | " Cable Diagram 1" (page 58) |
| MP2000 | MP2200 MP2310 MP2300S | Serial port on 261IF-01 | RS232C | "3.6 Setting Example 6" (page 29) | " Cable Diagram 1" (page 58) |
| | WII 25005 | PORT on 217IF-01 | RS232C | "3.6 Setting Example 6" (page 29) | " Cable Diagram 1" (page 58) |
| | | RS422/485 on 217IF-01 | RS422/485 (4wire) | "3.7 Setting Example 7" (page 33) | " Cable Diagram 7" (page 74) |
| | | | RS422/485 (2wire) | "3.8 Setting Example 8" (page 37) | " Cable Diagram 8" (page 78) |
| | GL120 | MEMOBUS port 1 on the CPU10 unit MEMOBUS port 2 on the CPU10 unit MEMOBUS port on the CPU20 unit MEMOBUS port on the CPU21 unit | RS232C | "3.9 Setting Example 9" (page 41) | " Cable Diagram10" (page 86) |
| | | JAMSC- 120NOM26100 | • | | |
| MEMOCON GL | | JAMSC- 120NOM27100 | RS422/485 (4wire) | "3.10 Setting Example 10" (page 43) | " Cable Diagram 11" (page 88) |
| | GL130 J ₂ J ₂ J ₄ | MEMOBUS port on the CPU30 unit MEMOBUS port on the CPU35 unit | RS232C | "3.9 Setting Example 9" (page 41) | " Cable Diagram10" (page 86) |
| | | JAMSC- 120NOM26100 | | | (page ou) |
| | | JAMSC- 120NOM27100 | RS422/485 (4wire) | "3.10 Setting Example 10" (page 43) | " Cable Diagram 11" (page 88) |

| Series | CPU | Link I/F | SIO Type | Setting Example | Cable Diagram |
|------------------|----------------------|---------------------------|----------------------|---|-----------------------------------|
| | U84,84J | JAMSC-C8110 | RS232C | "3.11 Setting Example 11" (page 45) | " Cable Diagram 12" (page 94) |
| | U84S | JAMSC-C8610 | RS232C | "3.11 Setting Example 11" (page 45) | " Cable Diagram 12" (page 94) |
| MEMOCON | GL40S | JAMSC-IF61 JAMSC-IF41A | RS232C | "3.11 Setting Example 11" (page 45) | " Cable Diagram 12" (page 94) |
| SC | GL60H GL70H | JAMSC-IF60 JAMSC-IF61 | RS232C | "3.11 Setting Example 11" (page 45) | " Cable Diagram 12" (page 94) |
| | CL (OS | JAMSC-IF60 JAMSC-IF61 | RS232C | "3.11 Setting Example 11" (page 45) | " Cable Diagram 12" (page 94) |
| | GL60S JAMSC-IF612 | JAMSC-IF612 | RS422/485 (4wire) | "3.12 Setting Example 12" (page 47) | " Cable Diagram 13" (page 95) |
| MEMOCON Micro | Micro | Port on the CPU unit | RS232C | "3.14 Setting Example 14" (page 51) | " Cable Diagram 14" (page 101) |

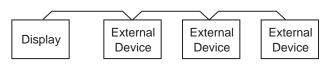
Connection Configuration

• 1:1 Connection



• 1:n Connection

You can connect maximum 16 units of External Device to 1 unit of GP.



■ 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 | | | |
|--|--|----------------------|----------------------|--|
| Conco | RS-232C | RS-422/485(4 wire) | RS-422/485(2 wire) | |
| PS-2000B | COM1 ^{*1} , COM2, COM3 ^{*1} , COM4 | - | - | |
| PS-3450A, PS-3451A, PS3000-BA, PS3001-BD | COM1, COM2 ^{*1*2} | COM2 ^{*1*2} | COM2 ^{*1*2} | |
| PS-3650A, PS-3651A | COM1 ^{*1} | - | - | |
| PS-3700A (Pentium®4-M) PS-3710A | COM1 ^{*1} , COM2 ^{*1} , COM3 ^{*2} , COM4 | COM3 ^{*2} | COM3 ^{*2} | |
| PS-3711A | COM1 ^{*1} , COM2 ^{*2} | COM2 ^{*2} | COM2 ^{*2} | |
| PL-3000B, PL-3600T, PL-3600K, PL-3700T, PL-3700K, PL-3900T | COM1 ^{*1*2} , COM2 ^{*1} , COM3, COM4 | COM1 ^{*1*2} | COM1 ^{*1*2} | |

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

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

DIP switch setting: RS-232C

| DIP switch | Setting | Description |
|------------|-------------------|---|
| 1 | OFF ^{*1} | Reserved (always OFF) |
| 2 | OFF | SIO type: RS-232C |
| 3 | OFF | 510 type. R5-252e |
| 4 | OFF | Output mode of SD (TXD) data: Always output |
| 5 | OFF | Terminal resistance (220 Ω) insertion to SD (TXD): None |
| 6 | OFF | Terminal resistance (220 Ω) 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 | NS (NIS) Multi control mode. Disabled |

*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 | 510 type. K5-422/465 |
| 4 | OFF | Output mode of SD (TXD) data: Always output |
| 5 | OFF | Terminal resistance (220 Ω) insertion to SD (TXD): None |
| 6 | OFF | Terminal resistance (220 Ω) 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 | NS (NIS) Auto control mode. Disabled |

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 | 510 type. K5-422/485 |
| 4 | OFF | Output mode of SD (TXD) data: Always output |
| 5 | OFF | Terminal resistance (220 Ω) insertion to SD (TXD): None |
| 6 | OFF | Terminal resistance (220 Ω) 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 | KS (K15) Auto control mode. Endoled |

2 Selection of External Device

Select the External Device to be connected to the Display.

| 💰 New Project File | | × |
|--------------------|-------------------------------|--|
| GP-Pro | Device/PLC | |
| | Maker YASKAWA Electric Corpor | ation |
| | Series MEMOBUS SIO | v |
| | 🗖 Use System Area | Refer to the manual of this Device/PLC |
| | Connection Method | |
| | Port COM1 💌 | |
| | | Go to Device/PLC Manual |
| | | Go to Device/FLC Manual |
| | | |
| Back | (B) Communication Settings | New Logic New Screen Cancel |

| Setup Items | Setup Description |
|-----------------|--|
| Maker | Select the maker of the External Device to be connected. Select "YASKAWA Electric Corporation". |
| Driver | Select a model (series) of the External Device to be connected and connection method. Select "MEMOBUS SIO". Check the External Device which can be connected in "MEMOBUS SIO" in system configuration. |
| Use System Area | Check this option when you synchronize the system data area of Display and the device (memory) of External Device. When synchronized, you can use the ladder program of External Device to switch the display or display the window on the display. Cf. GP-Pro EX Reference Manual Appendix "LS Area (Direct Access Method Area)" This can also be set in GP-Pro EX or in the Display's off-line mode. Cf. GP-Pro EX Reference Manual "Display Unit (System Area) Settings Guide" Cf. Maintenance/Troubleshooting Manual "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 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/PLC 1 | | | | | |
|--|---|--|--|--|--|
| Summary Change Device/PL | | | | | |
| Maker VASKAWA Electric Corporation Driver MEMOBUS SIO Port COM1 | - | | | | |
| Text Data Mode 1 Change | | | | | |
| Communication Settings | | | | | |
| SID Type ④ RS232C C RS422/485(2wire) C RS422/485(4wire) | | | | | |
| Speed 19200 | | | | | |
| Data Length 🔿 7 💿 8 | | | | | |
| Parity CINDNE CIEVEN CIDD | | | | | |
| Stop Bit 💿 1 💿 2 | | | | | |
| Flow Control O NONE O ER(DTR/CTS) O XON/XOFF | | | | | |
| Timeout 3 📑 (sec) | | | | | |
| Retry 2 📑 | | | | | |
| Wait To Send 0 💼 (ms) | | | | | |
| RI / VCC RI | | | | | |
| 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 Image: Series=MP900/2000/CP-9200SH,Slave Address=1 | | | | | |
| | | | | | |

Device Setting

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

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

| 💰 Individual | Device Sett | ings 🗙 |
|--|----------------|--------------|
| PLC1 | | |
| Series Please reconfirm you are using if y | | ettings that |
| Slave Address | 1 | * |
| | | Default |
| |)K (<u>D)</u> | Cancel |

Notes

- Conform the head address of the system area to GMW00000.
- When you connect 217IF of which version is "*****_21700_*****" or lower to the Display, set [Wait To Send] to [20ms].

- ◆ Ladder Software Setting
- 1 Right-click [root] in the browser of the ladder software "CP717" and select [Group Folder] from [New].

• Please refer to the manual of the ladder software for the version which supports the Control Pack Series.

- 2 The [New] dialog box is displayed. Enter the optional group name (ex. "GROUP") and click [OK].
- **3** The group folder (ex. "GROUP") is created under the [root] in the browser of "CP717". Right-click the folder and select [Order Folder] from [New].
- 4 The [New] dialog box is displayed. Enter the optional order name (ex. "ORDER") and click [OK].
- **5** [ORDER] is created under the [root]-[GROUP] in the browser of "CP717". Right-click it and select [PLC Type] from [New].
- **6** The [PLC Type] dialog box is displayed. Enter the optional PLC name and CPU name and select [CP-9200SH] for [Device Name], then click [OK].
- 7 The PLC folder (ex. "PLC") is created under the [root]-[GROUP] in the browser of "CP717". The CPU folder (ex. "CPU1") is created under the PLC folder. Double-click [CPU1] to display the [CPU Logon] dialog box.
- 8 Enter "User name" and "Password" optionally in the [CPU Logon] dialog box and click [OK].
- 9 Multiple folders are created under the [root]-[GROUP]-[PLC]-[CPU1] in the browser of "CP717". Double-click [Definition Folder]-[Module Configuration] to open the [Engineering Manager] window.
- 10 Select [CP-9200SH] in [Module] of the [No.00] field in the [Rack1] tab.
- 11 Select [CP-217] in [Module] of the same [No.] field as your slot number to define the link unit.
- **12** Double-click the same [No.] as your slot number to display the setting window.

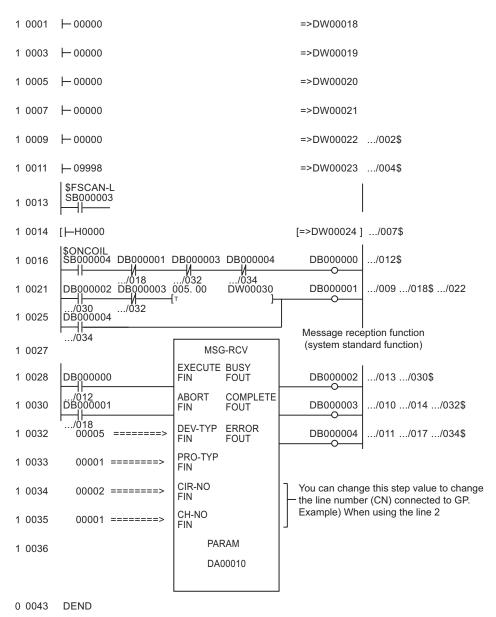
| Setup Items | Setup Description |
|-----------------------|---------------------------------------|
| Transmission Protocol | Memobus |
| Master/Slave | Slave |
| Device address | Device address of the External Device |
| Serial I/F | RS-232C |
| Transmission Mode | RTU |
| Data Length | 8Bit |
| Parity Bit | even |
| Stop Bit | 1Stop |
| Baud Rate | 19.2K |
| Send Delay | Not specified |

You need the ladder program to connect the Display to the Link I/F CP217IF by YASKAWA Electric Corporation. The ladder program example is shown below.

| NOTE • | This ladder program example enables to communicate the 1 CN port with the Display. Note that |
|--------|--|
| | each CN port requires the ladder program when you use multiple ports, CN1 to CN3, to |
| | communicate simultaneously. |

• Use the ladder software to perform the communication settings on the External Device. Those settings are not performed in this ladder program.

1 0000 "### MSG-RCV ###"



Notes

• Please refer to the manual of the ladder software for more detail on other setting description.

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.

| Devic | e/PLC1 | | | | | | |
|--|-----------------------|----------------------|--------------------|---------|--------------------------|-------|------------------|
| Sum | mary | | | | | D | hange Device/PLC |
| | Maker YASKAWA B | Electric Corporation | Driver MEM | OBUS | SIO | Port | COM1 |
| | Text Data Mode | 1 <u>Change</u> | | | | | |
| Com | munication Settings | | | | | | |
| | SIO Type | C RS232C | C RS422/485(2wire) | | RS422/485(4wire) | | |
| | Speed | 19200 | • | | | | |
| | Data Length | O 7 | • 8 | | | | |
| | Parity | C NONE | • EVEN | 0.0 | DDC | | |
| | Stop Bit | ⊙ 1 | O 2 | | | | |
| | Flow Control | C NONE | ER(DTR/CTS) | \circ | KON/XOFF | | |
| | Timeout | 3 📫 (s | sec) | | | | |
| | Retry | 2 ÷ | | | | | |
| | Wait To Send | n) 🗧 🛛 🔾 | ms) | | | | |
| | RI / VCC | © RI | O 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 | | | | | | | |
| Dev | ice-Specific Settings | | | | | | |
| | Allowable No. of Devi | | s) 📊 | | | | |
| | No. Device Nar | ne | Settings | | | | |
| | 👗 1 PLC1 | | Series=MP | 900/20 | 000/CP-9200SH,Slave Addr | ess=1 | |

Device Setting

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

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

| 💰 Individual | Device Set | tings 🛛 🗙 |
|--|----------------|---------------|
| PLC1 | | |
| Series Please reconfirm you are using if y | | settings that |
| Slave Address | 1 | • |
| | | Default |
| |)K (<u>D)</u> | Cancel |

Notes

- Conform the head address of the system area to GMW00000.
- When you connect 217IF of which version is "*****_21700_*****" or lower to the Display, set [Wait To Send] to [20ms].

- ◆ Ladder Software Setting
- 1 Right-click [root] in the browser of the ladder software "CP717" and select [Group Folder] from [New].

• Please refer to the manual of the ladder software for the version which supports the Control Pack Series.

- 2 The [New] dialog box is displayed. Enter the optional group name (ex. "GROUP") and click [OK].
- **3** The group folder (ex. "GROUP") is created under the [root] in the browser of "CP717". Right-click the folder and select [Order Folder] from [New].
- 4 The [New] dialog box is displayed. Enter the optional order name (ex. "ORDER") and click [OK].
- **5** [ORDER] is created under the [root]-[GROUP] in the browser of "CP717". Right-click it and select [PLC Type] from [New].
- **6** The [PLC Type] dialog box is displayed. Enter the optional PLC name and CPU name and select [CP-9200SH] for [Device Name], then click [OK].
- 7 The PLC folder (ex. "PLC") is created under the [root]-[GROUP] in the browser of "CP717". The CPU folder (ex. "CPU1") is created under the PLC folder. Double-click [CPU1] to display the [CPU Logon] dialog box.
- 8 Enter "User name" and "Password" optionally in the [CPU Logon] dialog box and click [OK].
- 9 Multiple folders are created under the [root]-[GROUP]-[PLC]-[CPU1] in the browser of "CP717". Double-click [Definition Folder]-[Module Configuration] to open the [Engineering Manager] window.
- 10 Select [CP-9200SH] in [Module] of the [No.00] field in the [Rack1] tab.
- 11 Select [CP-217] in [Module] of the same [No.] field as your slot number to define the link unit.
- **12** Double-click the same [No.] as your slot number to display the setting window.

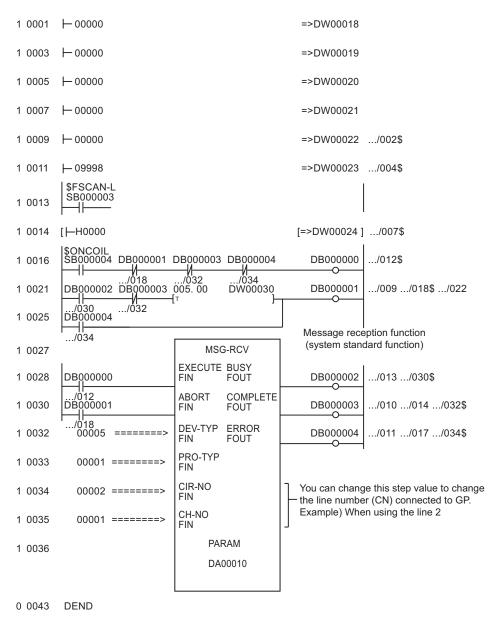
| Setup Items | Setup Description |
|-----------------------|---------------------------------------|
| Transmission Protocol | Memobus |
| Master/Slave | Slave |
| Device address | Device address of the External Device |
| Serial I/F | RS-485 |
| Transmission Mode | RTU |
| Data Length | 8Bit |
| Parity Bit | even |
| Stop Bit | 1Stop |
| Baud Rate | 19.2K |
| Send Delay | Not specified |

You need the ladder program to connect the Display to the Link I/F CP217IF by YASKAWA Electric Corporation. The ladder program example is shown below.

| NOTE | • | This ladder program example enables to communicate the 1 CN port with the Display. Note that |
|------|---|--|
| | | each CN port requires the ladder program when you use multiple ports, CN1 to CN3, to |
| | | communicate simultaneously. |

• Use the ladder software to perform the communication settings on the External Device. Those settings are not performed in this ladder program.

1 0000 "### MSG-RCV ###"



Notes

• Please refer to the manual of the ladder software for more detail on other setting description.

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.

| Devic | e/PLC 1 | | |
|-------|-----------------------|---------------------|--|
| Sumi | mary | | Change Device/PLC |
| | Maker YASKAWA E | lectric Corporation | Driver MEMOBUS SIO Port COM1 |
| | Text Data Mode | 1 <u>Change</u> | |
| Com | munication Settings | | |
| | SIO Type | • R\$232C | O RS422/485(2wire) O RS422/485(4wire) |
| | Speed | 19200 | V |
| | Data Length | O 7 | • 8 |
| | Parity | O NONE | EVEN ODD |
| | Stop Bit | ⊙ 1 | © 2 |
| | Flow Control | O NONE | ER(DTR/CTS) C XON/XOFF |
| | Timeout | 3 📫 (; | sec) |
| | Retry | 2 🔹 | |
| | Wait To Send | 0 🔅 (r | ms) |
| | RI / VCC | • BI | O VCC |
| | | Supply). If you use | t the 9th pin to RI [Input] the Digital's RS232C Default |
| Devi | ce-Specific Settings | | |
| | Allowable No. of Devi | ice/PLCs 16 Unit(| s) 📊 |
| | No. Device Nar | ne | Settings |
| | 👗 1 PLC1 | | Series=MP900/2000/CP-9200SH,Slave Address=1 |

Device Setting

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

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

| 💰 Individual Device 🗧 | Settings 🗙 |
|---|------------|
| PLC1 | |
| Series MP900/2 Please reconfirm all of addr you are using if you have c | |
| Slave Address 1 | • |
| | Default |
| OK (<u>O</u>) | Cancel |

Ladder Software Setting

- 1 Right-click [root] in the browser of the ladder software "MPE720" and select [Group Folder] from [New].
- **2** The [New] dialog box is displayed. Enter the optional group name (ex. "GROUP") and click [OK].
- **3** The group folder (ex. "GROUP") is created under the [root] in the browser of "MPE720". Right-click the folder and select [Order Folder] from [New].
- 4 The [New] dialog box is displayed. Enter the optional order name (ex. "ORDER") and click [OK].
- **5** [ORDER] is created under the [root]-[GROUP] in the browser of "MPE720". Right-click it and select [PLC Type] from [New].
- **6** The [PLC Type] dialog box is displayed. Enter the optional PLC name and CPU name and select your External Device for [Device Name], then click [OK].
- 7 The PLC folder (ex. "PLC") is created under the [root]-[GROUP] in the browser of "MPE720". The CPU folder (ex. "CPU1") is created under the PLC folder. Double-click [CPU1] to display the [CPU Logon] dialog box.
- 8 Enter "User name" and "Password" optionally in the [CPU Logon] dialog box and click [OK].
- 9 Multiple folders are created under the [root]-[GROUP]-[PLC]-[CPU1] in the browser of "MPE720".
 Double-click [Definition Folder]-[Module Configuration] to open the [Engineering Manager] window.
- 10 Select your link unit in [Module] of the [No.00] field in the [Rack1] tab.
- 11 Double-click the same [No.] field as your slot number to display the setting window.

| Setup Items | Setup Description |
|------------------------------|---------------------------------------|
| Transmission Protocol | Memobus |
| Master/Slave | Slave |
| Device address | Device address of the External Device |
| Serial I/F | RS-232C |
| Transmission Mode | RTU |
| Data Length | 8Bit |
| Parity Bit | even |
| Stop Bit | 1Stop |
| Baud Rate | 19.2K |
| Send Delay | Not specified |
| Auto Reception ^{*1} | Not specified |

*1 When [Auto Reception] is set to [Not specified], the ladder program is required to communicate the Display with the External Device. It is not required in case of [Specified].

NOTE

- The ladder program is required when connecting the Display to CN1, CN2, CN3 on the transmission module CP-217IF by YASKAWA Electric Corporation, or to the memobus port (port1, port2) on the CPU.
- This ladder program example enables to communicate the 1 connecting port with the Display. Note that each connecting port requires the ladder program when you use multiple connecting ports to communicate simultaneously.
- · Use the ladder software to perform the communication settings on the External Device. Those settings are not performed in this ladder program.

| 1 0000 | SFSCAN-L SB000003 | | | | | | | | |
|--------|----------------------------|--|--------------|---|-----------|--------------------------|----------------------------|-------------|----------------------------|
| 1 0001 | IFON | | | | | | | | |
| 2 0002 | | cute only once when oower is turned on. | ⇒DW00008 | Coil offset setting | | | | | |
| 2 0004 | ⊢ 00000 of th | alize the parameter e message reception tion.) | ⇒DW00009 | Input relay offset setting | | | | | |
| 2 0006 | ⊢ 00000 | | ⇒DW00010 | Input register offset setting | | | | | |
| 2 0008 | ⊢ 00000 | | ⇒DW00011 | Holding register offset setting | | | | | |
| 2 0010 | ⊢ 00000 | | ⇒DW00012 | Write range LO | | | | | |
| 2 0012 | ⊣ 32787 | | ⇒DW00013 | Write range HI | | | | | |
| 2 0014 | ⊢ 00000 | | ⇒DW00014 | Register for system clear | | | | | |
| 2 0016 | | | ⇒DW00024 | Normal path counter clear …/036@ | 1 0036 [| INC | Normal counter DW00024] | | |
| 2 0017 | | | ⇒DW00025 | Error counter clear | 1 0037 | Error complet DB00021 | | | |
| 1 0018 | IEND | 1 | | | | /034 | | | |
| 1 0019 | | MSC-RCV | Messag | e reception function (system standard function) | 1 0038 | | Error counter | | |
| 1 0020 | SB000004 | EXCUTE BUS | ÷ L | 000210 | 2 0039 | INC | DW00025 | | Process result save |
| 1 0022 | SB000004 | ABORT COM | Complete | 000211 · · · /035 | 2 0040 | DW0000 | 0 | ⇒DW00026 | •••/053S Status save |
| 1 0024 | 00005 | FIN FOU DEV-TYP ERR FIN FOU | OR Error | 000212 /037 | 2 0042 | DW0000 | 1 | ⇒DW00027 | |
| 1 0025 | 00001 | PRO-TYP FIN | ' <u> </u> | | 2 0044 | DW0000 | 2 | ⇒DW00028 | Command receiving ST# hold |
| 1 0026 | 00001 | CIR-NO FIN | | et 8 to Port1, Port2 on MP930CPU. et 5 when using CN1, CN2, CN3 on CP-217IF. | 2 0046 | DW00004 | 4 | ⇒DW00029 | FC save |
| 1 0027 | 00001 | CH-NO FIN | | | 2 0048 | DW0000 | 5 | ⇒DW00030 | Data address hold |
| 1 0028 | | PARAM DA00000 | | | 2 0050 | DW0000 | 6 | ⇒DW00031 | Data size hold |
| | | DA00000 |] E | nter the number of Port or CN connected to GP. | 2 0052 | DW0000 | 7 | ⇒DW00032 | Target CP# save |
| 1 0035 | Normal complet DB000211 | te | | | 1 0054 | IEND | | Auto recep | tion function invalid (*1) |
| | | | | | 1 0056 | SB000 | 004 | | SB006940 |
| | 1032 | | | | 1 0058 | SB000 | 004 | | SB006941 |
| | | | | | 0 0060 | DEND | | | I |
| | | | | | | | | | |
| N | DTE | To con | municate | e with the invalid auto recep | otion fur | nction | on port 1 or | port 2 of t | he MP920 |

series CPU unit, "Auto reception function invalid (*1)" of the above ladder program example is needed.

In the above ladder program example, the auto reception function of port 1 becomes invalid. To make the auto reception function of port 2 invalid, change SB006490, SB006941 of the "Auto reception function invalid (*1)" to SB006950 and SB006951.

Notes

Please refer to the manual of the ladder software for more detail on other setting description.

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.

| Devi | ce/PLC 1 | | |
|------|---------------------------------------|----------------------|---|
| Sur | nmary | | Change Device/PLC |
| | Maker YASKAWA B | Electric Corporation | n Driver MEMOBUS SIO Port COM1 |
| | Text Data Mode | 1 <u>Change</u> | |
| Con | nmunication Settings | | |
| | SIO Type | C RS232C | C RS422/485(2wire) © RS422/485(4wire) |
| | Speed | 19200 | • |
| | Data Length | C 7 | • 8 |
| | Parity | C NONE | EVEN O ODD |
| | Stop Bit | © 1 | C 2 |
| | Flow Control | C NONE | ER(DTR/CTS) O XON/XOFF |
| | Timeout | 3 📫 (s | (sec) |
| | Retry | 2 🔹 | |
| | Wait To Send | 0 🔅 (1 | (ms) |
| | RI / VCC | © BI | C VCC |
| | | Supply). If you use | ethe 9th pin to RI (Input) ethe Digital's RS232C |
| | | 0 0000011 10 100. | Default |
| Dev | /ice-Specific Settings | | |
| | Allowable No. of Dev No. Device Na | | ISJ Will Settings |
| | 👗 1 PLC1 | | Series=MP900/2000/CP-9200SH,Slave Address=1 |

Device Setting

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

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

| 💰 Individual | Device Sett | ings | × |
|---------------|---------------------------------------|-----------|---|
| PLC1 | | | |
| Series | MP900/2000/ | CP-9200SH | • |
| | n all of address s you have change | | |
| Slave Address | 1 | 1 | - |
| | | Default | |
| | OK (<u>D)</u> | Cancel | |

Ladder Software Setting

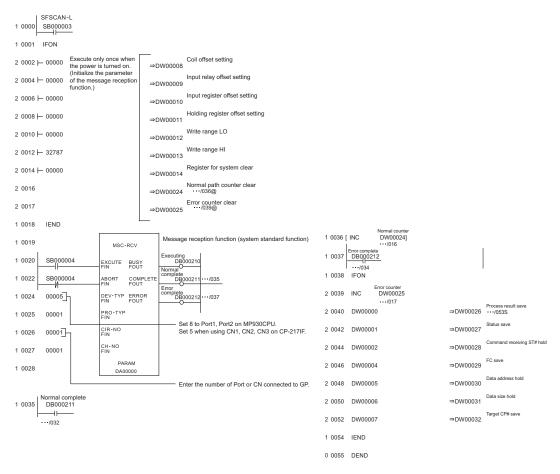
- 1 Right-click [root] in the browser of the ladder software "MPE720" and select [Group Folder] from [New].
- **2** The [New] dialog box is displayed. Enter the optional group name (ex. "GROUP") and click [OK].
- **3** The group folder (ex. "GROUP") is created under the [root] in the browser of "MPE720". Right-click the folder and select [Order Folder] from [New].
- 4 The [New] dialog box is displayed. Enter the optional order name (ex. "ORDER") and click [OK].
- **5** [ORDER] is created under the [root]-[GROUP] in the browser of "MPE720". Right-click it and select [PLC Type] from [New].
- **6** The [PLC Type] dialog box is displayed. Enter the optional PLC name and CPU name and select your External Device for [Device Name], then click [OK].
- 7 The PLC folder (ex. "PLC") is created under the [root]-[GROUP] in the browser of "MPE720". The CPU folder (ex. "CPU1") is created under the PLC folder. Double-click [CPU1] to display the [CPU Logon] dialog box.
- 8 Enter "User name" and "Password" optionally in the [CPU Logon] dialog box and click [OK].
- 9 Multiple folders are created under the [root]-[GROUP]-[PLC]-[CPU1] in the browser of "MPE720".
 Double-click [Definition Folder]-[Module Configuration] to open the [Engineering Manager] window.
- 10 Select your link unit in [Module] of the [No.00] field in the [Rack1] tab.
- 11 Double-click the same [No.] field as your slot number to display the setting window.

| Setup Items | Setup Description |
|------------------------------|---------------------------------------|
| Transmission Protocol | Memobus |
| Master/Slave | Slave |
| Device address | Device address of the External Device |
| Serial I/F | RS-485 |
| Transmission Mode | RTU |
| Data Length | 8Bit |
| Parity Bit | even |
| Stop Bit | 1Stop |
| Baud Rate | 19.2K |
| Send Delay | Not specified |
| Auto Reception ^{*1} | Not specified |

*1 When [Auto Reception] is set to [Not specified], the ladder program is required to communicate the Display with the External Device. It is not required in case of [Specified].

NOTE

- The ladder program is required when connecting the Display to CN1, CN2, CN3 on the transmission module CP-217IF by YASKAWA Electric Corporation, or to the memobus port (port1, port2) on the CPU.
- This ladder program example enables to communicate the 1 connecting port with the Display. Note that each connecting port requires the ladder program when you use multiple connecting ports to communicate simultaneously.
- Use the ladder software to perform the communication settings on the External Device. Those settings are not performed in this ladder program.



Notes

Please refer to the manual of the ladder software for more detail on other setting description.

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 | | | | | Cł | ange Device/PLC |
| Maker YASKAWA Elec | stric Corporation | Driver MEM | OBUS SI | 0 | Port | COM1 |
| Text Data Mode 1 | Change | | | | | |
| Communication Settings | | | | | | |
| SIO Type 🔍 | D RS232C 🛛 🖲 | RS422/485(2wire) | C | RS422/485(4wire) | | |
| Speed | 19200 | • | | | | |
| Data Length 🤇 | 7 0 | 8 | | | | |
| Parity C | NONE 🔍 | EVEN | O 000 |) | | |
| Stop Bit | 01 0 | 2 | | | | |
| Flow Control | D NONE 💽 | ER(DTR/CTS) | O XOM | N/XOFF | | |
| Timeout | 3 🕂 (sec) | | | | | |
| Retry 2 | 2 | | | | | |
| Wait To Send |) 🕂 (ms) | | | | | |
| RI/VCC @ | D RI C | | | | | |
| In the case of RS232C or VCC (5V Power Sup | | | :) | | | |
| Isolation Unit, please s | | : Digitalis Hozozo | | Default | | |
| Device-Specific Settings | | | | | | |
| Allowable No. of Device/ | /PLCs 16 Unit(s) | the state | | | | |
| No. Device Name | | Settings | | | | |
| 👗 1 PLC1 | | Series=MPS | 900/2000 |)/CP-9200SH,Slave Addre | ss=1 | |

Device Setting

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

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

| 💰 Individual | Device Sett | ings 🗙 |
|---------------|--|-------------|
| PLC1 | | |
| Series | MP900/2000/0 | CP-9200SH 💌 |
| | n all of address si you have change | |
| Slave Address | 1 | • |
| | | Default |
| | DK (<u>D)</u> | Cancel |

Ladder Software Setting

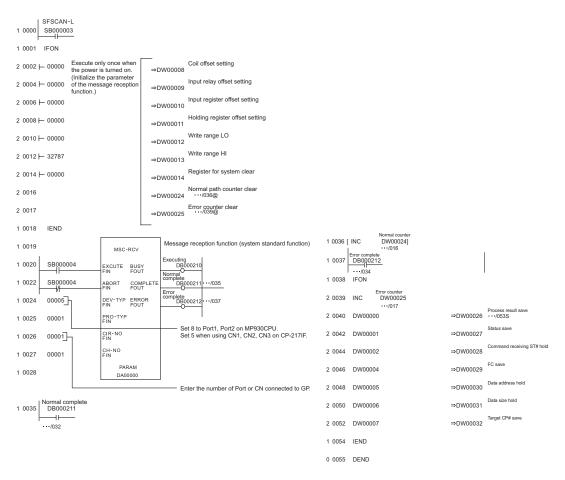
- 1 Right-click [root] in the browser of the ladder software "MPE720" and select [Group Folder] from [New].
- **2** The [New] dialog box is displayed. Enter the optional group name (ex. "GROUP") and click [OK].
- **3** The group folder (ex. "GROUP") is created under the [root] in the browser of "MPE720". Right-click the folder and select [Order Folder] from [New].
- 4 The [New] dialog box is displayed. Enter the optional order name (ex. "ORDER") and click [OK].
- **5** [ORDER] is created under the [root]-[GROUP] in the browser of "MPE720". Right-click it and select [PLC Type] from [New].
- **6** The [PLC Type] dialog box is displayed. Enter the optional PLC name and CPU name and select your External Device for [Device Name], then click [OK].
- 7 The PLC folder (ex. "PLC") is created under the [root]-[GROUP] in the browser of "MPE720". The CPU folder (ex. "CPU1") is created under the PLC folder. Double-click [CPU1] to display the [CPU Logon] dialog box.
- 8 Enter "User name" and "Password" optionally in the [CPU Logon] dialog box and click [OK].
- 9 Multiple folders are created under the [root]-[GROUP]-[PLC]-[CPU1] in the browser of "MPE720".
 Double-click [Definition Folder]-[Module Configuration] to open the [Engineering Manager] window.
- 10 Select your link unit in [Module] of the [No.00] field in the [Rack1] tab.
- 11 Double-click the same [No.] field as your slot number to display the setting window.

| Setup Items | Setup Description |
|------------------------------|---------------------------------------|
| Transmission Protocol | Memobus |
| Master/Slave | Slave |
| Device address | Device address of the External Device |
| Serial I/F | RS-485 |
| Transmission Mode | RTU |
| Data Length | 8Bit |
| Parity Bit | even |
| Stop Bit | 1Stop |
| Baud Rate | 19.2K |
| Send Delay | Not specified |
| Auto Reception ^{*1} | Not specified |

*1 When [Auto Reception] is set to [Not specified], the ladder program is required to communicate the Display with the External Device. It is not required in case of [Specified].

NOTE

- The ladder program is required when connecting the Display to CN1, CN2, CN3 on the transmission module CP-217IF by YASKAWA Electric Corporation, or to the memobus port (port1, port2) on the CPU.
- This ladder program example enables to communicate the 1 connecting port with the Display. Note that each connecting port requires the ladder program when you use multiple connecting ports to communicate simultaneously.
- Use the ladder software to perform the communication settings on the External Device. Those settings are not performed in this ladder program.



Notes

Please refer to the manual of the ladder software for more detail on other setting description.

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/PLC1 | |
|--|------------------------|
| Summary | Change Device/PLC |
| Maker VASKAWA Electric Corporation Driver MEMOBUS SID | Port COM1 |
| Text Data Mode 1 Change | |
| Communication Settings | |
| SIO Type ③ RS232C | 422/485(4wire) |
| Speed 19200 💌 | |
| Data Length C 7 💿 8 | |
| Parity ONONE OEVEN ODD | |
| Stop Bit 💿 1 💿 2 | |
| Flow Control C NONE C ER(DTR/CTS) C XON/XO | FF |
| Timeout 3 📑 (sec) | |
| Retry 2 | |
| Wait To Send 0 🔆 (ms) | |
| 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 | 9200SH,Slave Address=1 |
| 1 PLC1 | 9200SH,Slave Address=1 |

Device Setting

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

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

| 💰 Individual Device Settings 💦 🎽 | ٢ |
|--|---|
| PLC1 | |
| Series MP900/2000/CP-9200SH Please reconfirm all of address settings that you are using if you have changed the series. Slave Address 1 | |
| Default | I |
| OK (<u>0</u>) Cancel | |

Ladder Software Setting

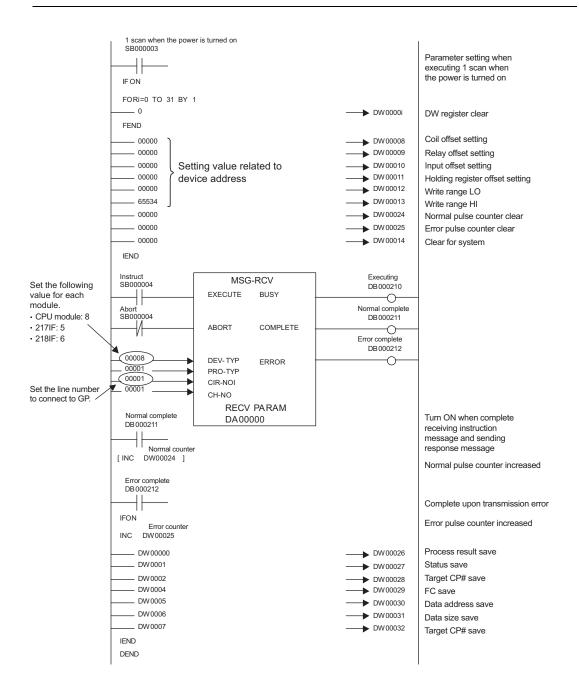
- 1 Right-click [root] in the browser of the ladder software "MPE720" and select [Group Folder] from [New].
- **2** The [New] dialog box is displayed. Enter the optional group name (ex. "GROUP") and click [OK].
- **3** The group folder (ex. "GROUP") is created under the [root] in the browser of "MPE720". Right-click the folder and select [Order Folder] from [New].
- 4 The [New] dialog box is displayed. Enter the optional order name (ex. "ORDER") and click [OK].
- **5** [ORDER] is created under the [root]-[GROUP] in the browser of "MPE720". Right-click it and select [PLC Type] from [New].
- **6** The [PLC Type] dialog box is displayed. Enter the optional PLC name (ex. "PLC") and select your External Device for [Device Name], then click [OK].
- 7 The PLC folder (ex. "PLC") is created under the [root]-[GROUP] in the browser of "MPE720". Double-click [PLC] to display the [CPU Logon] dialog box.
- 8 Enter "User name" and "Password" optionally in the [CPU Logon] dialog box and click [OK].
- **9** Multiple folders are created under the [root]-[GROUP]-[PLC] in the browser of "MPE720". Double-click [Definition Folder]-[Module Configuration] to open the [Engineering Manager] window.
- 10 Select your link unit in [Module] of the same [No.] field as your slot number in [Controller].
- 11 Double-click the same [No.] field as your slot number to display the setting window.

| Setup Items | Setup Description |
|------------------------------|---------------------------------------|
| Transmission Protocol | Memobus |
| Master/Slave | Slave |
| Device address | Device address of the External Device |
| Serial I/F | RS-232C |
| Transmission Mode | RTU |
| Data Length | 8Bit |
| Parity Bit | even |
| Stop Bit | 1Stop |
| Baud Rate | 19.2K |
| Send Delay | Not specified |
| Auto Reception ^{*1} | Not specified |

*1 When [Auto Reception] is set to [Not specified], the ladder program is required to communicate the Display with the External Device. It is not required in case of [Specified].

NOTE

- This ladder program example enables to communicate the 1 connecting port with the Display. Note that each connecting port requires the ladder program when you use multiple connecting ports to communicate simultaneously.
- Note that each connector requires the ladder program when you connect the RS232C connector, the RS422 connector on 217IF-01, the RS232C connector on 218IF-01, and the RS232C connector on 218IF-02 simultaneously.
- Use the ladder software to perform the communication settings on the External Device. Those settings are not performed in this ladder program.



Notes

• Please refer to the manual of the ladder software for more detail on other setting description.

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 | e/PLC 1 | | |
|--------|---|---------------------|--|
| Sum | mary | | Change Device/PLC |
| | Maker YASKAWA B | lectric Corporation | Driver MEMOBUS SIO Port COM1 |
| | Text Data Mode | 1 <u>Change</u> | |
| Comr | munication Settings | | |
| | SIO Type | C RS232C | O RS422/485(2wire) |
| | Speed | 19200 | V |
| | Data Length | O 7 | • 8 |
| | Parity | O NONE | EVEN ODD |
| | Stop Bit | ⊙ 1 | © 2 |
| | Flow Control | O NONE | ER(DTR/CTS) C XON/XOFF |
| | Timeout | 3 📫 (; | sec) |
| | Retry | 2 🔹 | |
| | Wait To Send | 0 🔅 (r | ms) |
| | RI / VCC | © BI | O VCC |
| | | Supply). If you use | t the 9th pin to RI (Input) the Digital's RS232C Default |
| | | | |
| | ce-Specific Settings Allowable No. of Devi | | |
| | Allowable No. or Devi No. Device Nar | | sj uig Settings |
| [| 👗 1 PLC1 | | Series=MP900/2000/CP-9200SH,Slave Address=1 |

Device Setting

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

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

| 💣 Individual Device Sett | ings 🗙 |
|--|--------------|
| PLC1 | |
| Series MP900/2000/0 Please reconfirm all of address s you are using if you have change | ettings that |
| Slave Address 1 | - |
| | Default |
| OK (<u>0</u>) | Cancel |

Ladder Software Setting

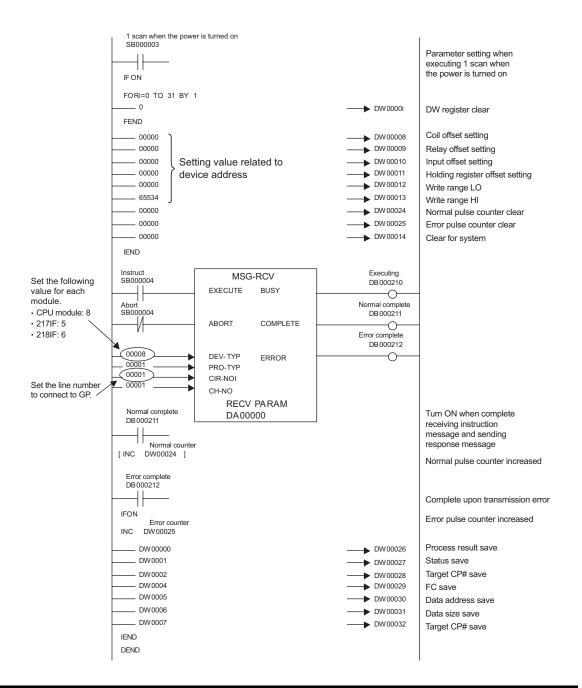
- 1 Right-click [root] in the browser of the ladder software "MPE720" and select [Group Folder] from [New].
- **2** The [New] dialog box is displayed. Enter the optional group name (ex. "GROUP") and click [OK].
- **3** The group folder (ex. "GROUP") is created under the [root] in the browser of "MPE720". Right-click the folder and select [Order Folder] from [New].
- 4 The [New] dialog box is displayed. Enter the optional order name (ex. "ORDER") and click [OK].
- **5** [ORDER] is created under the [root]-[GROUP] in the browser of "MPE720". Right-click it and select [PLC Type] from [New].
- **6** The [PLC Type] dialog box is displayed. Enter the optional PLC name (ex. "PLC") and select your External Device for [Device Name], then click [OK].
- 7 The PLC folder (ex. "PLC") is created under the [root]-[GROUP] in the browser of "MPE720". Double-click [PLC] to display the [CPU Logon] dialog box.
- 8 Enter "User name" and "Password" optionally in the [CPU Logon] dialog box and click [OK].
- **9** Multiple folders are created under the [root]-[GROUP]-[PLC] in the browser of "MPE720". Double-click [Definition Folder]-[Module Configuration] to open the [Engineering Manager] window.
- 10 Select your link unit in [Module] of the same [No.] field as your slot number in [Controller].
- 11 Double-click the same [No.] field as your slot number to display the setting window.

| Setup Items | Setup Description |
|------------------------------|---------------------------------------|
| Transmission Protocol | Memobus |
| Master/Slave | Slave |
| Device address | Device address of the External Device |
| Serial I/F | RS-485 |
| Transmission Mode | RTU |
| Data Length | 8Bit |
| Parity Bit | even |
| Stop Bit | 1Stop |
| Baud Rate | 19.2K |
| Send Delay | Not specified |
| Auto Reception ^{*1} | Not specified |

*1 When [Auto Reception] is set to [Not specified], the ladder program is required to communicate the Display with the External Device. It is not required in case of [Specified].

NOTE

- This ladder program example enables to communicate the 1 connecting port with the Display. Note that each connecting port requires the ladder program when you use multiple connecting ports to communicate simultaneously.
- Note that each connector requires the ladder program when you connect the RS232C connector, the RS422 connector on 217IF-01, the RS232C connector on 218IF-01, and the RS232C connector on 218IF-02 simultaneously.
- Use the ladder software to perform the communication settings on the External Device. Those settings are not performed in this ladder program.



Notes

• Please refer to the manual of the ladder software for more detail on other setting description.

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/PLC1 | |
|--|--------|
| Summary Change Devic | se/PLC |
| Maker VASKAWA Electric Corporation Driver MEMOBUS SIO Port COM1 | |
| Text Data Mode 1 Change | |
| Communication Settings | |
| SIO Type C RS232C © RS422/485(2wire) C RS422/485(4wire) | |
| Speed 19200 | |
| Data Length O 7 📀 8 | |
| Parity O NONE O EVEN O ODD | |
| Stop Bit 💿 1 🔿 2 | |
| Flow Control C NONE C ER(DTR/CTS) C XON/XOFF | |
| Timeout 3 🚔 (sec) | |
| Retry 2 | |
| Wait To Send 0 📑 (ms) | |
| RI/VCC © RI O 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 ISeries=MP900/2000/CP-9200SH,Slave Address=1 | |

Device Setting

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

| 💰 Individual Device Sett | ings 🗙 |
|---|-------------------|
| PLC1 | |
| Series MP900/2000/C Please reconfirm all of address se you are using if you have change | ettings that |
| Slave Address 1 | Default Cancel |

Ladder Software Setting

- 1 Right-click [root] in the browser of the ladder software "MPE720" and select [Group Folder] from [New].
- **2** The [New] dialog box is displayed. Enter the optional group name (ex. "GROUP") and click [OK].
- **3** The group folder (ex. "GROUP") is created under the [root] in the browser of "MPE720". Right-click the folder and select [Order Folder] from [New].
- 4 The [New] dialog box is displayed. Enter the optional order name (ex. "ORDER") and click [OK].
- **5** [ORDER] is created under the [root]-[GROUP] in the browser of "MPE720". Right-click it and select [PLC Type] from [New].
- **6** The [PLC Type] dialog box is displayed. Enter the optional PLC name (ex. "PLC") and select your External Device for [Device Name], then click [OK].
- 7 The PLC folder (ex. "PLC") is created under the [root]-[GROUP] in the browser of "MPE720". Double-click [PLC] to display the [CPU Logon] dialog box.
- 8 Enter "User name" and "Password" optionally in the [CPU Logon] dialog box and click [OK].
- **9** Multiple folders are created under the [root]-[GROUP]-[PLC] in the browser of "MPE720". Double-click [Definition Folder]-[Module Configuration] to open the [Engineering Manager] window.
- 10 Select your link unit in [Module] of the same [No.] field as your slot number in [Controller].
- 11 Double-click the same [No.] field as your slot number to display the setting window.

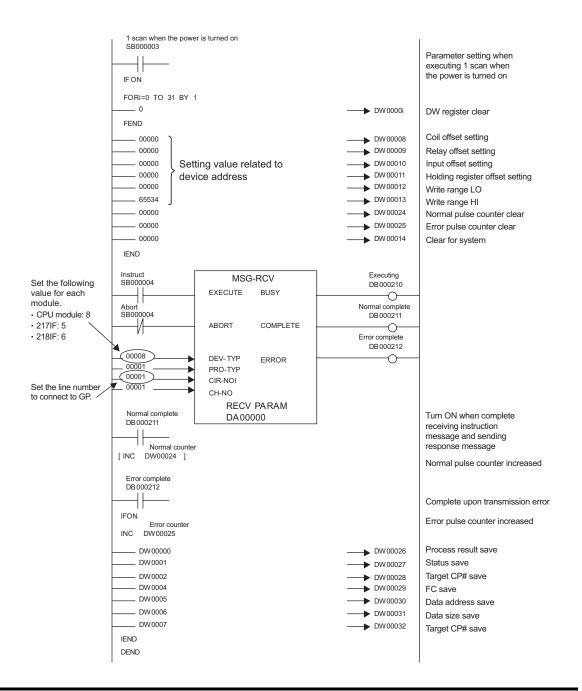
| Setup Items | Setup Description |
|------------------------------|---------------------------------------|
| Transmission Protocol | Memobus |
| Master/Slave | Slave |
| Device address | Device address of the External Device |
| Serial I/F | RS-485 |
| Transmission Mode | RTU |
| Data Length | 8Bit |
| Parity Bit | even |
| Stop Bit | 1Stop |
| Baud Rate | 19.2K |
| Send Delay | Not specified |
| Auto Reception ^{*1} | Not specified |

*1 When [Auto Reception] is set to [Not specified], the ladder program is required to communicate the Display with the External Device. It is not required in case of [Specified].

Example of Ladder Program

NOTE

- This ladder program example enables to communicate the 1 connecting port with the Display. Note that each connecting port requires the ladder program when you use multiple connecting ports to communicate simultaneously.
- Note that each connector requires the ladder program when you connect the RS232C connector, the RS422 connector on 217IF-01, the RS232C connector on 218IF-01, and the RS232C connector on 218IF-02 simultaneously.
- Use the ladder software to perform the communication settings on the External Device. Those settings are not performed in this ladder program.



Notes

• Please refer to the manual of the ladder software for more detail on other setting description.

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 YASKAWA I | Electric Corporation | Driver MEMOBUS SIO Port COM1 |
| Text Data Mode | 1 <u>Change</u> | |
| Communication Settings | | |
| SIO Type | • R\$232C | C RS422/485(2wire) C RS422/485(4wire) |
| Speed | 19200 | × |
| Data Length | 0.7 | • 8 |
| Parity | O NONE | C EVEN C ODD |
| Stop Bit | ⊙ 1 | O 2 |
| Flow Control | O NONE | ER(DTR/CTS) C XON/XOFF |
| Timeout | 3 📫 (| sec) |
| Retry | 2 + | |
| Wait To Send | 0 🕂 (| ms) |
| RI / VCC | • BI | C VCC |
| In the case of RS2 or VCC (5V Power | 32C, you can seled Supply). If you use | st the 9th pin to RI (Input) e the Digital's RS232C |
| Isolation Unit, pleas | se select it to VCC. | Default |
| Device-Specific Settings | | |
| Allowable No. of Dev | | |
| No. Device Na | me | Settings |
| | | |

Device Setting

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

| 💰 Individual Device Sett | ings 🗙 |
|---|---------|
| PLC1 | |
| Series MEMOCON GL | |
| Please reconfirm all of address s you are using if you have change | |
| Slave Address 1 | • |
| | Default |
| OK (<u>D)</u> | Cancel |

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

- ◆ Procedure
- **1** Connect the Link I/F to a PC.
- 2 Start the ladder software and create a new project.

Double click [CPU20] of [System Configuration] in the tree view to display the [CPU Parameter Settings] dialog box.

- **3** Select the CPU of the connecting External Device from [PC Type].
- 4 Click the [RS232C Port Setting] tab and perform the communication settings of the External Device.

| Setup Items | Setup Description |
|-------------|-------------------|
| Mode | RTU |
| Data Bit | 8 (Fixed) |
| Parity | EVEN |
| Stop Bit | 1 |
| Speed | 19200 |
| Address | 1 |
| Delay | 0 |

- 5 Select [Loader], [Project File to PC] from the [Tool] menu and load the communication settings to the External Device.
- **6** Turn ON the power of the External Device again.

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/PLC 1 | |
|--|----------|
| Summary Change Device/PL | <u>c</u> |
| Maker VASKAWA Electric Corporation Driver MEMOBUS SID Port COM1 | |
| Text Data Mode 1 Change | |
| Communication Settings | |
| SID Type C RS232C C RS422/485(2wire) © RS422/485(4wire) | |
| Speed 19200 💌 | |
| Data Length 🔿 7 📀 8 | |
| Parity C NONE C EVEN C ODD | |
| Stop Bit | |
| Flow Control C NONE C ER(DTR/CTS) C XON/XOFF | |
| Timeout 3 😑 (sec) | |
| Retry 2 🚔 | |
| Wait To Send 0 🚔 (ms) | |
| RI/VCC © RI O 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 No. Device Name Image: Plant state st | |
| | |

Device Setting

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

| 💰 Individual Device Sett | ings 🗙 |
|---|---------|
| PLC1 | |
| Series MEMOCON GL | |
| Please reconfirm all of address s you are using if you have change | |
| Slave Address 1 | • |
| | Default |
| OK (<u>D</u>) | Cancel |

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

- ◆ Procedure
- **1** Connect the Link I/F to a PC.
- 2 Start the ladder software and create a new project.Double click [Port Settings] of [System Configuration] in the tree view to display the [COMM. Parameter Settings] dialog box.
- 3 Perform the communication settings for the COMM. port of the channel to be used.

| Setup Items | Setup Description |
|-------------|-------------------|
| Mode | RTU |
| Data Bit | 8 (Fixed) |
| Parity | EVEN |
| Stop Bit | 1 |
| Speed | 19200 |
| Address | 1 |
| Delay | 0 |

- 4 Select [Loader], [Project File to PC] from the [Tool] menu and load the communication settings to the External Device.
- 5 Turn ON the power of the External Device again.

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/PLC 1 | |
|---|---------------------------------------|
| Summary | Change Device/PLC |
| Maker YASKAWA Electric Corporation | Driver MEMOBUS SIO Port COM1 |
| Text Data Mode 1 Change | |
| Communication Settings | |
| SIO Type 💿 RS232C 📿 | C RS422/485(2wire) C RS422/485(4wire) |
| Speed 19200 | |
| Data Length 🔿 7 💽 | 8 |
| Parity C NONE 🔍 | EVEN O ODD |
| Stop Bit 💿 1 🔿 | 2 |
| Flow Control C NONE @ | ER(DTR/CTS) C XON/XOFF |
| Timeout 3 📑 (sec) |) |
| Retry 2 🗧 | |
| Wait To Send 0 📑 (ms) | |
| RI / VCC RI / VCC | VCC |
| In the case of RS232C, you can select the or VCC (5V Power Supply). If you use the | |
| Isolation Unit, please select it to VCC. | Digital's H32320 Default |
| Device-Specific Settings | |
| Allowable No. of Device/PLCs 16 Unit(s) | Rect . |
| No. Device Name | Settings |
| 👗 1 PLC1 | Series=MEMOCON SC,Slave Address=1 |

Device Setting

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

| 💰 Individual Device Sett | ings 🗙 |
|---|---------|
| PLC1 | |
| Series MEMOCON SC | |
| Please reconfirm all of address s you are using if you have change | |
| Slave Address 1 | - |
| | Default |
| OK (<u>D</u>) | Cancel |

Use the process computer for communication settings of the External Device. Please refer to the manual of the External Device for more details.

Procedure

1 Perform the following communication settings in the process computer.

| Setup Items | Setup Description |
|----------------|-------------------|
| Mode | RTU |
| Data Bit | 8 (Fixed) |
| Parity Setting | Enable |
| Parity | EVEN |
| Stop Bit | 1 |
| Speed | 19200 |
| Address | 1 |
| Delay | 0 |

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/PLC 1 | | | | | | | | | |
|---------------|----------------|---|-----------|-----------------|--------|-----|-----------------------|----------|------------------|
| Summary | | | | | | | | <u>C</u> | hange Device/PLC |
| Maker 🗗 | YASKAWA Ele | ectric Corporation | | Driver N | IEMOE | 3US | SIO | Port | COM1 |
| Text Data | a Mode | 1 <u>Change</u> | | | | | | | |
| Communicatio | n Settings | | | | | | | | |
| SIO Type | • | C RS232C | O RS | 422/485(2) | wire) | | SS422/485(4wire) | | |
| Speed | | 19200 | - | | | | | | |
| Data Len | igth | O 7 | • 8 | | | | | | |
| Parity | | C NONE | €EV | 'EN | (| 0.0 | DDC | | |
| Stop Bit | | ● 1 | C 2 | | | | | | |
| Flow Con | trol | C NONE | • EF | (DTR/CTS |) (| •> | KON/XOFF | | |
| Timeout | | 3 🕂 (s | ec) | | | | | | |
| Retry | | 2 + | | | | | | | |
| Wait To ! | Send | 0 🗦 (n | ns) | | | | | | |
| RI / VCC | | 🖲 BI | O VO | | | | | | |
| In the c | ase of RS232 | C, you can select upply). If you use | t the 9th | n pin to RI (I | Input) | | | | |
| Isolation | n Unit, please | select it to VCC. | the Dig | jildi sin bizbi | 26 | | Default | | |
| Device-Specif | ic Settings | | | | | | | | |
| | - | e/PLCs 16 Unit(s | :) | | | | | | |
| | Device Name | 9 | | Settings | | | | | |
| % 1 | PLC1 | | 1 | Series= | =MEM0 | 000 | IN SC,Slave Address=1 | | |

Device Setting

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

| 💰 Individual Device Setting | s 🗙 | | | | |
|--|---------|--|--|--|--|
| PLC1 | | | | | |
| Series MEMOCON SC | • | | | | |
| Please reconfirm all of address settings that you are using if you have changed the series. | | | | | |
| Slave Address 1 | * | | | | |
| | Default | | | | |
| OK (<u>0</u>) Ca | ncel | | | | |

Use the process computer for communication settings of the External Device. Please refer to the manual of the External Device for more details.

Procedure

1 Perform the following communication settings in the process computer.

| Setup Items | Setup Description |
|----------------|-------------------|
| Mode | RTU |
| Data Bit | 8 (Fixed) |
| Parity Setting | Enable |
| Parity | EVEN |
| Stop Bit | 1 |
| Speed | 19200 |
| Address | 1 |
| Delay | 0 |

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/PLC 1 | | |
|-----------------|---|--|
| Summary | | Change Device/PLC |
| Maker 🕅 | ASKAWA Electric Corporati | ion Driver MEMOBUS SIO Port COM1 |
| Text Data | Mode 1 <u>Change</u> | |
| Communication | Settings | |
| SIO Type | RS232C | C RS422/485(2wire) C RS422/485(4wire) |
| Speed | 9600 | • |
| Data Leng | th O 7 | • 8 |
| Parity | O NONE | EVEN ODD |
| Stop Bit | © 1 | O 2 |
| Flow Contr | ol C NONE | ER(DTR/CTS) C XON/XOFF C |
| Timeout | 3 ÷ | (sec) |
| Retry | 2 🔅 | - |
| Wait To S | end 0 ÷ | (ms) |
| RI / VCC | • RI | O VCC |
| | se of RS232C, you can sel 5V Power Supply), If you u | lect the 9th pin to RI (Input) use the Digital's RS232C |
| Isolation | Unit, please select it to VC(| C. Default |
| Device-Specific | Settings | |
| | No. of Device/PLCs 16 Ur | |
| | Device Name | |
| 👗 1 | PLC1 | Series=MEMOCON SC,Slave Address=1 |

Device Setting

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

| 💰 Individual Device Sett | ings 🗙 | | | | |
|--|---------|--|--|--|--|
| PLC1 | | | | | |
| Series MEMOCON SC | | | | | |
| Please reconfirm all of address settings that you are using if you have changed the series. | | | | | |
| Slave Address 1 | - | | | | |
| | Default | | | | |
| OK (<u>D</u>) | Cancel | | | | |

There is no communication setting on the External Device.

Note that the address should be set using the DIP switch 3 SW of the External Device.

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/PLC 1 | | |
|-----------------|---|--|
| Summary | | Change Device/PLC |
| Maker 🕅 | ASKAWA Electric Corporati | ion Driver MEMOBUS SIO Port COM1 |
| Text Data | Mode 1 <u>Change</u> | |
| Communication | Settings | |
| SIO Type | RS232C | C RS422/485(2wire) C RS422/485(4wire) |
| Speed | 9600 | • |
| Data Leng | th O 7 | • 8 |
| Parity | O NONE | EVEN ODD |
| Stop Bit | © 1 | O 2 |
| Flow Contr | ol C NONE | ER(DTR/CTS) C XON/XOFF C |
| Timeout | 3 ÷ | (sec) |
| Retry | 2 🔅 | - |
| Wait To S | end 0 ÷ | (ms) |
| RI / VCC | • RI | O VCC |
| | se of RS232C, you can sel 5V Power Supply), If you u | lect the 9th pin to RI (Input) use the Digital's RS232C |
| Isolation | Unit, please select it to VC(| C. Default |
| Device-Specific | Settings | |
| | No. of Device/PLCs 16 Ur | |
| | Device Name | |
| 👗 1 | PLC1 | Series=MEMOCON SC,Slave Address=1 |

Device Setting

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

| 💰 Individual Device Sett | ings 🗙 | | | | |
|--|---------|--|--|--|--|
| PLC1 | | | | | |
| Series MEMOCON SC | | | | | |
| Please reconfirm all of address settings that you are using if you have changed the series. | | | | | |
| Slave Address 1 | - | | | | |
| | Default | | | | |
| OK (<u>D</u>) | Cancel | | | | |

Use the programming panel for communication settings of the External Device. Please refer to the manual of the External Device for more details.

Procedure

1 Perform the following communication settings in the programming panel.

| Setup Items | Setup Description |
|------------------|-------------------|
| Address | 1 |
| Baud Rate | 9600 |
| Parity Setting | Enable |
| Parity Type | Even |
| Stop Bit Length | 1 |
| Data Bit Length | 8 (RTU mode) |
| Port Delay Timer | 10 ms |

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 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.

| Device/PLC | 1 | | | |
|------------|--------------------------|---------------------|--|---------|
| Summary | | | Change Device/PLI | <u></u> |
| Maker | YASKAWA B | lectric Corporation | n Driver MEMOBUS SIO Port COM1 | - |
| Text D | lata Mode | 1 <u>Change</u> | | |
| Communica | ition Settings | | | |
| SIO T | /pe | • R\$232C | C RS422/485(2wire) C RS422/485(4wire) | |
| Speed | I | 19200 | • | |
| Data L | .ength | 0.7 | • 8 | |
| Parity | | O NONE | EVEN ODD | |
| Stop E | lit | ⊙ 1 | © 2 | |
| Flow 0 | Control | O NONE | ER(DTR/CTS) C XON/XOFF | |
| Timeo | ut | 3 📫 (s | (sec) | |
| Retry | | 2 + | | |
| Wait 1 | o Send | 0 <u>+</u> (r | (ms) | |
| BL/V | сс | • BI | O VCC | |
| or V | CC (5V Power : | | ect the 9th pin to RI (Input) ee the Digital's RS232C | |
| Device-Spe | cific Settings | | | |
| | | ce/PLCs_16Unit(: | | |
| | lo. Device Nar 1 PLC1 | ne | Settings Series=MP900/2000/CP-9200SH.Slave Address=1 | _ |
| 00 | 1 | | Nett 1 | |

| 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. |
| 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

| 💣 Individual | Device Sett | ings 👂 | × |
|--|---------------------------------------|-------------|---|
| PLC1 | | | |
| Series | MP900/2000/ | CP-9200SH 💌 | - |
| Please reconfirm you are using if y | n all of addressis you have change | | |
| Slave Address | 1 | - | |
| | | Default | |
| | DK (<u>D)</u> | Cancel | |

| Setup Items | Setup Description |
|-----------------------------|---|
| Series | Select the series of the External Device. |
| Slave Address ^{*1} | Enter the slave address of the External Device, using 1 to 247. |

*1 Do not set the duplicate unit No. in case of RS422-485 (2wire) or RS422/485 (4wire).

4.2 Setup Items in Off-Line Mode

NOTE

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

- Cf. Maintenance/Troubleshooting Manual "Off-line Mode"
- The number of the setup items to be displayed for 1 page in the off-line 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 Equipment Settings] in off-line mode. Touch the External Device you want to set from the displayed list.

| Comm. | Device | Option | | |
|-------------|---|---|----------------------|------------------------|
| | | | | |
| MEMOBUS SIO | | | [COM1] | Page 1/1 |
| | SIO Type Speed Data Length Parity Stop Bit Flow Control Timeout(s) Retry Wait To Send(ms) | RS232C 19200 7 NONE 1 FR(DTR/CTS | • 8 • EVEN • 2 | |
| | Exit | | Back | 2008/04/07 21:39:20 |

| 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. |

| Setup Items | Setup Description |
|-------------------|--|
| 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. |
| 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 Equipment Settings]. Touch the External Device you want to set from the displayed list, and touch [Device Settings].

| Comm. | Device | Option | | |
|-------------|----------------|-------------|-----------|------------------------|
| | | | | |
| MEMOBUS SIO | | | [COM1] | Page 1/1 |
| Device | /PLC Name PLC1 | l | | • |
| | | | | |
| | Series | MP900/2000/ | CP-9200SH | |
| | Slave Address | | 1 🔻 🔺 | ſ |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | Exit | | Back | 2008/04/07 21:39:24 |

| 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 the series of the External Device. |
| Slave Address *1 | Enter the slave address of the External Device, using 1 to 247. |

*1 Do not set the duplicate unit No. in case of RS422-485 (2wire) or RS422/485 (4wire).

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 | | |
|--------------|--|---|--------------------|------------------------|
| | | | | |
| MEMOBUS \$10 | RI / VCC | • RI | [COM1] | Page 1/1 |
| | In the case of the 9th pin to Power Supply). | • KI RS232C, you can sel RI(Input) or VCC(5 If you use the Digit on Unit, please sele | lect / tal's | |
| | Exit | | Back | 2008/04/07 21:39:28 |

| 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 do not have the [Option] setting in the off-line mode.

5 Cable Diagram

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

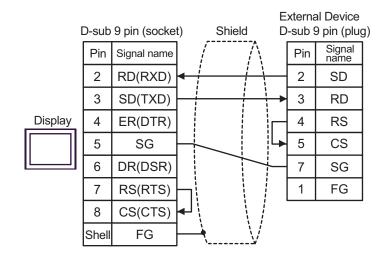
- The FG pin of the main body of the External Device must be D-class grounded. Please refer to the manual of the External Device for more details.
- SG and FG are connected inside the Display. When connecting SG to the External Device, design the system not to form short-circuit loop.
- Connect the isolation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

Cable Diagram 1

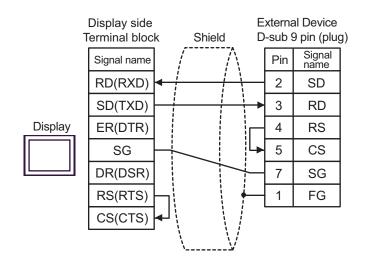
| Display (Connection Port) | | Cable | Remarks |
|--|----|--------------------|---------------------------------------|
| GP3000 (COM1) ST (COM1) IPC ^{*1} PC/AT | 1A | User-created cable | The cable length must be 15m or less. |
| GP-4105 (COM1) | 1B | User-created cable | |

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

IPC COM Port (page 7)



1B)



1A)

Cable Diagram 2

| Display (Connection Port) | | Cable | Remarks |
|--|----|--------------------|---------------------------------------|
| GP3000 (COM1) ST (COM1) IPC ^{*1} PC/AT | 2A | User-created cable | The cable length must be 15m or less. |
| GP-4105 (COM1) | 2B | User-created cable | |

*1 Only the COM port which can communicate by RS-232C can be used. ^{CP} ■ IPC COM Port (page 7)

2A)

| I | D-sub | 9 pin (socke | t) | Shiel | d | | | l Device 25 pin (plu | ıg) |
|---------|-------|--------------|----|-------|---------------|---|-----|-------------------------|-----|
| Display | Pin | Signal name | | / | | | Pin | Signal name | |
| | 1 | CD | - | | $\frac{1}{1}$ | _ | 5 | CS | |
| | 2 | RD(RXD) | - | | | | 2 | SD | |
| | 3 | SD(TXD) | | | | • | 3 | RD | |
| | 4 | ER(DTR) | | | ļ | | 4 | RS | |
| | 5 | SG | | | 1 | • | 6 | DR | |
| | 6 | DR(DSR) | | | +-+- | | 7 | SG | |
| | 8 | CS(CTS) | | | | • | 8 | CD | |
| | 7 | RS(RTS) | | | | | 9 | ER | |
| | Shell | FG | | → | <u> </u> | | 1 | FG | |

2B)

| | Display side Terminal bloc | . | | | al Device 25 pin (plu | Jg) |
|---------|-------------------------------|-------------------------|----------|-----|--------------------------|-----|
| | Signal name | | | Pin | Signal name | |
| | CD | | • | 5 | CS | |
| | RD(RXD) | | \vdash | 2 | SD | |
| Display | SD(TXD) | | ┝ | 3 | RD | |
| | ER(DTR) | | | 4 | RS | |
| | SG | | - | 6 | DR | |
| | DR(DSR) | | | 7 | SG | |
| | CS(CTS) | | | 8 | CD | |
| | RS(RTS) | $ \downarrow \rangle $ | | 9 | ER | |
| | | | | 1 | FG | |

Cable Diagram 3

| Display (Connection Port) | Cable | | Remarks |
|---|-------|--|--|
| GP3000 ^{*1} (COM1) AGP-3302B (COM2) ST ^{*2} (COM2) IPC ^{*3} | 3A | COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable | |
| | 3B | User-created cable | |
| GP3000 ^{*4} (COM2) | 3C | Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3- ADPTRM-01 + User-created cable | The cable length must be 300m or less. |
| | 3D | Online adapter by Pro-face CA4-ADPONL-01 + User-created cable | |
| GP-4106 (COM1) | 3E | User-created cable | |

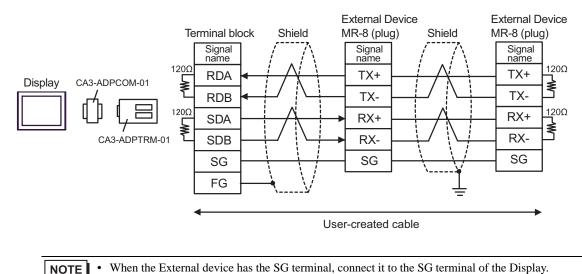
*1 All GP3000 models except AGP-3302B

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

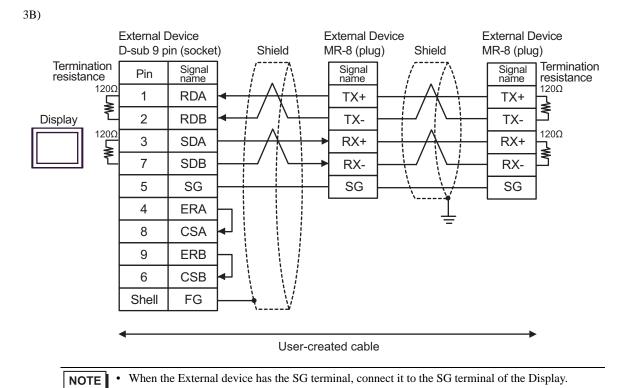
*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used. ☞ ■ IPC COM Port (page 7)

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

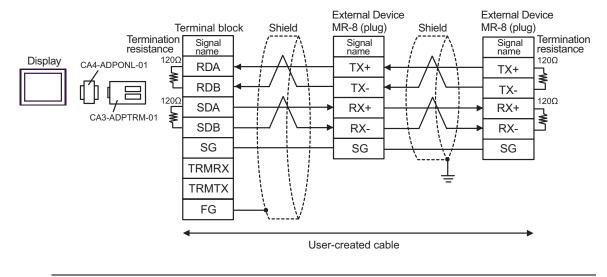
3A)



NOTE when the External device has the SO terminal, connect it to the SO terminal of the Disp



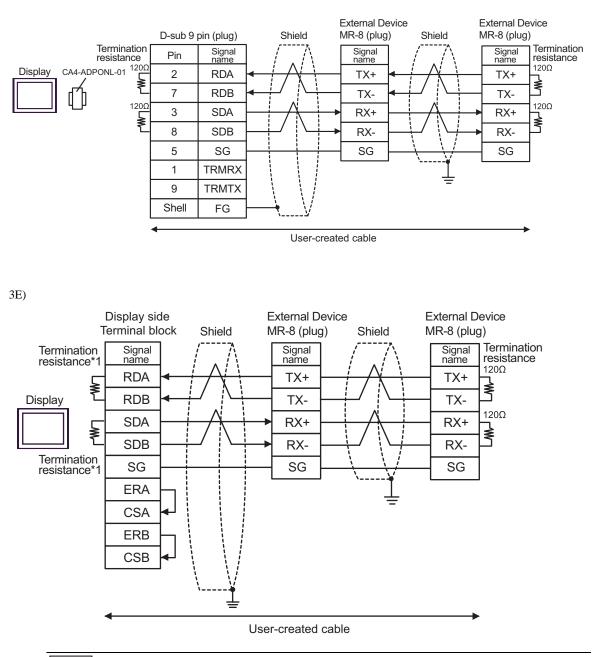
3C)





• When the External device has the SG terminal, connect it to the SG terminal of the Display.

3D)



• When the External device has the SG terminal, connect it to the SG terminal of the Display.

*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 | ON |
| 3 | ON |
| 4 | ON |

Cable Diagram 4

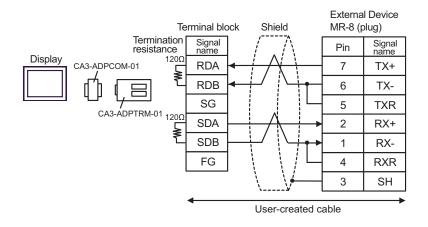
| Display (Connection Port) | Cable | | Remarks |
|---|-------|--|--|
| GP3000 ^{*1} (COM1) AGP-3302B (COM2) ST ^{*2} (COM2) IPC ^{*3} | 4A | COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable | |
| | 4B | User-created cable | |
| GP3000 ^{*4} (COM2) | 4C | Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3- ADPTRM-01 + User-created cable | The cable length must be 300m or less. |
| | 4D | Online adapter by Pro-face CA4-ADPONL-01 + User-created cable | |
| GP-4106 (COM1) | 4E | 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

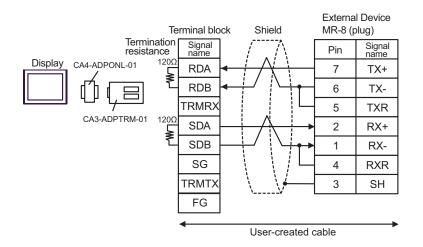


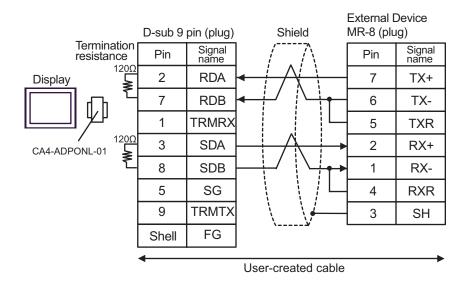
4B)

4A)

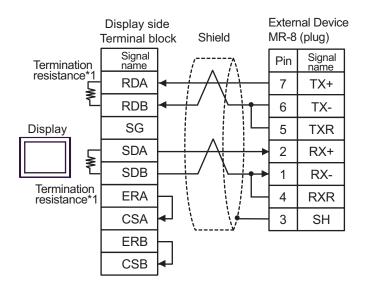
External Device External Device D-sub 9 pin (socket) Shield MR-8 (plug) Termination resistance Signal name Signal name Pin Pin 120Ω RDA 1 7 TX+ ≱ 6 2 RDB TX-SG Display 5 5 TXR 120Ω ► SDA 2 3 RX+ SDB 7 1 RX-4 4 ERA RXR CSA 3 8 SH 9 ERB 6 CSB FG Shell

4C)





4E)



*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 | ON |
| 3 | ON |
| 4 | ON |

Cable Diagram 5

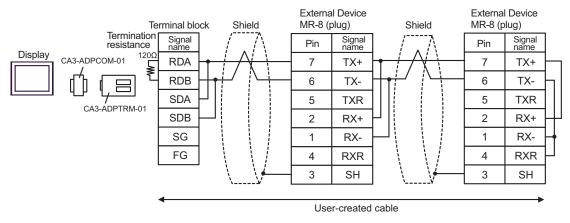
| Display (Connection Port) | Cable | | Remarks |
|--|----------|---|--|
| GP3000 ^{*1} (COM1) AGP-3302B (COM2) ST ^{*2} (COM2) | 5A | Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + COM port conversion adapter by Pro-face CA3-ADPCOM-01 + User-created cable | |
| | 5B | User-created cable | |
| GP3000 ^{*3} (COM2) | 5C 5D | Online adapter by Pro-face (CA4-ADPONL-01) + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable Online adapter by Pro-face (CA4-ADPONL-01) + User-created cable | The cable length must be 300m or less. |
| IPC*4 | 5E 5F | Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + COM port conversion adapter by Pro-face CA3-ADPCOM-01 + User-created cable User-created cable | |
| GP-4106 (COM1) | 5G | User-created cable | |
| GP-4107 (COM1) | 5H | User-created cable | |

*1 All GP3000 models except AGP-3302B

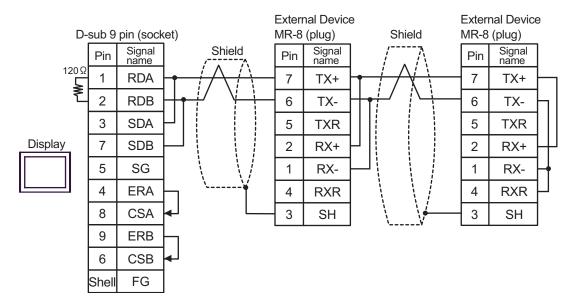
*2 All ST models except AST-3211A and AST-3302B

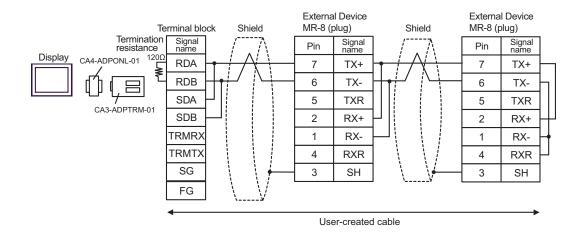
*3 All GP3000 models except GP-3200 series and AGP-3302B

*4 Only the COM port which can communicate by RS-422/485 (2 wire) can be used. ☞ ■ IPC COM Port (page 7) 5A)



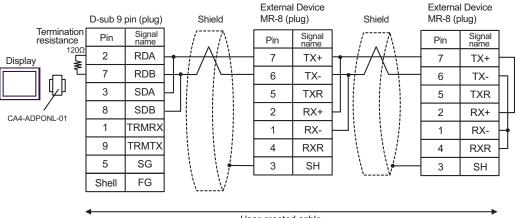
5B)





5D)

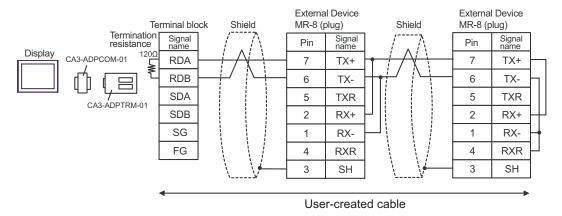
5C)



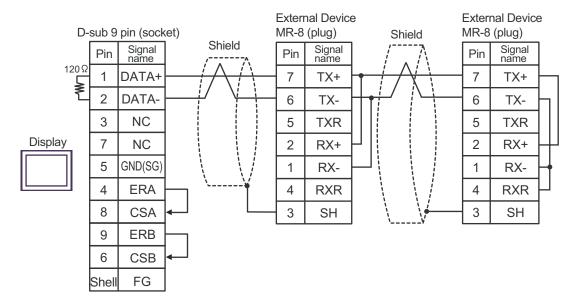
User-created cable

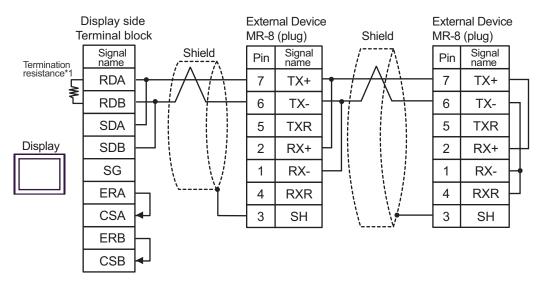
GP-Pro EX Device/PLC Connection Manual





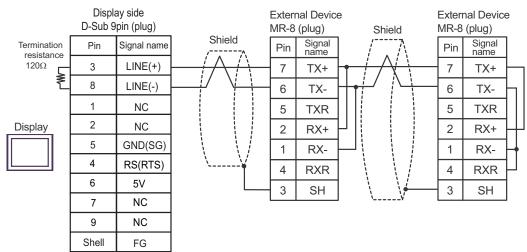
5F)





*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 | ON |

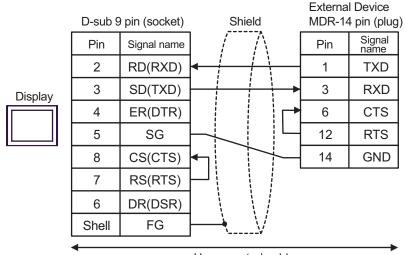


| IMPORTANT • | The 5V output (Pin #6) on the GP-4107 is the power for the Siemens AG's PROFIBUS connector. Do not use it for other devices. |
|-------------|--|
| NOTE | In COM on the GP-4107, the SG and FG terminals are isolated. |

| Display (Connection Port) | | Cable | Remarks |
|--|----|--------------------|---------------------------------------|
| GP3000 (COM1) ST (COM1) IPC ^{*1} PC/AT | 6A | User-created cable | The cable length must be 15m or less. |
| GP-4105 (COM1) | 6B | User-created cable | |

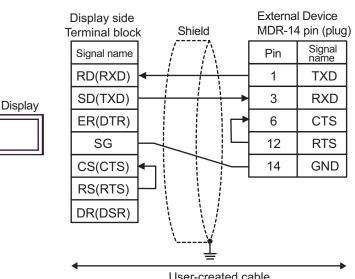
*1 Only the COM port which can communicate by RS-232C can be used. IPC COM Port (page 7)

6A)



User-created cable

6B)



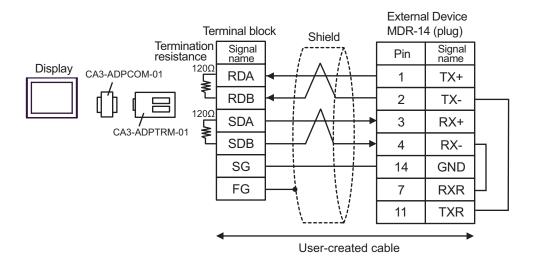
| Display (Connection Port) | | Cable | Remarks |
|---|----|--|--|
| GP3000 ^{*1} (COM1) AGP-3302B (COM2) ST ^{*2} (COM2) IPC ^{*3} | 7A | COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable | |
| | 7B | User-created cable | 1 |
| GP3000 ^{*4} (COM2) | 7C | Online adapter by Pro-face (CA4-ADPONL-01) + Terminal block conversion adapter by Pro-face CA3- ADPTRM-01 + User-created cable | The cable length must be 300m or less. |
| | 7D | Online adapter by Pro-face (CA4-ADPONL-01) + User-created cable | |
| GP-4106 (COM1) | 7E | User-created cable | |

*1 All GP3000 models except AGP-3302B

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

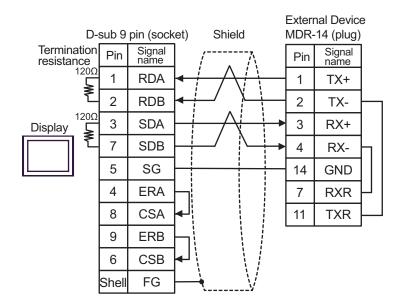
*3 Only the COM port which can communicate by RS-422/485 (4 wire) can be used. ☞ ■ IPC COM Port (page 7)

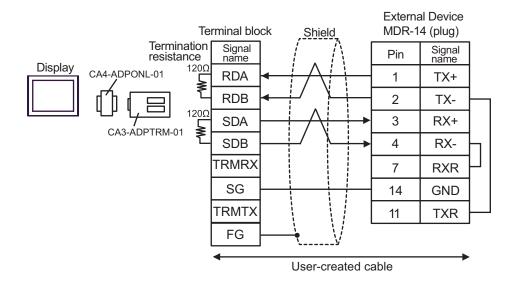
*4 All GP3000 models except GP-3200 series and AGP-3302B



7B)

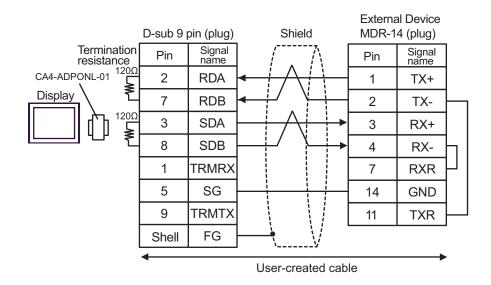
7A)

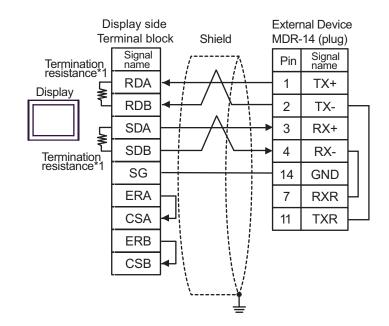




7D)

7C)





*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 | ON |
| 3 | ON |
| 4 | ON |

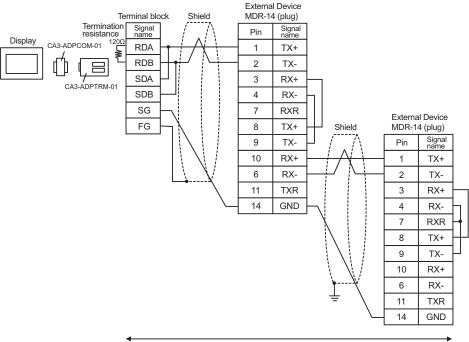
| Display (Connection Port) | | Cable | Remarks |
|--|----------|--|--|
| GP3000 ^{*1} (COM1) AGP-3302B (COM2) ST ^{*2} (COM2) | 8A | COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable | |
| | 8B | User-created cable | |
| GP3000 ^{*3} (COM2) | 8C 8D | Online adapter by Pro-face (CA4-ADPONL-01) + Terminal block conversion adapter by Pro-face CA3- ADPTRM-01 + User-created cable Online adapter by Pro-face (CA4-ADPONL-01) + User-created cable | The cable length must be 300m or less. |
| IPC ^{*4} | 8E 8F | COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable User-created cable | |
| GP-4106 (COM1) | 8G | User-created cable | |
| GP-4107 (COM1) | 8H | User-created cable | |

*1 All GP3000 models except AGP-3302B

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

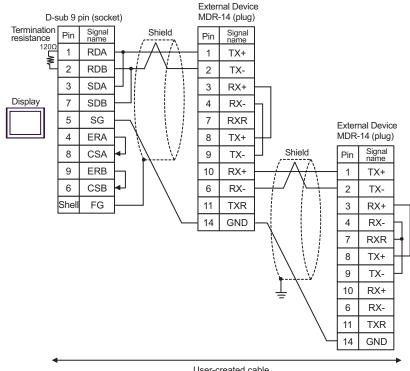
*3 All GP3000 models except GP-3200 series and AGP-3302B

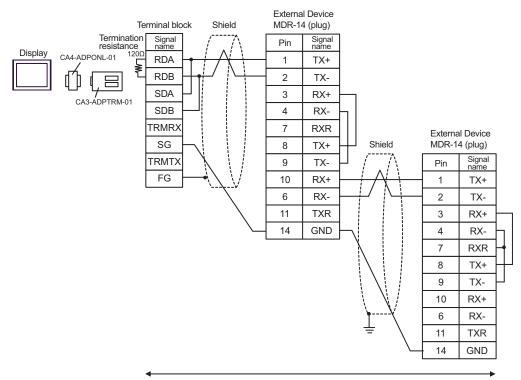
*4 Only the COM port which can communicate by RS-422/485 (2 wire) can be used. ☞ ■ IPC COM Port (page 7) 8A)



User-created cable

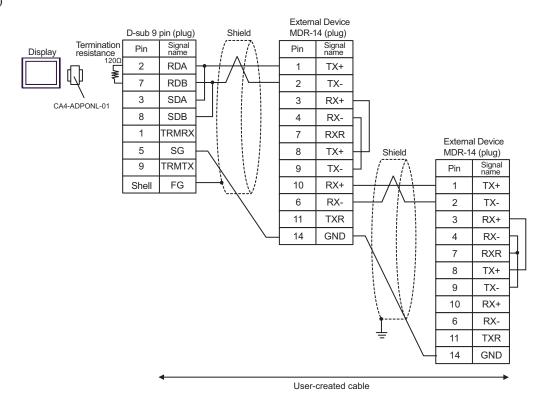
8B)

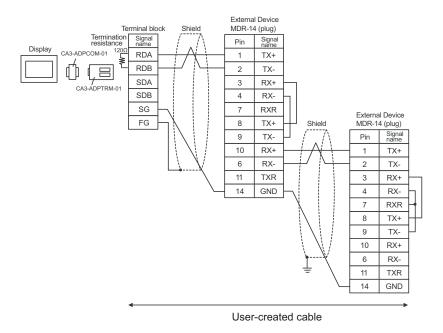




User-created cable

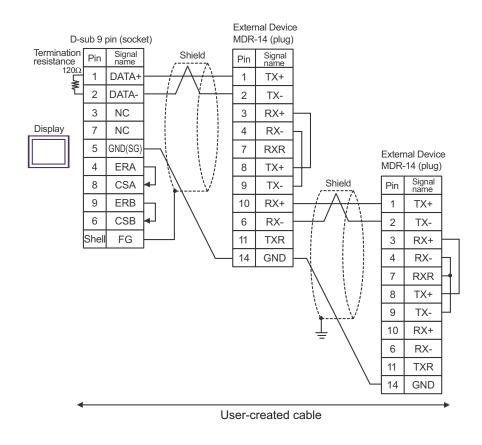
8D)

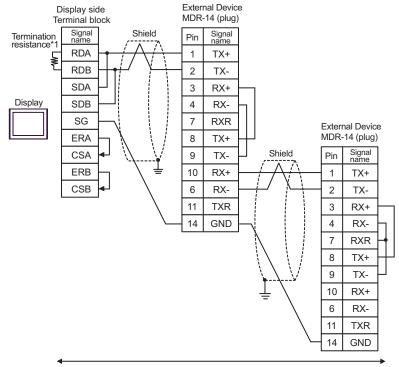




8F)

8E)



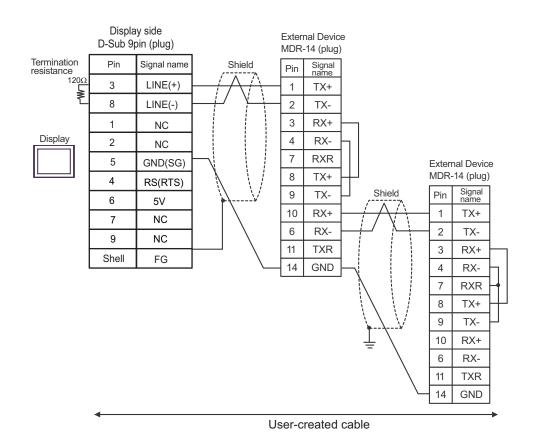


User-created cable

*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 | ON |

8G)



| IMPORTANT • | The 5V output (Pin #6) on the GP-4107 is the power for the Siemens AG's PROFIBUS connector. Do not use it for other devices. |
|-------------|--|
| NOTE | In COM on the GP-4107, the SG and FG terminals are isolated. |

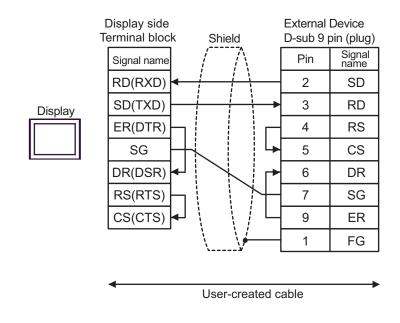
| Display (Connection Port) | | Cable | Remarks |
|--|----|--------------------|---------------------------------------|
| GP3000 (COM1) ST (COM1) IPC ^{*1} PC/AT | 9A | User-created cable | The cable length must be 15m or less. |
| GP-4105 (COM1) | 9B | User-created cable | |

*1 Only the COM port which can communicate by RS-232C can be used. ☞ ■ IPC COM Port (page 7)

9A)

| | D-sub 9 | pin (socket) | | Sł | nield | | External D-sub 9 p | |
|---------|---------|--------------|----------|----|---------------|----|-----------------------|----------------|
| | Pin | Signal name | | / | | | Pin | Signal name |
| | 2 | RD(RXD) | - | + | + | | 2 | SD |
| Display | 3 | SD(TXD) | | | | | 3 | RD |
| | 4 | ER(DTR) | h | | | | 4 | RS |
| | 5 | SG | \vdash | - | | ╘ | 5 | CS |
| | 6 | DR(DSR) | | | \checkmark | ┍► | 6 | DR |
| | 7 | RS(RTS) | h | | | + | 7 | SG |
| Γ | 8 | CS(CTS) | | | () | L | 9 | ER |
| | Shell | FG | | \ | // | | 1 | FG |
| | | | | | | | | |

User-created cable



| Display (Connection Port) | | Cable | Remarks |
|---|-----|---|--------------------------|
| GP3000 (COM1) ST (COM1) IPC ^{*1} | 10A | Cable by YASKAWA Electric Corporation JZMSZ-120W0202-3/JZMSZ-120W0202-15 | |
| PC/AT | 10B | User-created cable | The cable length must be |
| GP-4105 (COM1) | 10C | User-created cable | 15m or less. |

*1 Only the COM port which can communicate by RS-232C can be used. ☞ ■ IPC COM Port (page 7)

10A)

YASKAWA's cable JZMSZ-120W0202-3/JZMSZ-120W0202-15 Display External Device

10B)

| | D-sub 9 | pin (socket) | Shield | External Device D-sub 9 pin (plug) | |
|---------|---------|--------------|---------------------------------------|---------------------------------------|-------------|
| | Pin | Signal name | Shield | Pin | Signal name |
| | 2 | RD(RXD) | | 2 | TXD |
| Display | 3 | SD(TXD) | | 3 | RXD |
| 4 | ER(DTR) | | 6 | DSR | |
| | 6 | DR(DSR) | | 9 | DTR |
| | 7 | RS(RTS) | | 4 | RTS |
| | 8 | CS(CTS) | ◄┘ └≽ | 5 | CTS |
| | 5 | SG | | 7 | GND |
| | Shell | FG | · · · · · · · · · · · · · · · · · · · | 1 | FG |

10C)

| ٦ | Display side Ferminal bloc | | | | | External Device D-sub 9 pin (plug) | | |
|---------|-------------------------------|----------|----------|----------------|---|---------------------------------------|-------------|--|
| | Signal name | | 50 | | | Pin | Signal name | |
| | RD(RXD) | ┥ | <u> </u> | / \ | | 2 | TXD | |
| Display | SD(TXD) | <u> </u> | | | | 3 | RXD | |
| | ER(DTR) | | : | | | 6 | DSR | |
| | DR(DSR) | | | | | 9 | DTR | |
| | RS(RTS) | h | | | Г | 4 | RTS | |
| | CS(CTS) | ┥ | | | 4 | 5 | CTS | |
| | SG | <u> </u> | <u>;</u> | $\frac{1}{1}$ | | 7 | GND | |
| | | - | ` | <u> </u> | | 1 | FG | |

| Display (Connection Port) | | Cable | Remarks | | |
|---|-----|--|--|--|--|
| GP3000 ^{*1} (COM1) AGP-3302B (COM2) ST ^{*2} (COM2) IPC ^{*3} | 11A | COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable | | | |
| | 11B | User-created cable | | | |
| GP3000 ^{*4} (COM2) | 11C | Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3- ADPTRM-01 + User-created cable | The cable length must be 500 meters or less. | | |
| | 11D | Online adapter by Pro-face CA4-ADPONL-01 + User-created cable | | | |
| GP-4106 (COM1) | 11E | User-created cable | | | |

*1 All GP3000 models except AGP-3302B

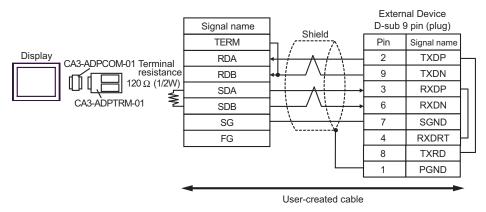
*2 All ST models except AST-3211A and AST-3302B

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

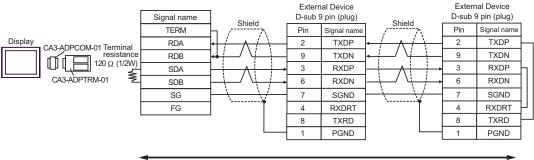
*4 All GP3000 models except GP-3200 series and AGP-3302B

11A)

1:1 Connection



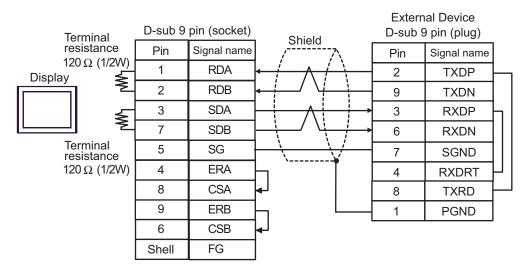
• 1:n Connection



User-created cable

11B)

• 1:1 Connection

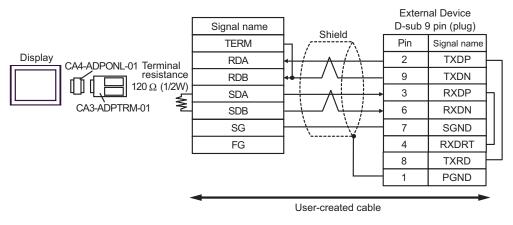


• 1:n Connection

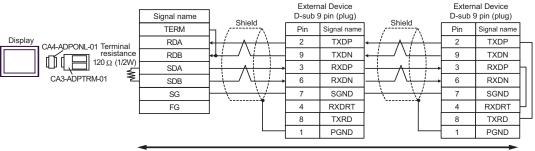
| Terminal | D-sub 9 | pin (socket) | Shield | | ial Device) pin (plug) | Shield | | nal Device 9 pin (plug) |
|-------------------------|---------|--------------|--------------------------------------|-----|----------------------------|----------------------|-----|----------------------------|
| resistance | Pin | Signal name | | Pin | Signal name | | Pin | Signal name |
| 120 Ω (1/2W) Display | 1 | RDA | \leftarrow \land \land \land | 2 | TXDP | \leftarrow / / · · | 2 | TXDP |
| Display | 2 | RDB | | 9 | TXDN | | 9 | TXDN |
| s s | 3 | SDA | | 3 | RXDP | $ \rightarrow $ | 3 | RXDP |
| | 7 | SDB | $ - -/ \setminus - \rightarrow$ | 6 | RXDN | / \ <u>\</u> / | 6 | RXDN |
| Terminal resistance | 5 | SG | $\vdash \lor \lor \lor$ | 7 | SGND | $ \longrightarrow $ | 7 | SGND |
| 120 Ω (1/2W) | 4 | ERA | | 4 | RXDRT | · | 4 | RXDRT |
| | 8 | CSA | ₄」 | 8 | TXRD | | 8 | TXRD |
| | 9 | ERB | \vdash | 1 | PGND | | 1 | PGND |
| | 6 | CSB | ↓ | | | | | · |
| | Shell | FG |] | | | | | |

11C)

1:1 Connection



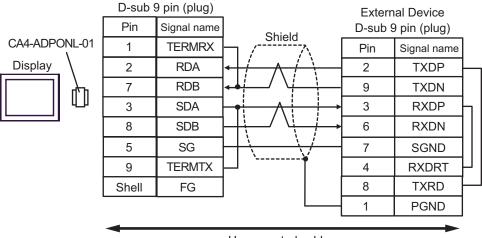
• 1:n Connection



User-created cable

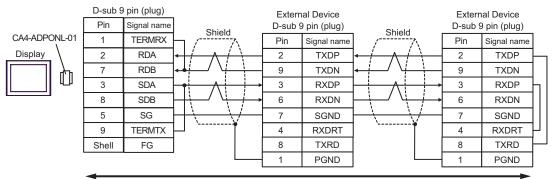
11D)

• 1:1 Connection



User-created cable

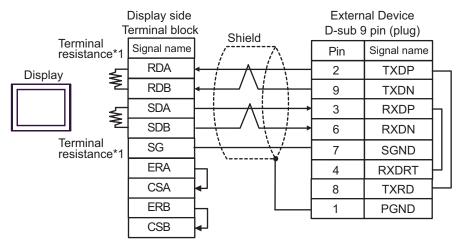
• 1:n Connection



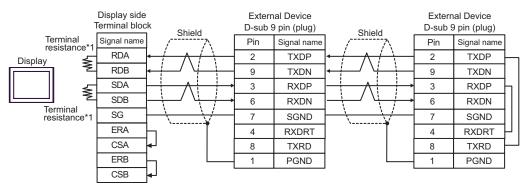
User-created cable

11E)

• 1:1 Connection



• 1:n Connection



*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 | ON |
| 3 | ON |
| 4 | ON |

| Display (Connection Port) | | Cable | Remarks |
|--|-----|--------------------|---------------------------------------|
| GP3000 (COM1) ST (COM1) IPC ^{*1} PC/AT | 12A | User-created cable | The cable length must be 15m or less. |
| GP-4105 (COM1) | 12B | User-created cable | |

*1 Only the COM port which can communicate by RS-232C can be used. ☞ ■ IPC COM Port (page 7)

12A)

| | D-sub 9 | pin (socket) | Shield r | External Device D-sub 9 pin (plug) | | |
|---------|---------|--------------|-------------|---------------------------------------|-------------|--|
| Pin | | Signal name | Shield | Pin | Signal name | |
| | 2 | RD(RXD) | | 2 | TXD | |
| Display | 3 | SD(TXD) | | 3 | RXD | |
| 6 4 | 6 | DR(DSR) | | 5 | CTS | |
| | 4 | ER(DTR) | | 6 | DSR | |
| | 5 | SG | | 7 | SG | |
| | 7 | RS(RTS) | | 4 | RTS | |
| 8 | 8 | CS(CTS) | | 9 | DTR | |
| | Shell | FG | \\ _ | 1 | FG | |

12B)

| - | Display side Terminal bloc | k Shield | | External Device D-sub 9 pin (plug) | | |
|---------|-------------------------------|---------------------------------------|-----|---------------------------------------|--|--|
| | Signal name | Shield | Pin | Signal name | | |
| | RD(RXD) | | 2 | TXD | | |
| Display | SD(TXD) | | 3 | RXD | | |
| | DR(DSR) | → | 5 | CTS | | |
| | ER(DTR) | → | 6 | DSR | | |
| | SG | | 7 | SG | | |
| | RS(RTS) | | 4 | RTS | | |
| | CS(CTS) | | 9 | DTR | | |
| | | · · · · · · · · · · · · · · · · · · · | 1 | FG | | |

| Display (Connection Port) | | Cable | Remarks |
|---|-----|--|--|
| GP3000 ^{*1} (COM1) AGP-3302B (COM2) ST ^{*2} (COM2) IPC ^{*3} | 13A | COM port conversion adapter by Pro-face CA3-ADPCOM-01 + Terminal block conversion adapter by Pro-face CA3-ADPTRM-01 + User-created cable | |
| | 13B | User-created cable | |
| GP3000 ^{*4} (COM2) | 13C | Online adapter by Pro-face CA4-ADPONL-01 + Terminal block conversion adapter by Pro-face CA3- ADPTRM-01 + User-created cable | The cable length must be 500 meters or less. |
| | 13D | Online adapter by Pro-face CA4-ADPONL-01 + User-created cable | |
| GP-4106 (COM1) | 13E | User-created cable | |

*1 All GP3000 models except AGP-3302B

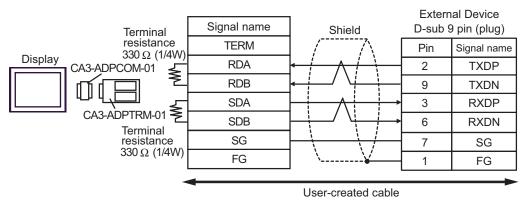
*2 All ST models except AST-3211A and AST-3302B

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

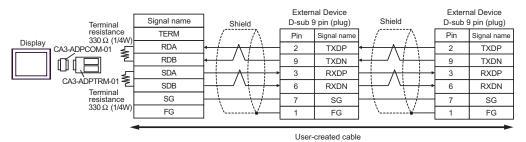
*4 All GP3000 models except GP-3200 series and AGP-3302B

13A)

1:1 Connection



• 1:n Connection



13B)

• 1:1 Connection

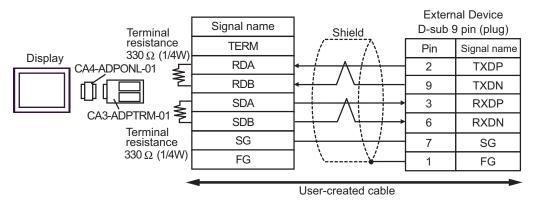
| Terminal | D-sub 9 | pin (socket) | Shield | External Device D-sub 9 pin (plug) | | |
|-------------------------|---------|--------------|----------|---------------------------------------|-------------|--|
| resistance | Pin | Signal name | / | Pin | Signal name | |
| 330 Ω (1/4W) Display | - 1 | RDA | | 2 | TXDP | |
| | - 2 | RDB | | 9 | TXDN | |
| | - 3 | SDA | | 3 | RXDP | |
| | - 7 | SDB | | 6 | RXDN | |
| Terminal resistance | 5 | SG | | 7 | SG | |
| 330 Ω (1/4W) | 4 | ERA | ┝┓╰¥──┤ | 1 | FG | |
| | 8 | CSA | ↓ | | | |
| | 9 | ERB | | | | |
| | 6 | CSB | ↓ | | | |
| | Shell | FG | | | | |

• 1:n Connection

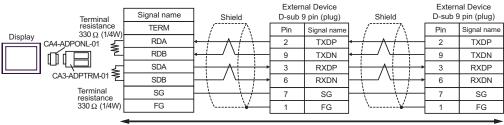
| Terminal | D-sub 9 | pin (socket) | Shield | | nal Device 9 pin (plug) | Shield | | nal Device 9 pin (plug) |
|---|---------|--------------|--|------|----------------------------|--------------|------|----------------------------|
| resistance | Pin | Signal name | / | Pin | Signal name | \wedge | Pin | Signal name |
| 330 Ω (1/4W) Display 丢 | 1 | RDA | $ \land \land$ | 2 | TXDP | \leftarrow | 2 | TXDP |
| Display 🗲 | 2 | RDB | • | 9 | TXDN | <hr/> | 9 | TXDN |
| 5 | - 3 SDA | \land | 3 | RXDP | | 3 | RXDP | |
| Terminal resistance5SG330 Ω (1/4W)4ERA | 7 | SDB | | 6 | RXDN | | 6 | RXDN |
| | 5 | SG | | 7 | SG | | 7 | SG |
| | ERA | ┝ ╰¥─── | 1 | FG | ∖¥ | 1 | FG | |
| | CSA | ↓ | | | | | | |
| | 9 | ERB | | | | | | |
| | 6 | CSB | <mark> </mark> ₄J | | | | | |
| | Shell | FG | | | | | | |

13C)

1:1 Connection



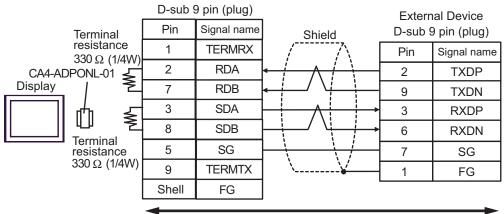
• 1:n Connection



User-created cable

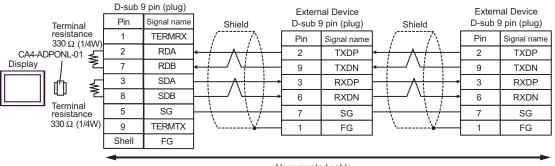
13D)

• 1:1 Connection



User-created cable

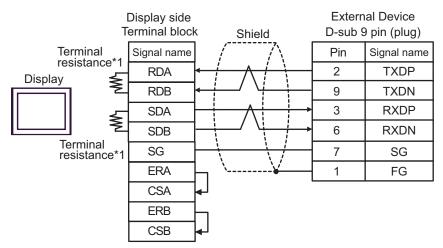
1:n Connection



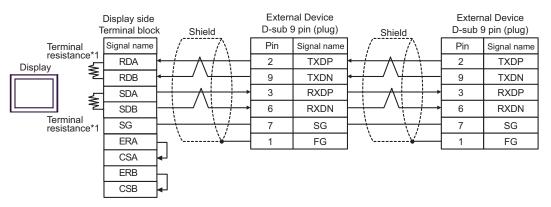
User-created cable

13E)

• 1:1 Connection



• 1:n Connection



*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 |

| Display (Connection Port) | | Cable | Remarks |
|--|-----|--------------------|---------------------------------------|
| GP3000 (COM1) ST (COM1) IPC ^{*1} PC/AT | 14A | User-created cable | The cable length must be 15m or less. |
| GP-4105 (COM1) | 14B | User-created cable | |

*1 Only the COM port which can communicate by RS-232C can be used. ^{CP}■ IPC COM Port (page 7)

14A)

| | D-sub 9 | pin (socket) | | External Device RJ45 9 pin | | |
|------------------------------------|---------|--------------|-------------------|-------------------------------|-------------|--|
| | Pin | Signal name | Shield | Pin | Signal name | |
| | 2 | RD(RXD) | | 3 | TXD | |
| Display 3 4 7 8 5 6 | SD(TXD) | | 4 | RXD | | |
| | 4 | ER(DTR) | | 2 | DTR | |
| | 7 | RS(RTS) | | 6 | RTS | |
| | 8 | CS(CTS) | ₄ J ⊢ | 7 | CTS | |
| | 5 | SG | | 5 | GND | |
| | 6 | DR(DSR) | · · · · · · · · · | 8 | FG | |
| | Shell | FG | | | | |

14B)

| 1 | External Device RJ45 9 pin | | | |
|---------|-------------------------------|---------------------------------------|-------|-------------|
| | Signal name | Shield | Pin | Signal name |
| | RD(RXD) | | 3 | 3 TXD |
| Display | SD(TXD) | | 4 | RXD |
| | ER(DTR) | | 2 | DTR |
| | RS(RTS) | | 6 RTS | RTS |
| | CS(CTS) | ┫ | 7 | CTS |
| | SG | | 5 | GND |
| | DR(DSR) | · · · · · · · · · · · · · · · · · · · | 8 | FG |

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.

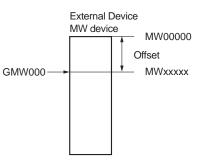
E

6.1 MP900/2000/CP-9200SH

This address can be specified as system data area.

| Device | Display on GP-Pro EX | Supported Address ^{*1} | 32 bits | Remarks |
|---|-----------------------|--|----------------|------------------------|
| Enhancing Coil (Bit device) | EGMB000000-EGMB65534F | MW000000 + Offset - MW65534F + Offset | | *2 |
| Enhancing Coil (Word device) | EGMB00000-EGMB65534 | MW00000 + Offset - MW65534 + Offset | | |
| Enhancing Input Relay (Bit device) | EGIB00000-EGIB7FFFF | IW00000 + Offset - IW7FFFF + Offset | | *3 |
| Enhancing Input Relay (Word device) | EGIB0000-EGIB7FFF | IW0000 + Offset - IW7FFF +Offset | | *3 |
| Coil (Bit device) | GMB0000.0-GMB4095.F | MW00000 + Offset - MW4095F + Offset | [L/H] | |
| Coil (Word device) | GMB0000-GMB4095 | MW0000 + Offset - MW4095 + Offset | | |
| Input Relay (Bit device) | GIB0000.0-GIB0FFF.F | IW00000 + Offset - IWOFFFF + Offset | | *3 |
| Input Relay (Word device) | GIB0000-GIB0FFFF | IW0000 + Offset - IW0FFFF + Offset | | *3 |
| Input Register | GIW0000-GIW7FFF | IW0000 + Offset - IW7FFFF + Offset | | _{B i t} F] *3 |
| Holding Register | GMW00000-GMW65534 | MW00000 + Offset - MW65534 + Offset | | _{₿it} F] |

*1 When you specify "GMW00000" in GP-Pro EX, the address of "MW00000" to which offset value is added, is specified as the actual address in the External Device. Offset value is described as "Head REG" in the ladder software.



- *2 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be written if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.
- *3 Write disable
 - **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)"
 - Please refer to the precautions on manual notation for icons in the table.

6.2 MEMOCON GL

This address can be specified as system data area.

| Device | Bit Address | Word Address | 32 bits | Remarks |
|---------------------------|---------------|---------------|------------|----------------------|
| Coil (Output/Internal) | 000001-008192 | 000001-008177 | | +1B+ 1 *1 |
| Input Relay | 100001-101024 | 100001-101009 | | +1B+ 1 *2 |
| Link Coil 1 | D10001-D11024 | D10001-D11009 | | +1B+ 1 *1 |
| Link Coil 2 | D20001-D21024 | D20001-D21009 | | +1B+ 1 *1 |
| MC Relay 1 | X10001-X10256 | X10001-X10241 | | +1B+ 1 *2 |
| MC Relay 2 | X20001-X20256 | X20001-X20241 | | +1B+ 1 *2 |
| MC Coil 1 | Y10001-Y10256 | Y10001-Y10241 | | +1B+ 1 *1 |
| MC Coil 2 | Y20001-Y20256 | Y2001-Y20241 | | +1B+ 1 *1 |
| MC Cord Relay 1 | M10001-M10096 | M10001-M10081 | 1 | +1B+ 1 *2 |
| MCCord Relay 2 | M20001-M20096 | M20001-M20081 | | +1B+ 1 *2 |
| MC Control Relay 1 | P10001-P10256 | P10001-P10241 | | +1B+ 1 *2 |
| MC Control Relay 2 | P20001-P20256 | P20001-P20241 | | +1B+ 1 *2 |
| MC Control Coil 1 | Q10001-Q10256 | Q10001-Q10241 | | +1B+ 1 *1 |
| MC Control Coil 2 | Q20001-Q20256 | Q20001-Q20241 | | +1B+ 1 *1 |
| Input Register | - | 300001-300512 | | <u>ві 1</u> 5 *2 |
| Holding Register | - | 400001-409999 | | _{в і т} 15) |
| Link Register 1 | - | R10001-R11024 | | _{в і т} 15) |
| Link Register 2 | - | R20001-R21024 | | _{в і т} 15) |
| Constant Register | - | 700001-704096 |] | _{в і 1} 5 |

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be read if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

*2 Write disable



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

Cf. GP-Pro EX Reference Manual "LS Area (Direct Access Method)"

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

6.3 MEMOCON SC (U84/84J/U84S/GL40S/GL60H/GL70H/GL60S)

This address can be specified as system data area.

| Device | Bit Address | Word Address | 32 bits | Remarks |
|---------------------------|-------------|--------------|------------|---------------------|
| Coil (Output/Internal) | 00001-08192 | 00001-08177 | | +1B+ 1) *1 |
| Input Relay | 10001-14096 | 10001-14081 | | +1B+ 1 *2 |
| Link Coil | D0001-D1024 | D0001-D1009 | | +1B+ 1 *1 |
| Input Register | - | 30001-30512 | | <u>ві t</u> 15] *2 |
| Constant Register | - | 31001-35096 | [H/L] | Bit15]*2 |
| Output Register | - | 40001-40512 | | _{ві t} 15 |
| Holding Register | - | 40513-49999 | | _{ві t} 15 |
| Link Register | - | R0001-R1024 | - | _{в і т} 15 |
| Extension Register | - | A0000-A7FFF | | Bit F |

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be read if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

*2 Write disable

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)"

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

6.4 Control Pack (CP-9200/CP-9200H)

This address can be specified as system data area.

| Device | Bit Address | Register No of CP-9200/CP- 9200H (equivalent to the address) | 32 bits | Remarks |
|-----------------|-------------|---|------------|---------------------|
| Input Register | 00001-02048 | IB00000-IB007FF | | +1B+ 1 *1 *2 |
| Output Register | 02049-04096 | OB00000-OB007FF | [H/L] | +1B+ 1 *1 *2 |
| System Register | 10001-12048 | SB000000-SB00127F (S Register of CPU#0) | | +1B+ 1 *1 *2 *3 |

| Device | Word Address | Register No of CP-9200/CP- 9200H (equivalent to the address) | 32 bits | Remarks |
|-----------------|--------------------------------|---|------------|----------------------------|
| Input Register | 49744-49871 | IB00000-IB007FF | | _{в і 1} 15 |
| Output Register | 49872-49999 | OB00000-OB007FF | | ⊪ ; ,15] |
| System Register | 30001-30256 | SW00000-SW00255 (S Register of CPU#0) | | <u>₿;</u> , 15] *3 |
| Data Register | 31001-33048 (CP-9200H only) | DW00000-DW02047 (D Register of CPU#1) | [H/L] | <u>₿ + 1</u> 5] *3 |
| Data Register | 40001-42048 | DW00000-DW02047 (D Register of CPU#0) | | <u>⊪⊤,15</u>) |
| Common Register | 42049-49743 | MW00000-MW07694 | | <u>⊾ , 15</u>] |

- *1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be read if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.
- *2 Specification using the word address is also available.
- *3 Write disable

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)"

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

6.5 MEMOCON Micro

This address can be specified as system data area.

| Device | Bit Address | Word Address | 32 bits | Remarks |
|----------------------------|-------------|--------------|------------|------------------------|
| Coil (Output/Internal) | 00001-01531 | - | | <u>+1₽+</u> 1) *1 *2 |
| Input Relay | 10001-10511 | - | ſH/Lj | +1B+ 1 *1 *2 *3 |
| Input Register | - | 30001-30047 | | _{в і 1} 15 *3 |
| Output/Holding Register | - | 40001-41871 | | <u>⊾, 15</u>) |

*1 When you write the bit address, the Display reads the word address corresponding to that of the External Device first. Then, it changes the target bit address among the word data once read and returns the word data to the External Device. Note that the correct data may not be read if you change the word address value in the ladder program while the Display reads the data of the External Device and returns it to the External Device.

*2 Specification using the word address is also available.

*3 Write disable

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)"

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

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 MP900/2000/CP-9200SH

| Device | Device Name | Device Code (HEX) | Address Code |
|-----------------------|-------------|----------------------|--------------|
| Coil | GMB | 0080 | Word Address |
| Input Relay | GIB | 0081 | Word Address |
| Enhancing Coil | EGMB | 0090 | Word Address |
| Enhancing Input Relay | EGIB | 0091 | Word Address |
| Input Register | GIW | 0001 | Word Address |
| Holding Register | GMW | 0000 | Word Address |

7.2 MEMOCON GL

| Device | Device Name | Device Code (HEX) | Address Code |
|------------------------|-------------|----------------------|--|
| | | 0080 | Word Address - 1 ^{*1} |
| Coil (Output/Internal) | 0 | 00A0 | (Word Address -1) divided by 16 ^{*2} |
| | | 0081 | Word Address - 1 ^{*1} |
| Input Relay | 1 | 00A1 | (Word Address -1) divided by 16 ^{*2} |
| | | 0082 | Word Address - 1 ^{*1} |
| Link Coil | D | 00A2 | (Word Address -1) divided by 16 ^{*2} |
| | | 0083 | Word Address - 1 ^{*1} |
| MC Relay | Х | 00A3 | (Word Address -1) divided by 16 ^{*2} |
| | | 0084 | Word Address - 1 ^{*1} |
| MC Coil | Y | 00A4 | (Word Address -1) divided by 16 ^{*2} |
| | | 0085 | Word Address - 1 ^{*1} |
| MC Cord Relay | М | 00A5 | (Word Address -1) divided by 16 ^{*2} |
| | | 0086 | Word Address - 1 ^{*1} |
| MC Control Relay | Р | 00A6 | (Word Address -1) divided by 16 ^{*2} |
| | | 0087 | Word Address - 1 ^{*1} |
| MC Control Coil | Q | 00A7 | (Word Address -1) divided by 16 ^{*2} |
| Input Register | 3 | 0001 | Word Address - 1 |
| Holding Register | 4 | 0000 | Word Address - 1 |
| Link Register | R | 0002 | Word Address - 1 |
| Constant Register | 7 | 0003 | Word Address - 1 |

*1 Device code and address code of the project created with the driver prior to V1.13.05. Reading and Writing for the continuous addresses that extend from one address range to another cannot be specified.

7.3 MEMOCON SC (U84/84J/U84S/GL40S/GL60H/GL70H/GL60S)

| Device | Device Name | Device Code (HEX) | Address Code |
|------------------------|-------------|----------------------|--|
| | | 0080 | Word Address - 1 ^{*1} |
| Coil (Output/Internal) | 0 | 00A0 | (Word Address -1) divided by 16 ^{*2} |
| | | 0081 | Word Address - 1 ^{*1} |
| Input Relay | 1 | 00A1 | (Word Address -1) divided by 16 ^{*2} |
| | | 0082 | Word Address - 1 ^{*1} |
| Link Coil | D | 00A2 | (Word Address -1) divided by 16 ^{*2} |
| Input Register | 3 | 0001 | Word Address - 1 |
| Constant Register | 3 | 0001 | Word Address - 1 |
| Output Register | 4 | 0000 | Word Address - 1 |
| Holding Register | 4 | 0000 | Word Address - 1 |
| Link Register | R | 0002 | Word Address - 1 |
| Extension Register | А | 0004 | Word Address |

*1 Device code and address code of the project created with the driver prior to V1.13.05. Reading and Writing for the continuous addresses that extend from one address range to another cannot be specified.

7.4 Control Pack (CP-9200/CP-9200H)

| Device | Device Name | Device Code (HEX) | Address Code |
|-----------------|-------------|----------------------|--|
| | | 0080 | Word Address - 1 ^{*1} |
| Input Register | 0 | 00A0 | (Word Address -1) divided by 16 ^{*2} |
| | | 0080 | Word Address - 1 ^{*1} |
| Output Register | 0 | 00A0 | (Word Address -1) divided by 16 ^{*2} |
| | 1 | 0081 | Word Address - 1 ^{*1} |
| System Register | | 00A1 | (Word Address -1) divided by 16 ^{*2} |
| Input Register | 4 | 0000 | Word Address - 1 |
| Output Register | 4 | 0000 | Word Address - 1 |
| System Register | 3 | 0001 | Word Address - 1 |
| Data Register | 3 | 0001 | Word Address - 1 |
| | 4 | 0000 | Word Address - 1 |
| Common Register | 4 | 0000 | Word Address - 1 |

*1 Device code and address code of the project created with the driver prior to V1.13.05. Reading and Writing for the continuous addresses that extend from one address range to another cannot be specified.

7.5 MEMOCON Micro

| Device | Device Name | Device Code (HEX) | Address Code |
|----------------------------|-------------|----------------------|--|
| | | 0080 | Word Address - 1 ^{*1} |
| Coil (Output/Internal) | 0 | 00A0 | (Word Address -1) divided by 16 ^{*2} |
| | | 0081 | Word Address - 1 ^{*1} |
| Input Relay | 1 | 00A1 | (Word Address -1) divided by 16 ^{*2} |
| Input Register | 3 | 0001 | Word Address - 1 |
| Output/Holding Register | 4 | 0000 | Word Address - 1 |

*1 Device code and address code of the project created with the driver prior to V1.13.05. Reading and Writing for the continuous addresses that extend from one address range to another cannot be specified.

8 Error Messages

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

| Item | Description |
|-----------------------|--|
| No. | Error No. |
| Device Name | Name of 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. |
| | Displays IP address or device address of the External Device where error occurs, or error codes received from the External Device. |
| Error Occurrence Area | 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 "When an error is displayed (Error Code List)" in "Maintenance/Troubleshooting Manual" for details on the error messages common to the driver.