

GP-PRO/PBIII for Windows
Device/PLC CONNECTION MANUAL
ADDITIONAL MANUAL

Yokogawa Electric Corporation
FCN/FCJ Series

Pro-face
Human Machine Interface —

Reading the GP-PRO/PBIII Device/PLC Connection Manual

This document is designed as an addition to the latest GP-PRO/PBIII for Windows Device/PLC Connection manual's Yokogawa Electric Corporation data.

When connecting a Factory Gateway unit, please substitute the words "Factory Gateway" for this document's "GP/GLC/ST".

Installation

This CD-ROM includes all the protocol files required by the GP/GLC to communicate with a Yokogawa Electric Corporation FCN/FCJ Series PLC. Also, you will need to have one or more of the following software applications installed. The screen and data transfer files included in the CD-ROM must be installed in each of those applications. For information regarding installing the software, refer to that software's Operation Manual.

■ Software Applications

- GP-PRO/PBIII for Windows Ver. 7.0
- Pro-Server with Pro-Studio for Windows Ver. 4.1 *1

- 1) Be sure to confirm that the required software application is installed in your PC prior to starting installation.
- 2) Double-click the CD-ROM's "FCNFCJMB.exe" file to start the installation process.
- 3) Once the installation program starts, follow the instructions given to install the protocol files.



When using Yokogawa Electric Corporation Stardom Series PLCs, be sure to select [Others] - [Yokogawa Electric FCN/FCJ ModbusRTU 1:n] for the "Device/PLC Type".

**1 When using the Factory Gateway unit, GP-Web Ver. 1.0 or later or GP-Viewer Ver. 1.0 or later, be sure to select "Pro-Server with Pro-Studio for Windows" as the "Destination Folder".*

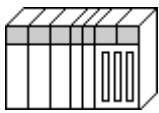


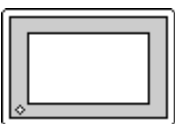
2.8 Yokogawa Electric

2.8.1 System Structure

The following describes the system structure for connecting the GP to Yokogawa Electric Corp. PLCs.

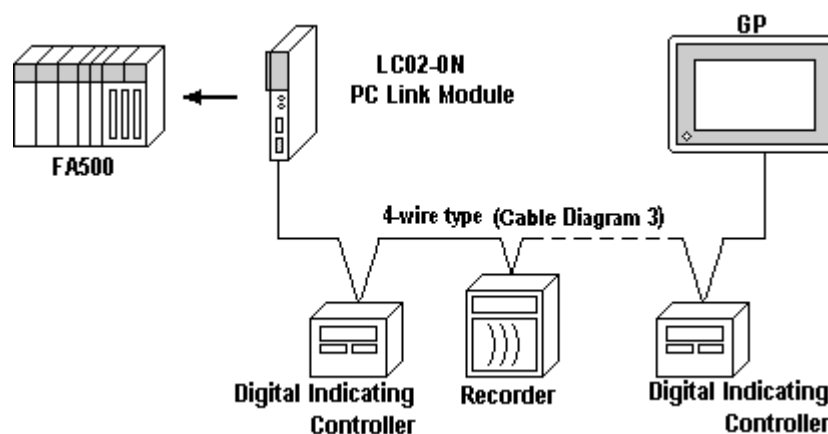
Reference The Cable Diagrams mentioned in the following tables are listed in the section titled "2.8.2 Cable Diagrams".

■ FACTORY ACE Series/FA500 (using Link I/F)

| CPU | Link I/F | Cable Diagram | Cables | GP |
|---|---|--|---|---|
|  |  PC Link Module |  | |  |
| FA500 | LC01-ON | RS-232C (Cable Diagram 1) | Digital's GP-410-IS00-O (5m) | GP Series |
| | LC02-ON | RS-232C (Cable Diagram 1) | RS-232C Digital's GP410-IS00-O (5m) | |
| | | RS-422 (Cable Diagram 2) | | |
| | | RS-422 1:n communication ¹ (Cable Diagram 3) | | |

* 1 1:n Communication

The system structure of 1:n communication for Yokogawa PLCs (FA500), or equipment supporting its protocol (n#), and a GP unit (1) used as an upper link protocol is described here.



(See next page)

(Continued from previous page)

* FA500 and equipment (Digital Indicating Controller, <UT37/38/2000> and Recorder, <μR-Series>...etc) supporting the same protocol are hereafter referred to as *PA Equipment*.

- Be sure to use only one GP in the system.
- In the Link above, maximum 32 PA Equipment can be connected to one GP.
- When Sequence Control is not required, a PLC is not needed.
- Using the method above, Unit No. s 1~16 can be setup; a Unit No. of 17 or higher cannot be used.



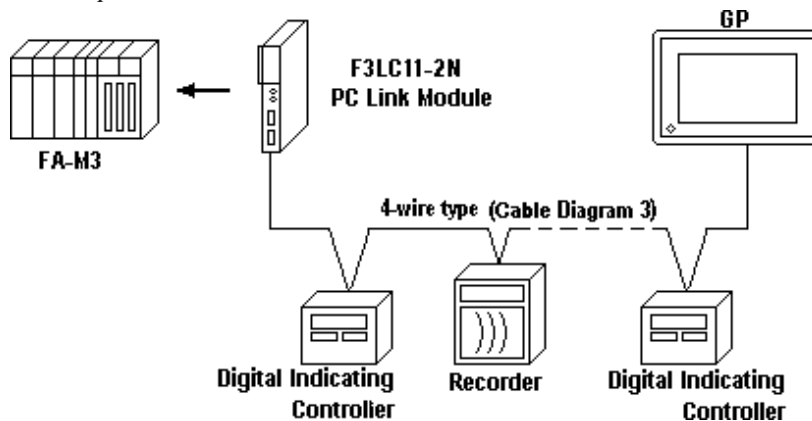
Wherever RS-422 appears in the table, RS-485 can be used on the PLC.

■ **FACTORY ACE Series/FA-M3 (using Link I/F)**

| CPU | Link I/F | Cable Diagram | Cables | GP |
|--|--|--|--------|-----------|
| | PC Link Module | | | |
| F3SP10-0N | F3LC01-1N | RS-232C (Cable Diagram 4) | | GP Series |
| F3SP20-0N, F3SP21-0N, F3SP25-2N, F3SP28-3N, F3SP30-0N, F3SP35-5N, F3SP38-6N, F3SP53-4H, F3SP58-6H, F3FP36-3N, F3SP28-3S, F3SP38-6S, F3SP53-4S, F3SP58-6S, F3SP59-7S | F3LC11-1N | RS-232C (Cable Diagram 4) | | |
| | F3LC11-1F | | | |
| | F3LC12-1F | | | |
| | F3LC11-2N | RS-422 (4-wire type) (Cable Diagram 2) RS-422 (2-wire type) (Cable Diagram 5) | | |
| F3LC11-2N | RS-422, 4-wire type 1:n communication ^{*1} (Cable Diagram 3) RS-422, 2-wire type 1:n communication (Cable Diagram 6) | | | |

***1 1:n Communication**

The system structure of 1:n communication for Yokogawa PLCs (FA-M3), or equipment supporting its protocol (n#), and a GP unit (1) used as an upper link protocol is described here.



(See next page)

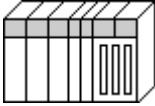


* FA-M3 and equipment (Digital Indicating Controller, <UT37/38/2000> and Recorder, <mR-Series>...etc) supporting the same protocol is referred to as *PA Equipment*, below.

- *Be sure to use only one GP in the system.*
- *In the Link above, maximum 32 PA Equipment can be connected to one GP.*
- *When Sequence Control is unnecessary, the system structure can be created without the PLC.*
- *Using the method above, Unit No.s 1~16 can be setup, however a Unit No. of 17 or more cannot be used.*



Wherever RS-422 appears in the table, RS-485 can be used on the PLC.

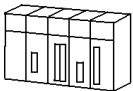



■ FACTORY ACE Series/FA-M3 (CPU Direct Connection)

| CPU | Cables | GP |
|---|---|---|
|  |  |  |
| F3SP21-0N, F3SP25-2N, F3SP28-3N, F3SP35-5N, F3SP38-6N, F3SP53-4H, F3SP58-6H, F3SP28-3S, F3SP38-6S, F3SP53-4S, F3SP58-6S, F3SP59-7S | Yokogawa's cable for programming tool KM11- 2N*A | GP Series |

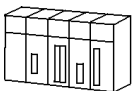


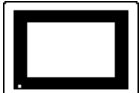


Two GP units cannot be connected at the same time using the PC Link I/F.

■ **STARDOM Standalone Controller FCN/FCJ Series (When using Yokogawa Electric FCN/FCJ ModbusRTU 1:n Protocol)**

| CPU | Link I/F | Cable Diagram | Target Unit |
|---|---|--|---|
|  |  |  |  |
| FCN | COM Port on CPU | RS-232C (Cable Diagram 7) | GP/GLC/ST Series, Factory Gateway |
| | RS232C Port 1 or 2 on NFLR111 RS232C Communication Module | RS-232C (Cable Diagram 8) | |
| | Communication Terminal Block on NFLR121 RS422/RS485 Communication Module | RS-422 (4-wire) (Cable Diagram 9) | |
| | | RS-422 (4-wire) 1:n Communication (Cable Diagram 10) | |
| | | RS-422 (2-wire) (Cable Diagram 11) | |
| RS-422 (2-wire) 1:n Communication (Cable Diagram 12) | | | |
| FCJ | COM Port 1 or 2 on CPU | RS-232C (Cable Diagram 7) | GP/GLC/ST Series, Factory Gateway |

■ **STARDOM Standalone Controller FCN/FCJ Series (When using Yokogawa Electric FACTORY ACE 1:1, FACTORY ACE 1:n Protocol)**

| CPU | Link I/F | Cable Diagram | Target Unit |
|---|---|--|---|
|  |  |  |  |
| FCN | COM Port on CPU | RS-232C (Cable Diagram 4) | GP/GLC/ST Series, Factory Gateway |
| FCJ | COM Port 1 or 2 on CPU | | |

2.8.2 Cable Diagrams

The cable diagrams illustrated below and the cable diagrams recommended by Yokogawa Electric may differ, however, using these cables for your PLC operations will not cause any problems.

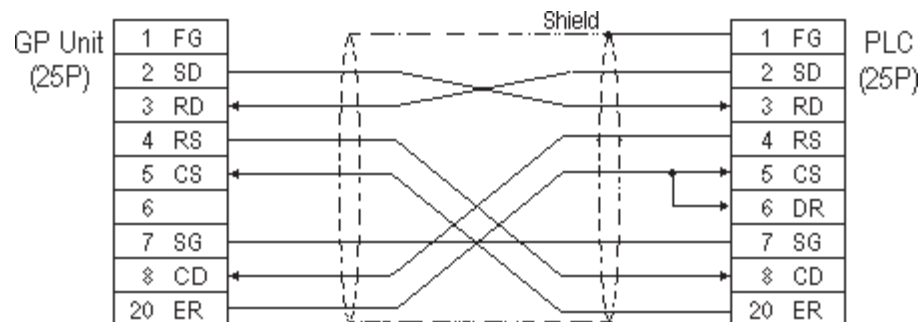


Careful! Ground your PLC's FG terminal according to your country's applicable standard. For details, refer to the corresponding PLC manual.



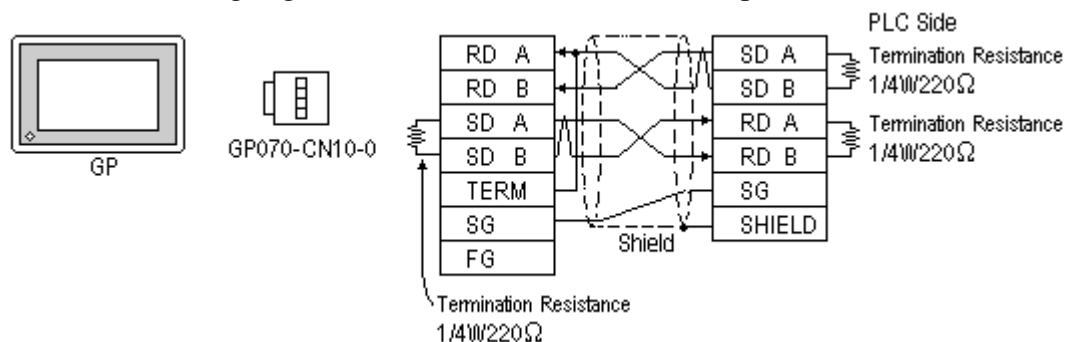
- **Connect the FG line of the Shield cable to either the GP or PLC, depending on your environment. When using a connector hood and grounding the FG line, be sure to use an electrical conductor. The following connection diagrams show examples for connecting a shielded cable to the PLC.**
- **For the RS-232C connection, use a cable length less than 15m.**
- **If a communications cable is used, it must be connected to the SG (signal ground).**
- **For the RS-422 connection, refer to Yokogawa's PLC manual for the cable length.**

Cable Diagram 1 (RS-232C)

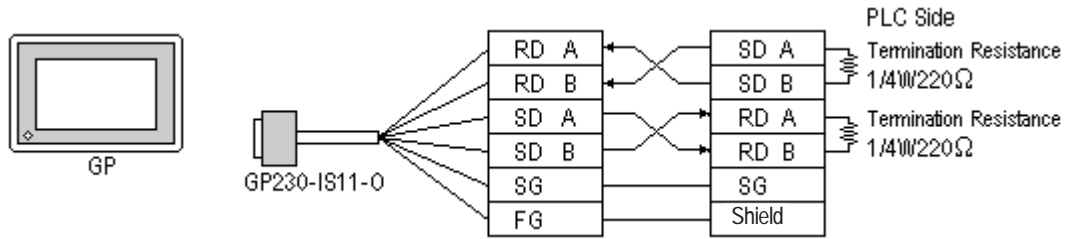


Cable Diagram 2 (RS-422)

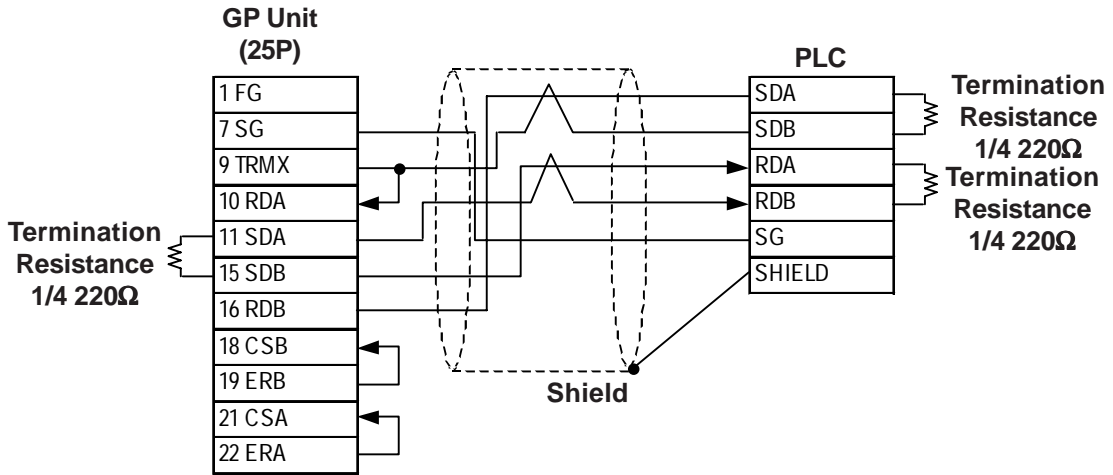
- When using Digital's RS-422 connector terminal adapter GP070-CN10-0



- When using Digital's RS-422 Cable, GP230-IS11-0



- When making your own cable connections



- When making your own connections, we recommend using Hitachi Densen's CO-SPEV-SB(A)3P*0.5SQ cable.
- When connecting the #9 and #10 pins in the GP Serial I/F, a termination resistance of 100Ω is added between RDA and RDB.
- When connecting an RS422 cable, length can be up to 600 meters.

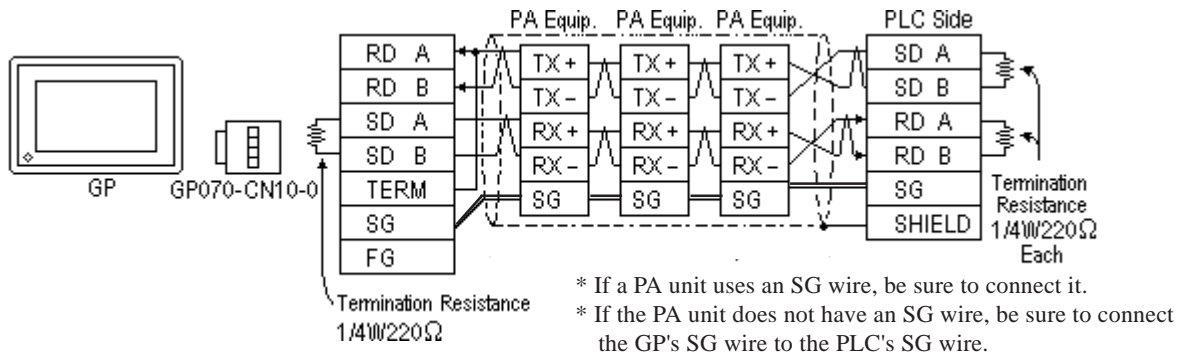
Cable Diagram 3 (RS-422)

The diagrams below are examples of wire connections on both ends of the GP and PLC. Setup the termination resistors on both ends of the equipment, as illustrated.

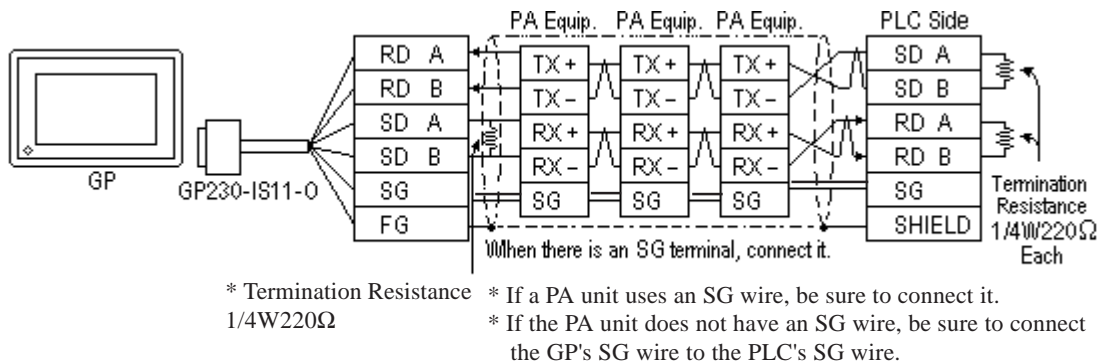


- **Be careful as the reading of the A signal and B signal is opposite on the GP and the LC02-0N (PLC).**
- **Make the PC Link I/F Station Number from 2 to 32.**
- **Setup the PA unit connected to the GP using different Unit Numbers. An error will develop if multiple PA units are setup using the same Unit Number. When an error occurs, the error message "Data Reception Error occurs (02:FD:*)" (** indicates the unit No.) will appear.**
- **Setup the GP (1) and PA units (n#) with the same Communication Settings.**

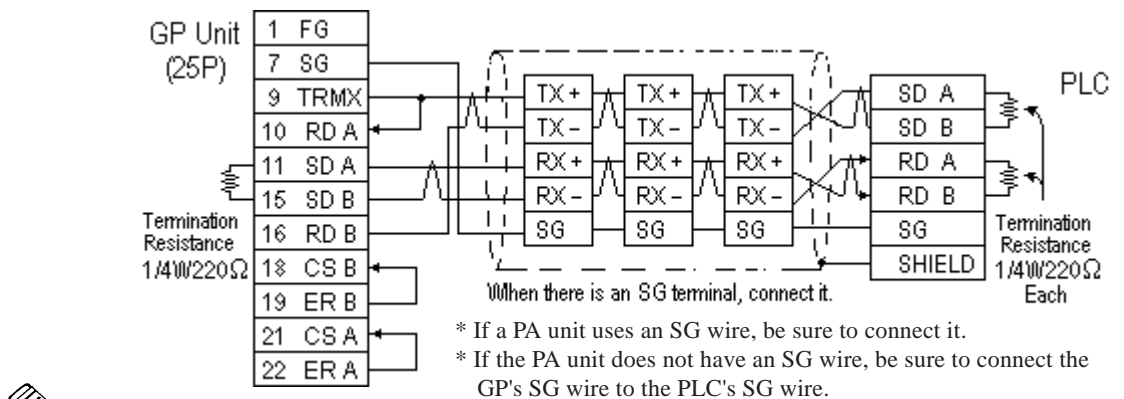
- When using Digital's RS-422 connector terminal adapter GP070-CN10-0



- When using Digital's RS-422 Cable, GP230-IS11-0



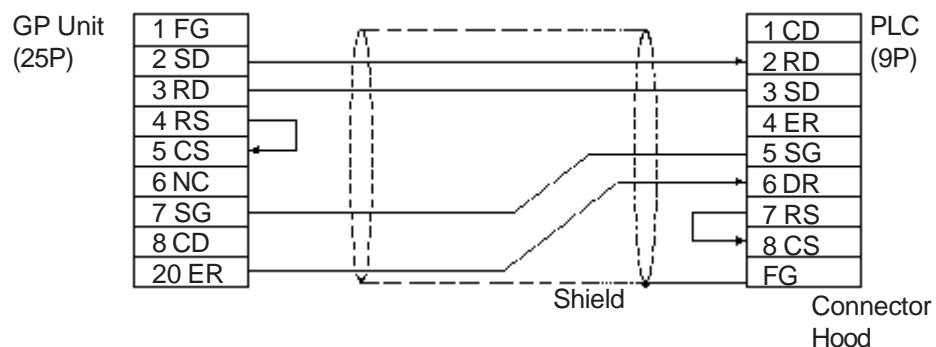
- When making your own cable connections



Note:

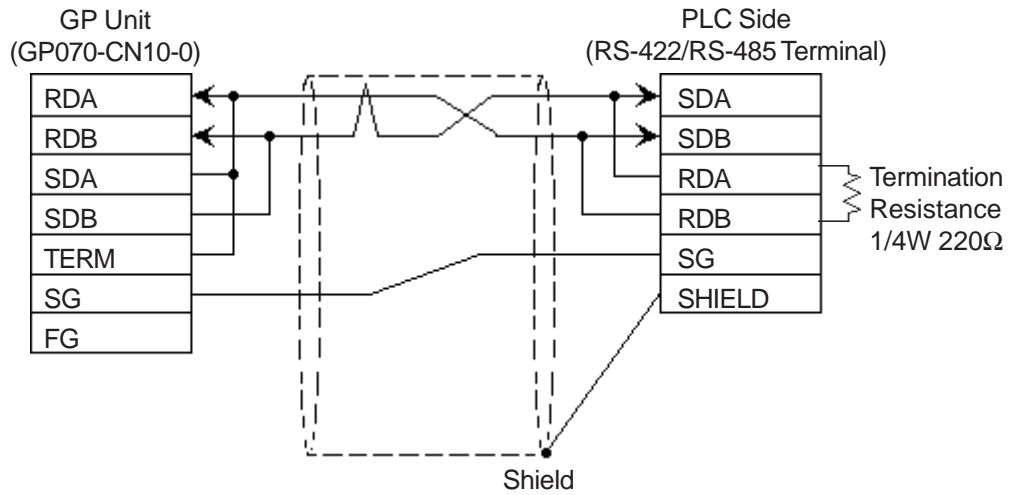
When connecting the #9 and #10 pins in the GP Serial I/F, a termination resistance of 100Ω is added between RDA and RDB.

Cable Diagram 4 (RS-232C)

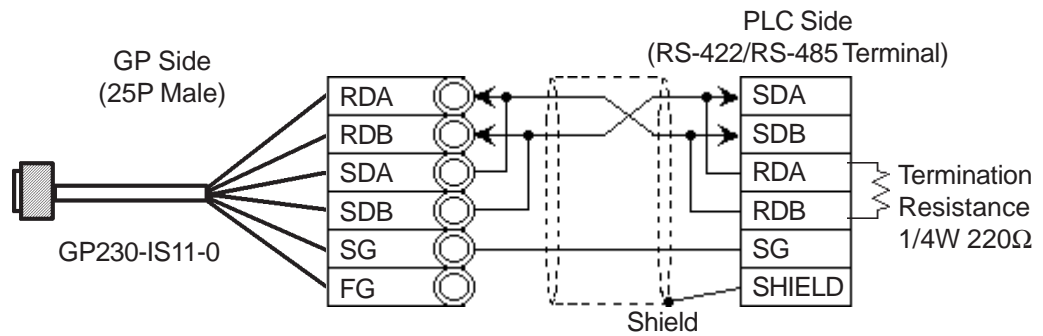


Cable Diagram 5 (RS-422)

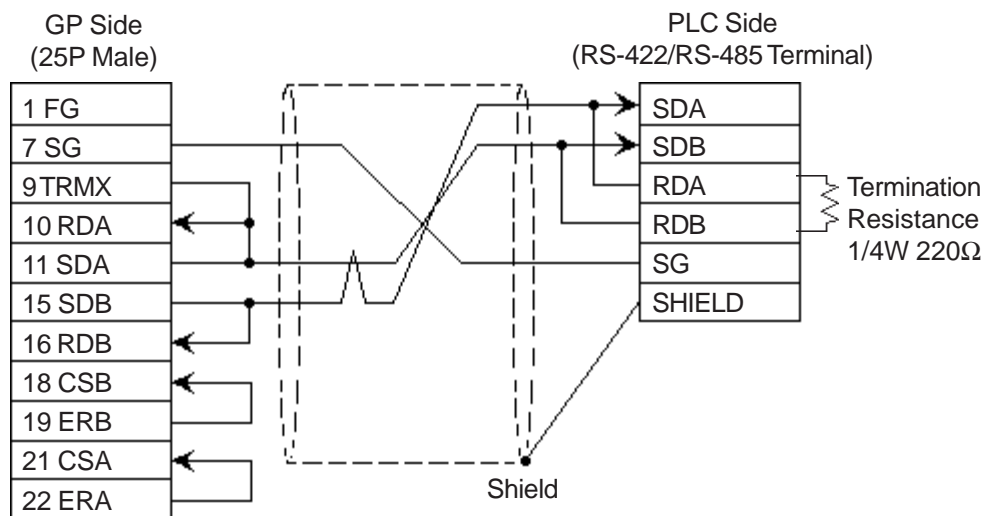
- When using Digital's RS-422 connector terminal adapter GP070-CN10-0



- When using Digital's RS-422 cable, GP230-IS11-0

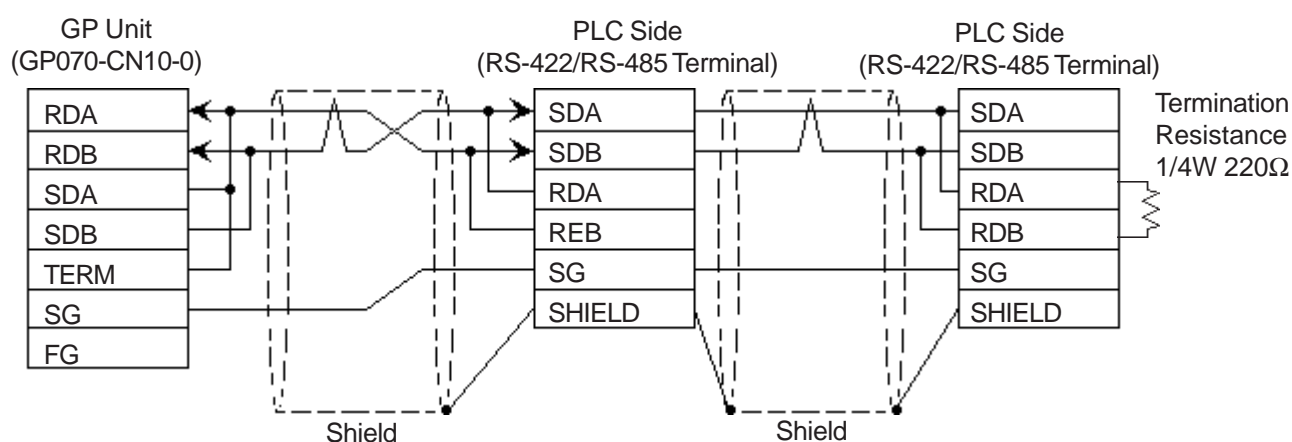


- When making your own cable connections

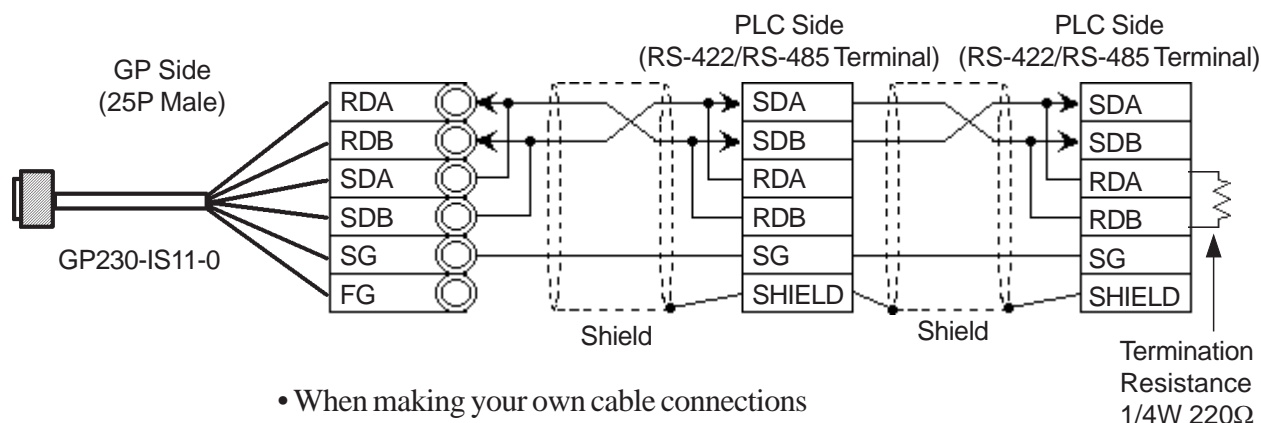


Cable Diagram 6 (RS-422)

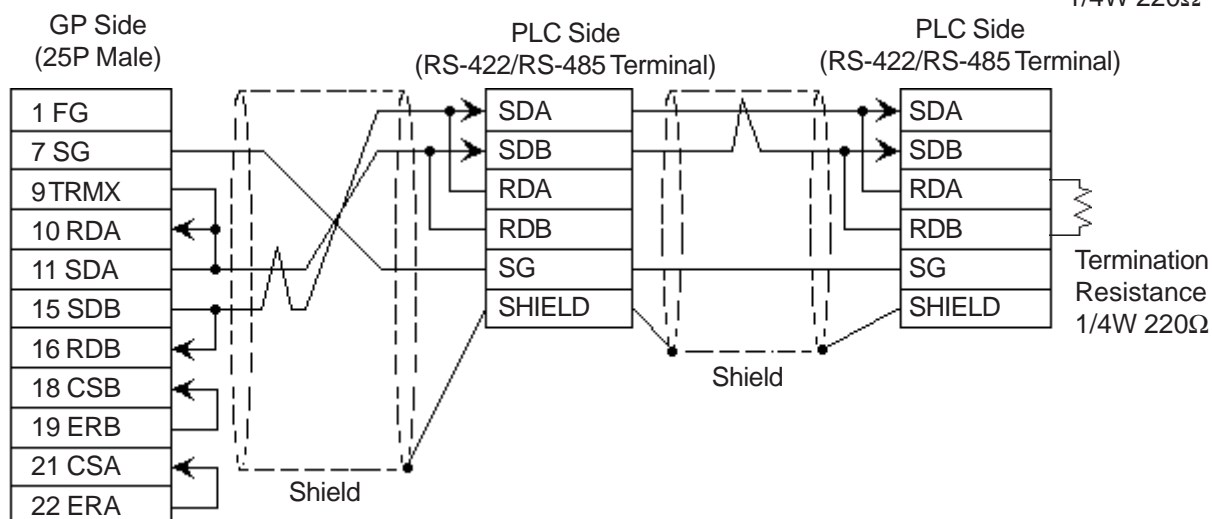
- When using Digital's RS-422 connector terminal adapter GP070-CN10-0



- When using Digital's RS-422 cable, GP230-IS11-0



- When making your own cable connections

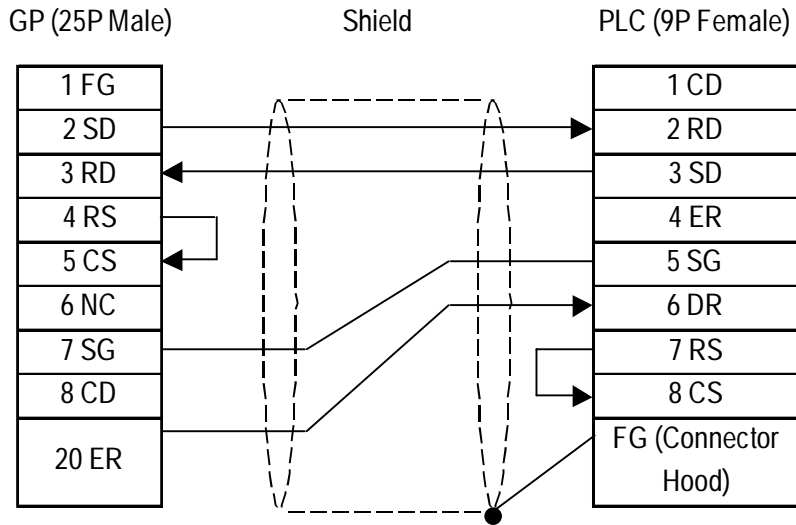


Note:

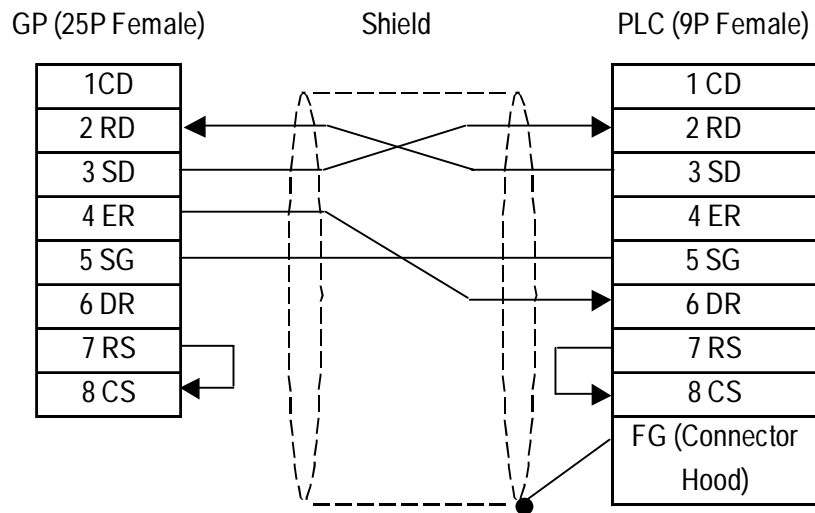
- If the connection is terminated while 2-wire type communication is being carried out, use the 2-wire termination resistance switch on the PC link module (F3LC11-2N).
- The names of the poles A and B are reversed between the GP and the PLC.

Cable Diagram 7 (RS-232C)

- When connecting to a GP.

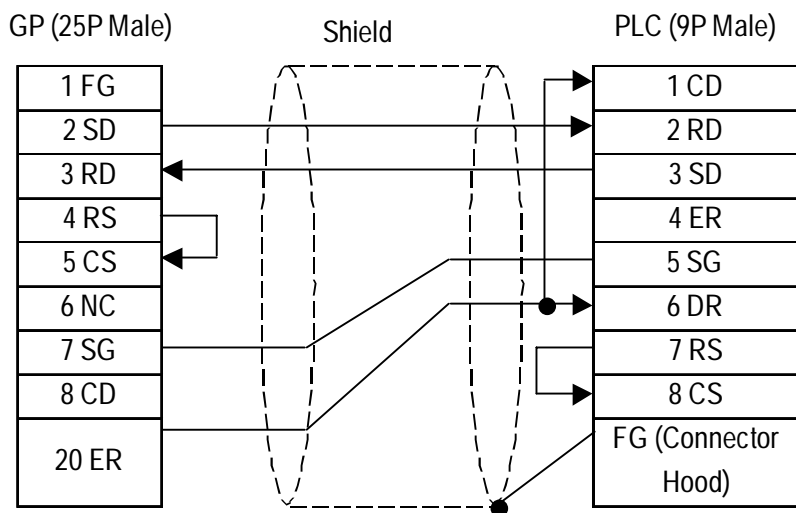


- When using ST401 unit.

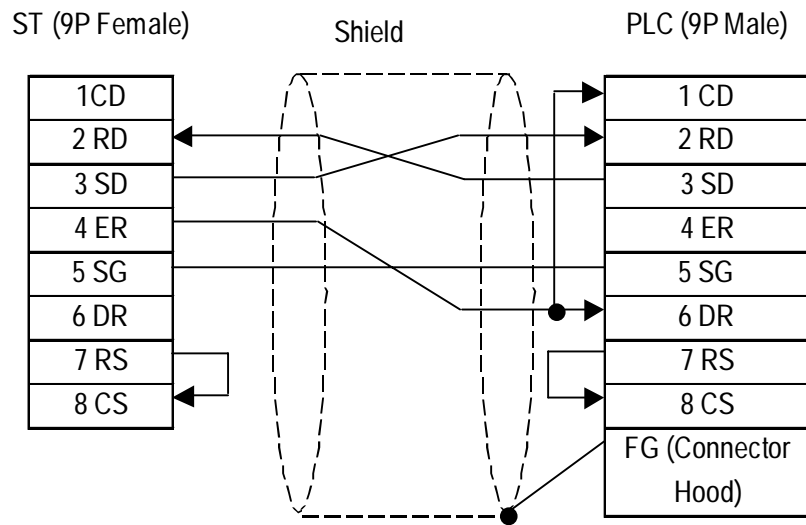


Cable Diagram 8 (RS-232C)

- When connecting to a GP.

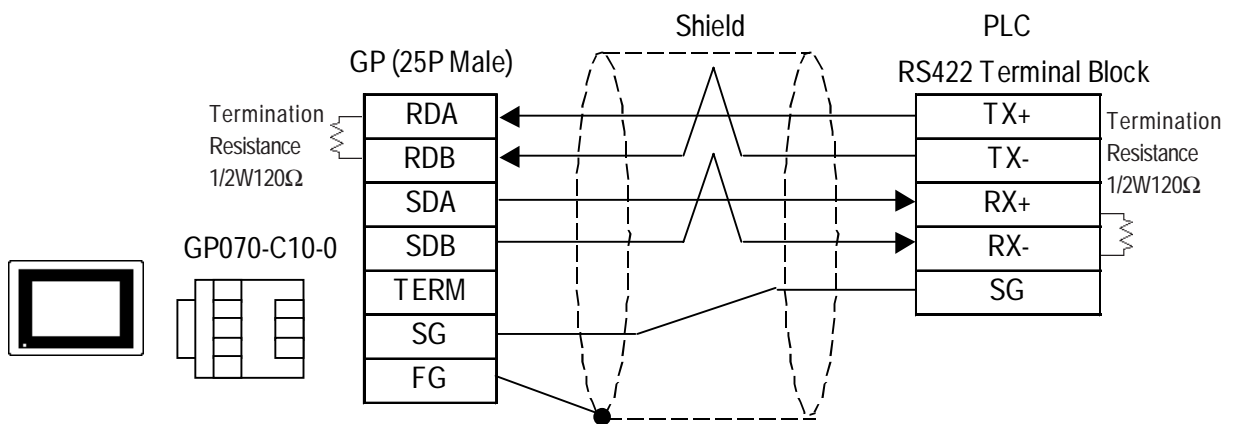


- When using ST401 unit.

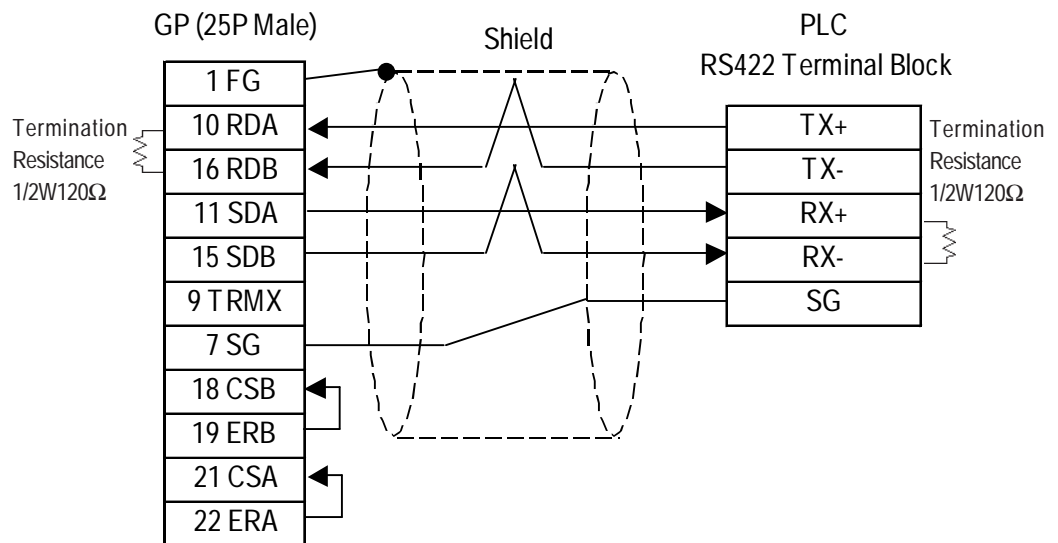


Cable Diagram 9 (RS-422)

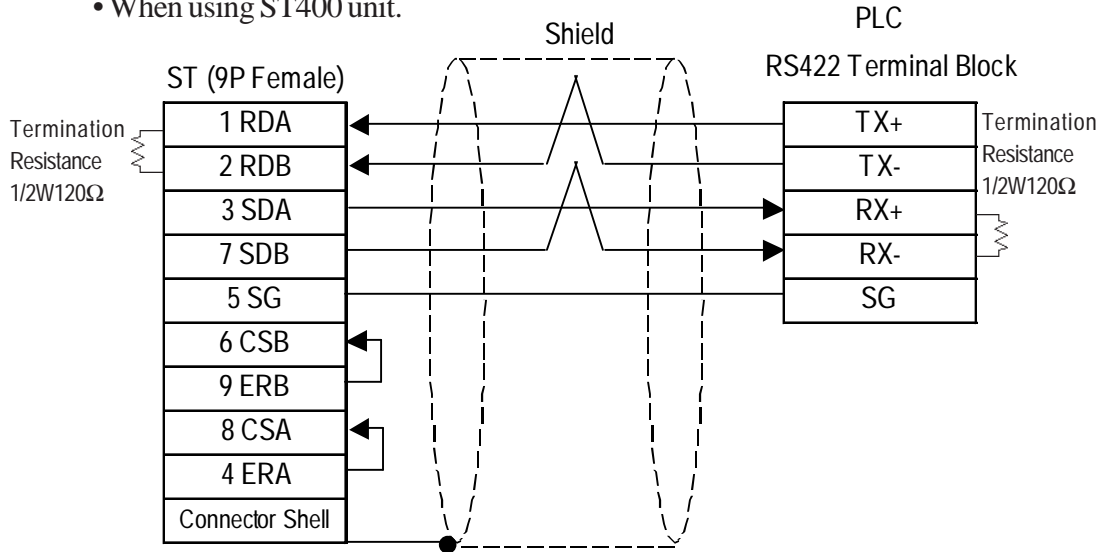
- When using Digital's RS-422 connector terminal adapter GP070-CN10-0



- When making your own cable connections

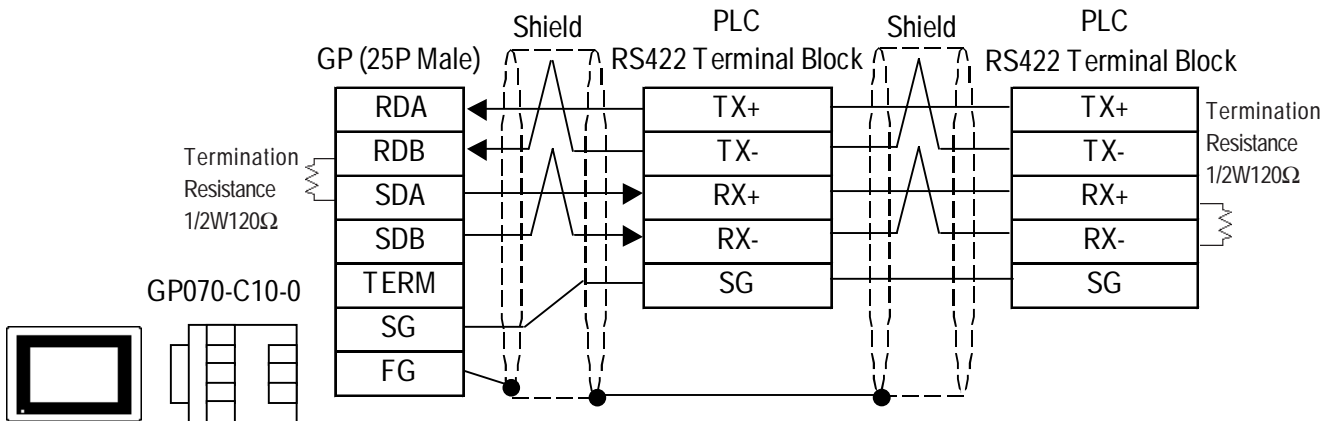


- When using ST400 unit.

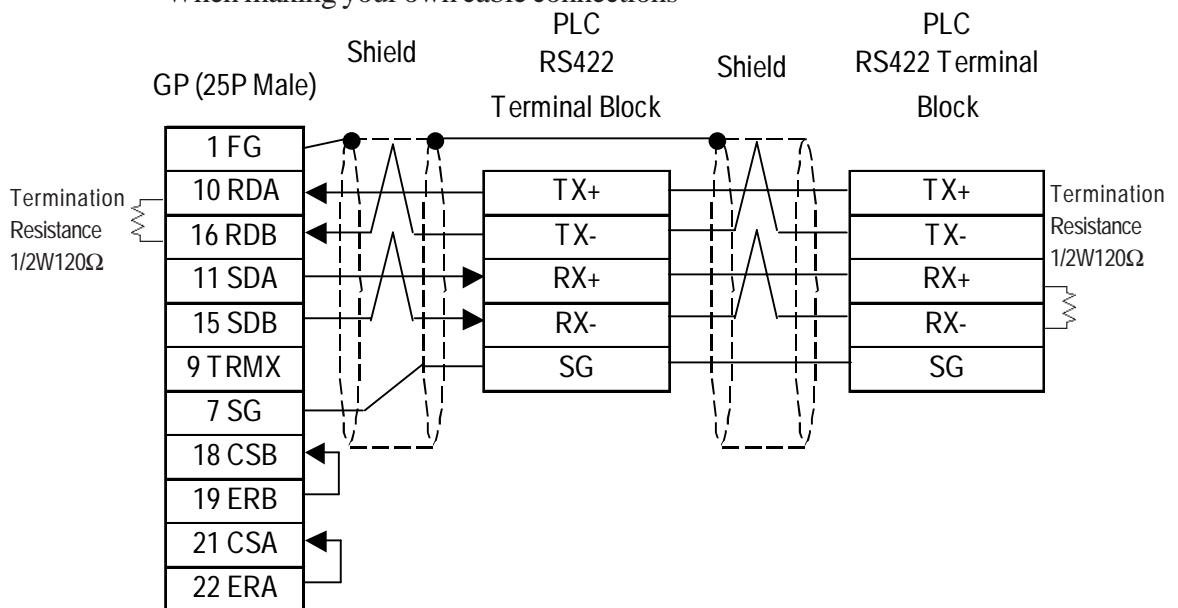


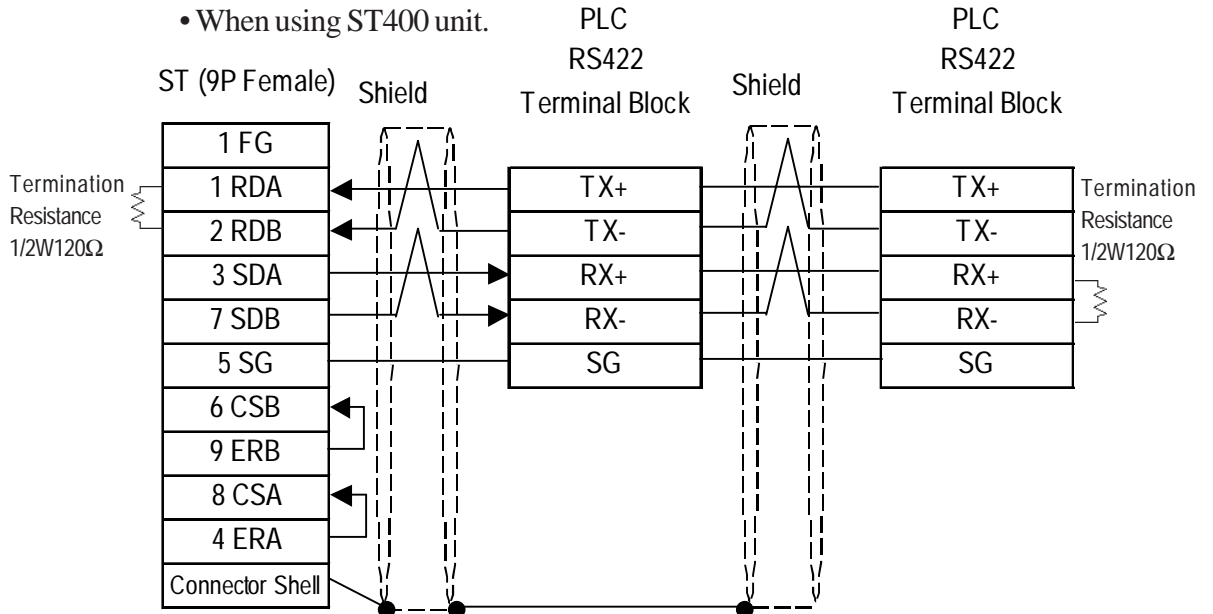
Cable Diagram 10 (RS-422)

- When using Digital's RS-422 connector terminal adapter GP070-CN10-0



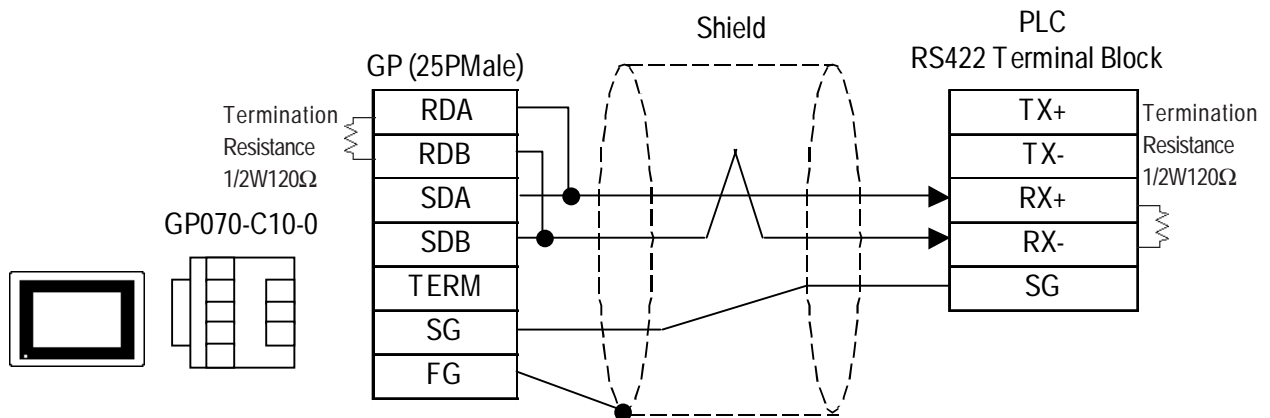
- When making your own cable connections



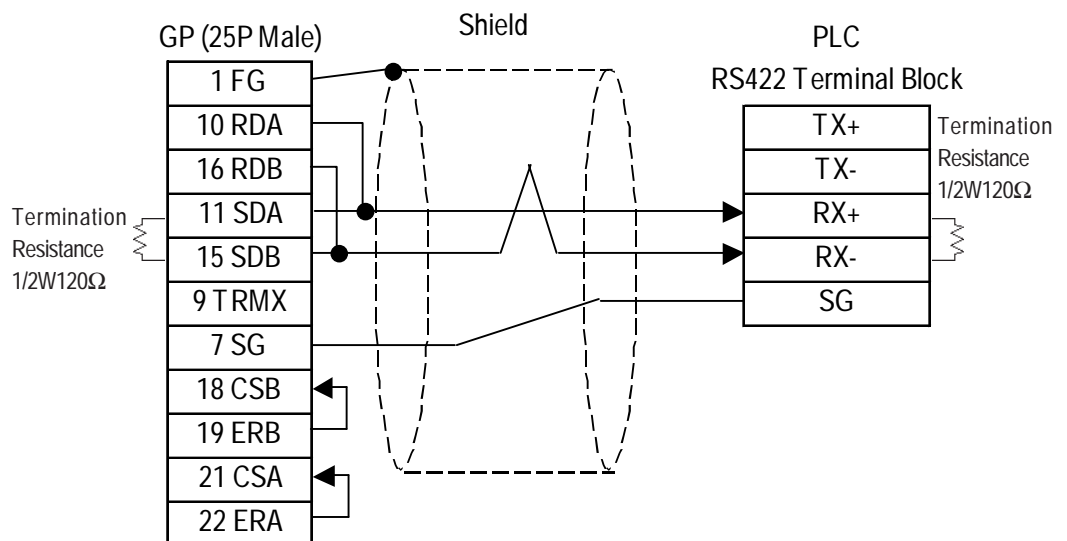


Cable Diagram 11 (RS-422)

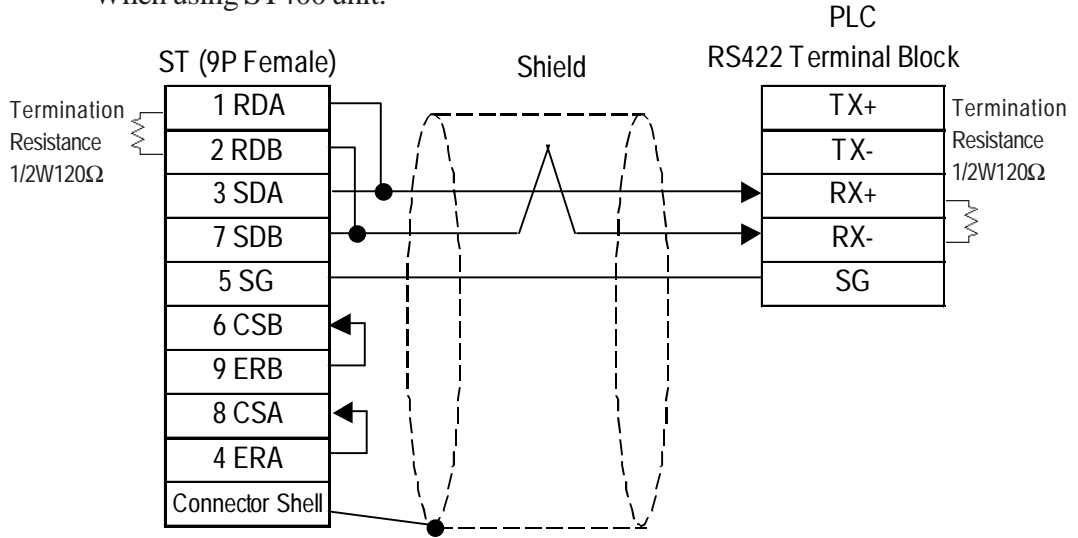
- When using Digital's RS-422 connector terminal adapter GP070-CN10-0



- When making your own cable connections

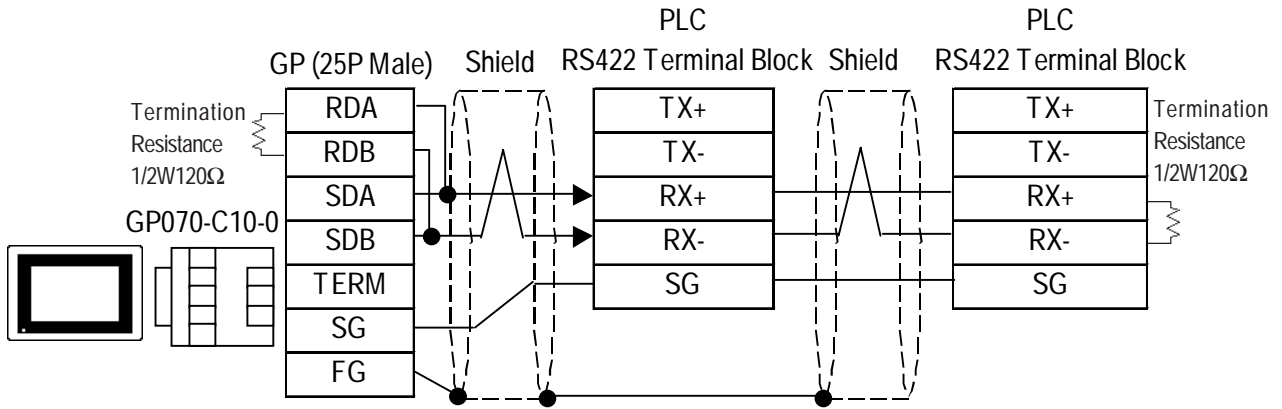


- When using ST400 unit.

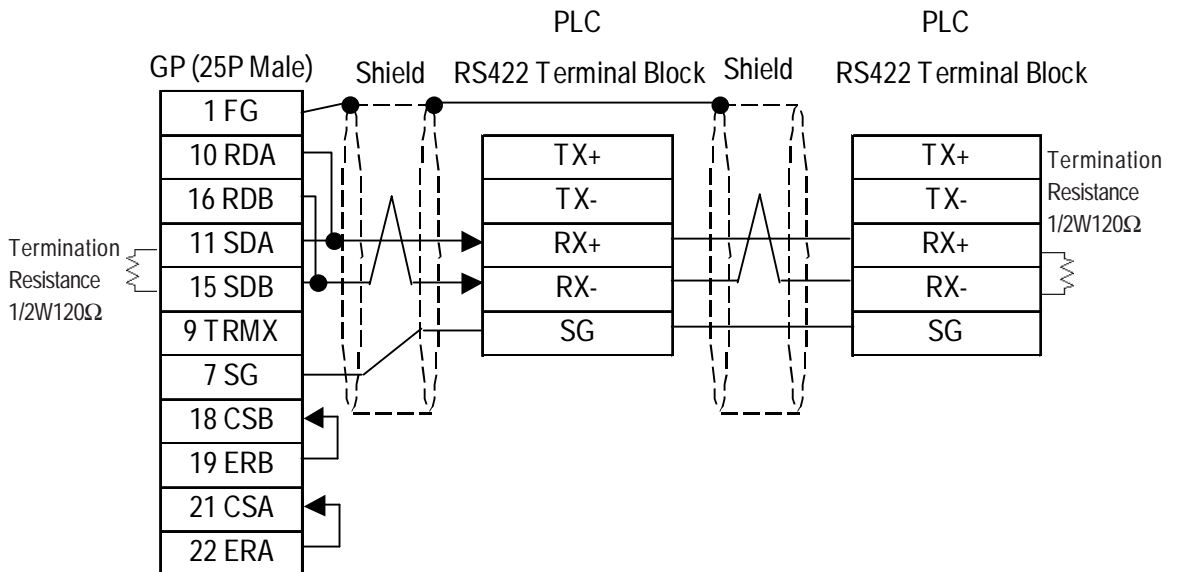


Cable Diagram 12 (RS-422)

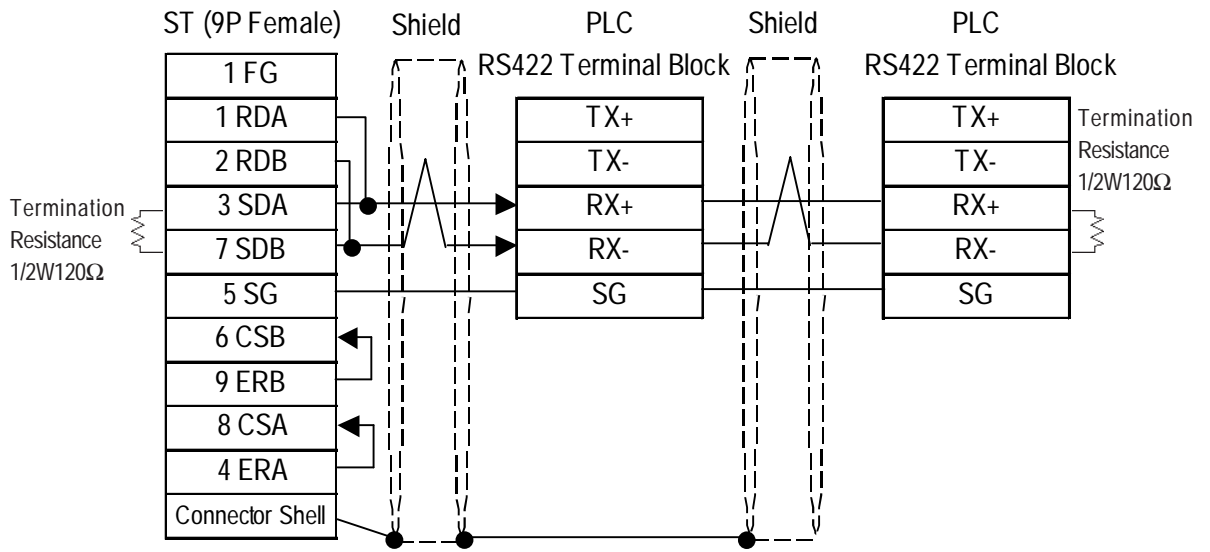
- When using Digital's RS-422 connector terminal adapter GP070-CN10-0



- When making your own cable connections



- When using ST400 unit.













2.8.3 Supported Devices

The following describes the range of devices supported by the GP.

■ FA500 (1:1 communication)

 Setup System Area here.

| Device | Bit Address | Word Address | Particulars |
|-------------------------|-----------------|-----------------|--|
| Input Relay | X00201 ~ X61164 | X00201 ~ X61149 |  *1*2 |
| Output Relay | Y00201 ~ Y61164 | Y00201 ~ Y61149 |  *1*2 |
| Internal Relay | I0001 ~ I2048 | I0001 ~ I2033 |  *2 |
| Joint Relay | E0001 ~ E2048 | E0001 ~ E2033 |  *2 |
| Special Relay | M001 ~ M512 | M001 ~ M497 |  *2*3 |
| Link Relay | L0001 ~ L1024 | L0001 ~ L1009 |  *2*3 |
| Timer (contact) | T001 ~ T256 | --- | *2 |
| Counter (contact) | C001 ~ C256 | --- | *2 |
| Timer (current value) | --- | TP001 ~ TP256 | *2 |
| Timer (setup value) | --- | TS001 ~ TS256 | *2 |
| Counter (current value) | --- | CP001 ~ CP256 | *2 |
| Counter (setup value) | --- | CS001 ~ CS256 | *2 |
| Data Register | --- | D0001 ~ D2048 |  *2 |
| Common Register | --- | B0001 ~ B2048 |  *2 |
| Special Register | --- | Z001 ~ Z128 |  *2*3 |
| Link Register | --- | W0001 ~ W1024 |  *2*3 |

L/H

* 1 The value of the terminal number (bit), 01~49, of the last two digits for the Input Relay and Output Relay can only be a multiple of 16 +1.

E.g. For X00201

$$X \quad \overbrace{002}^{\text{Slot No.}} \quad \overbrace{01}^{\text{Terminal No.}}$$

* 2 Write the CPU Number (1~4) in front of the device name.

E.g. For Internal Relay I0001, CPU #3:

$$\overbrace{3}^{\text{CPU No.}} \quad \overbrace{I0001}^{\text{Device Name}}$$

* 3 Cannot perform data write.

■ FA500 (1:n communication)

 Setup System Area here.

| Device | Bit Address | Word Address | Particulars |
|-------------------------|-----------------|-----------------|------------------------------|
| Input Relay | X00201 ~ X61164 | X00201 ~ X61149 | $\boxed{\div 16 + 1}$ *1*2 |
| Output Relay | Y00201 ~ Y61164 | Y00201 ~ Y61149 | $\boxed{\div 16 + 1}$ *1*2 |
| Internal Relay | I0001 ~ I2048 | I0001 ~ I2033 | $\boxed{\div 16 + 1}$ *2 |
| Joint Relay | E0001 ~ E2048 | E0001 ~ E2033 | $\boxed{\div 16 + 1}$ |
| Special Relay | M001 ~ M512 | M001 ~ M497 | $\boxed{\div 16 + 1}$ *2*3 |
| Link Relay | L0001 ~ L1024 | L0001 ~ L1009 | $\boxed{\div 16 + 1}$ *2*3 |
| Timer (contact) | T001 ~ T256 | --- | *2 |
| Counter (contact) | C001 ~ C256 | --- | *2 |
| Timer (current value) | --- | TP001 ~ TP256 | *2 |
| Timer (setup value) | --- | TS001 ~ TS256 | *2 |
| Counter (current value) | --- | CP001 ~ CP256 | *2 |
| Counter (setup value) | --- | CS001 ~ CS256 | *2 |
| Data Register | --- | D0001 ~ D2047 | $\boxed{\text{Bit } 5}$ *2 |
| Common Register | --- | B0001 ~ B2047 | $\boxed{\text{Bit } 5}$ *2 |
| Special Register | --- | Z001 ~ Z128 | $\boxed{\text{Bit } 5}$ *2*3 |
| Link Register | --- | W0001 ~ W1024 | $\boxed{\text{Bit } 5}$ *2*3 |

L/H

* 1 When setting Word Address, set the value of the terminal number, 01~49, of the last two digits for the Input Relay and Output Relay to a multiple of 16+1.

E.g. For X00201

X 002 01
 Slot No. Terminal No.

* 2 Write the CPU Number (1~4) in front of the device name.

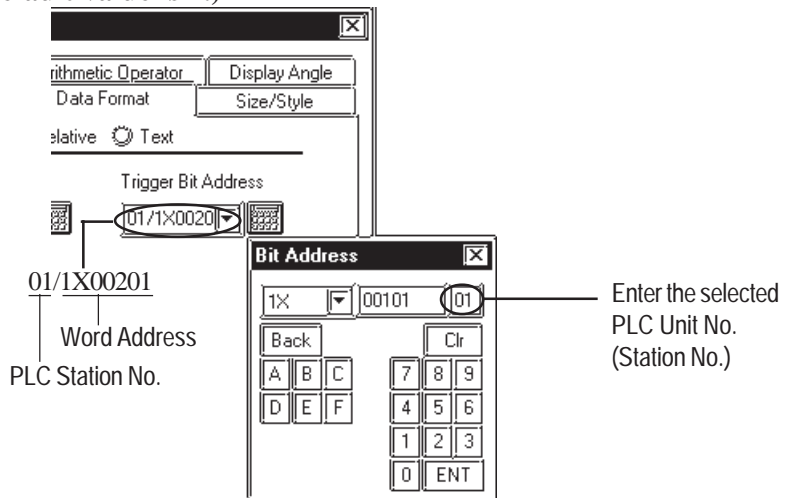
E.g. For Internal Relay I0001, CPU #3:

3 I0001
 CPU No. Device Name

* 3 Cannot perform data write.



When setting tags up in GP-PRO/PBIII for Windows, the PLC Station number can be specified during address Input. If a station number is not indicated, it automatically uses the previously entered station number. (The initial default value is 1.)



■ **FA-M3 (1:1 Communication)**

 Setup System Area here.

| Device | Bit Address | Word Address | Particulars |
|-------------------------|-----------------|---|--|
| Input Relay | X00201 ~ X71664 | X00201 ~ X71649 | ÷16+ *1*2 |
| Output Relay | Y00201 ~ Y71664 | Y00201 ~ Y71649 | ÷16+ *1 |
| Internal Relay | I00001 ~ I65535 | I00001 ~ I65521 | ÷16+ |
| Joint Relay | E0001 ~ E4096 | E0001 ~ E4081 | ÷16+ |
| Special Relay | M0001 ~ M9984 | M0001 ~ M9969 | ÷16+ |
| Link Relay | L00001 ~ L78192 | L00001 ~ L78177 | ÷16+ *6 |
| Timer (contact) | T0001 ~ T3072 | --- | *2 |
| Counter (contact) | C0001 ~ C3072 | --- | *2 |
| Timer (current value) | --- | TP0001 ~ TP3072 | |
| Timer (setup value) | --- | TS0001 ~ TS3072 | *2 |
| Counter (current value) | --- | CP0001 ~ CP3072 | |
| Counter (setup value) | --- | CS0001 ~ CS3072 | *2 |
| Data Register | --- | D00001 ~ D65535 | Bit 5 |
| File Register | --- | B00001 ~ B065536 | Bit 5 *3*4 |
| | | B065537 ~ B131072 | |
| | | B131073 ~ B196608 | |
| | | B196609 ~ B262144 | |
| Joint Register | --- | R0001 ~ R4096 | Bit 5 |
| Special Register | --- | Z001 ~ Z1024 | Bit 5 |
| Link Register | --- | W00001 ~ W74096 | Bit 5 *5*6 |

L/H

(See next page)

*1 The value of the terminal number (bit), 01~49, of the last two digits for the Input Relay and Output Relay can only be a multiple of 16 +1.

E.g. For X00201

X 002 01
 Slot No. └──┬──┘ └──┬──┘ Terminal No.

*2 Cannot perform data write.

*3 File registers are each 65,535 words on your GP application.

You cannot extend over more than a single data "block" when performing the following features.

Be sure to set these features' settings so they are within a single data block.

1) "a-tag " settings

2) Performing Block read/write from Pro-Server

3) Designating the "Convert from" and "Convert to" address for the "Address Conversion" features

*4 When using a PC Link module, only Link Register up to B99999 can be used.

*5 Up to 4,096 link registers can be used.

*6 Enter Link Relay (L) and Link Register (W) data as follows:

(Ex.) When entering Link Relay "L71024" data.

L 7 1024

└──┬──┘ └──┬──┘ └──┬──┘ └──┬──┘
 Address (Link Relay: 0001 to 8192, Link Device: 0001 to 4096)
 Link Number (0 to 7)
 Device Name (Link Relay: L, Link Device: W)

The address data's left-most digit is the Link Number, and the next four digits are the address.

• Write the CPU Number (1~4) in front of the device name.

E.g. For Internal Relay I0001, CPU #3:

3 0001
 CPU No. └──┬──┘ └──┬──┘ Device Name














• The types of devices that can be used will vary depending on the type of PLC.

For detailed information refer to Yokogawa's Sequencer CPU manual.

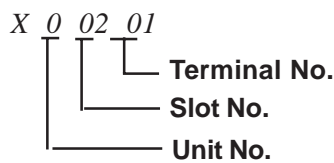
■ **FA-M3** (1:n Communication)

 Setup System Area here.

| Device | Bit Address | Word Address | Particulars | |
|-------------------------|-----------------|-----------------|--|--|
| Input Relay | X00201 ~ X71364 | X00201 ~ X71349 |  *1*2 | |
| Output Relay | Y00201 ~ Y71364 | Y00201 ~ Y71349 |  *1 | |
| Internal Relay | I0001 ~ I32768 | I0001 ~ I32753 |  | |
| Joint Relay | E0001 ~ E4096 | E0001 ~ E4081 |  | |
| Special Relay | M0001 ~ M9984 | M0001 ~ M9969 |  | |
| Link Relay | L00001 ~ L72048 | L00001 ~ L72033 |  | |
| Timer (contact) | T0001 ~ T2047 | --- | *2 | |
| Counter (contact) | C0001 ~ C2047 | --- | *2 | |
| Timer (current value) | --- | TP0001 ~ TP2047 | L/H | |
| Timer (setup value) | --- | TS0001 ~ TS2047 | | |
| Counter (current value) | --- | CP0001 ~ CP2047 | | |
| Counter (setup value) | --- | CS0001 ~ CS2047 | | |
| Data Register | --- | D0001 ~ D2047 | |  |
| File Register | --- | B0001 ~ B2047 | |  |
| Joint Register | --- | R0001 ~ R2047 | |  |
| Special Register | --- | Z001 ~ Z1024 | |  |
| Link Register | --- | W0001 ~ W11024 | |  *3 |

*1 The value of the terminal number (bit), 01~49, of the last two digits for the Input Relay and Output Relay can only be a multiple of 16 +1.

E.g. For X00201

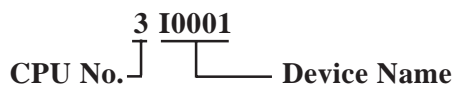


*2 Cannot perform data write.

*3 A total of up to 4,096 link registers can be used.

- Write the CPU Number (1~4) in front of the device name.

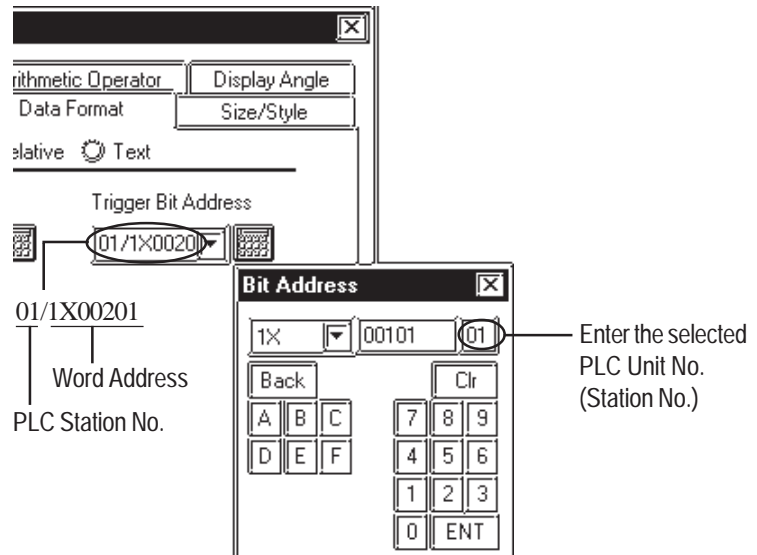
E.g. For Internal Relay I0001, CPU #3:



The range of devices that can be used will vary depending on the type of PLC. For detailed information refer to the Yokogawa's Sequencer CPU manual.



- When running tag setup in GP-PRO/PBIII for Windows, the PLC Station number can be specified at address Input. If a station number is not indicated, it automatically uses the previously entered station number. (The initial default value is 1.)



■ STARDOM Standalone Controller (When using Yokogawa Electric FACTORY ACE 1:1, FACTORY ACE 1:1 Protocol)

| Register Image | Bit Address | Word Address | Particulars |
|----------------|----------------|-------------------|---------------|
| Internal Relay | I0001 ~ I32767 | I0001 ~ 32753 | $\div 16 + 1$ |
| Data Register | --- | D00001 ~ D32767 | Bit 15 |
| File Register | --- | B000001 ~ B032767 | Bit 15 |



- Set each device using a CPU number of 1.

■ **STARDOM Standalone Controller (When using Yokogawa Electric FCN/FCJ ModbusRTU 1:n Protocol)**

 Setup System Area here.

| Device | Bit Address | Word Address | Note | |
|-----------------|-------------------------|----------------------|--|-----|
| Coil | 1:00001 to 31:09984 | 1:00001 to 31:09969 | ±16+1 | L/H |
| Input Relay | 1:10001 to 31:19984 | 1:10001 to 31:19969 | ±16+1 *1 | |
| Retain Register | 1:4000100 to 16:4999915 | 1:40001 to 16:49999 | | |
| | ————— | 17:40001 to 31:49999 | Bit15 *2 | |
| Input Register | ————— | 1:30001 to 31:39999 | Bit15 *1 | |

*1 Read only. Write is not possible. If write is attempted, a Host Communication error (02:FB) will occur.

*2 Node address 17 to 31's Bit Address designation becomes Bit15 operation.



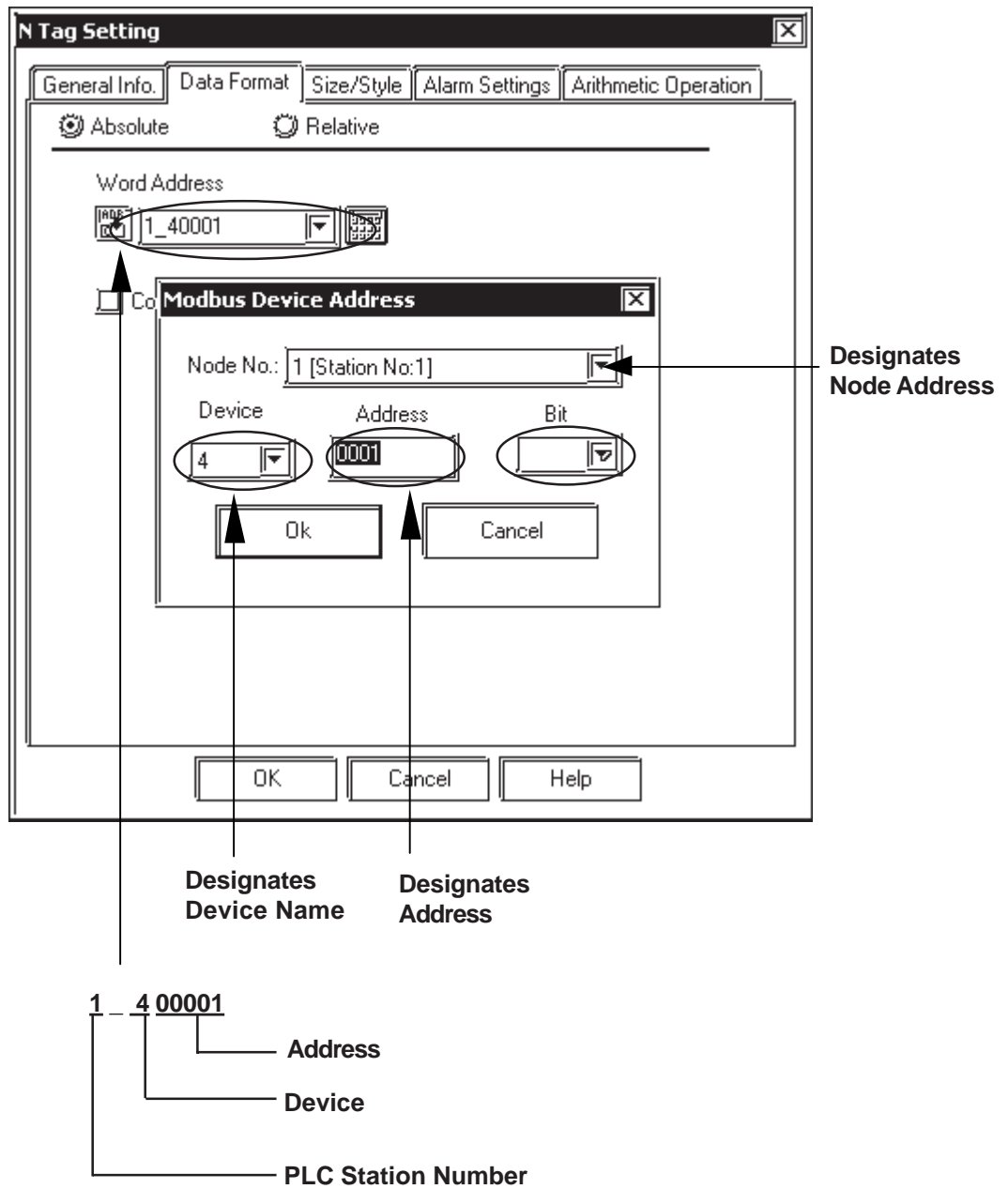
- Note:**
- Address ranges depend on the type of PLC used. For details please refer to your PLC unit's manual.

When using Pro-Server:

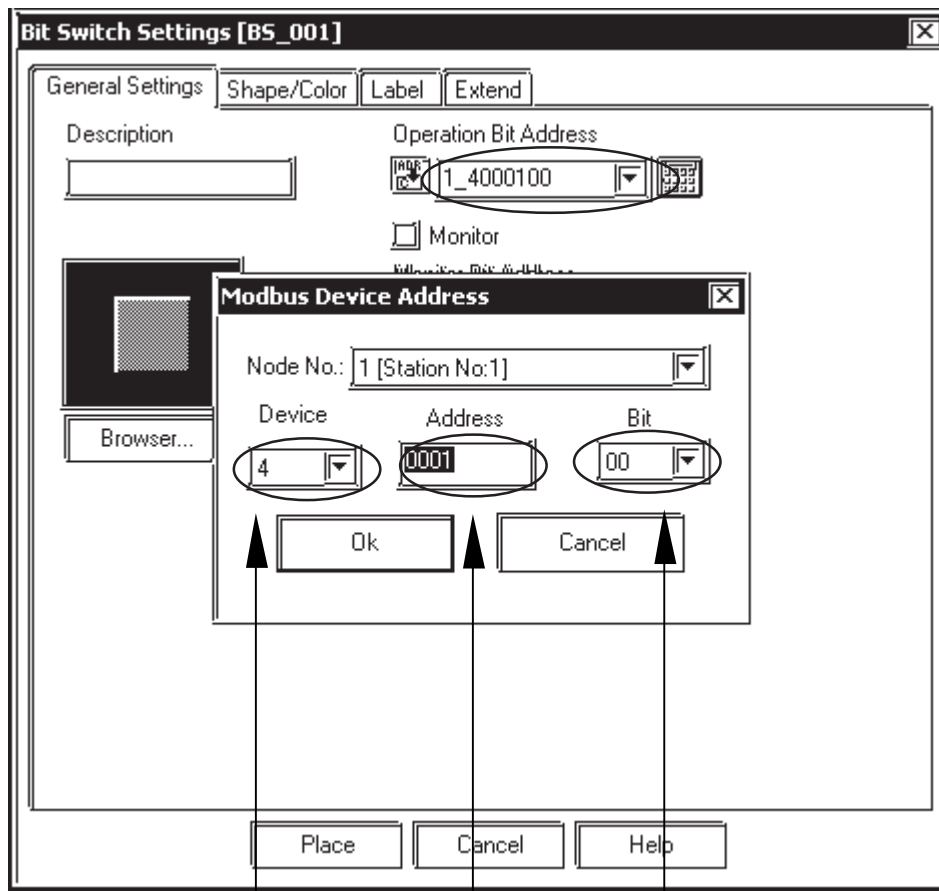


When accessing via Pro-Server, be sure to define in advance Device Addresses to be accessed, and after creating project screens, Pro-Server must be used to import the symbols. For details, refer to your Pro-Server Operation Manual.

■ When using Word Addresses



■ When using Bit Addresses



Designates the Device Address

Designates the Address

Designates the Bit Position

2.8.4 Environment Setup

The following lists Digital's recommended PLC and GP communication settings.

■ FACTORY ACE Series (using Link I/F RS-232C connection)

| GP Setup | | PC Link Module Setup | |
|----------------------|------------|------------------------------|-----------|
| Baud Rate | 19200 bps | Baud Rate ^{*1} | 19200 bps |
| Data Length | 8 bits | Data Length | 8 bits |
| Stop Bit | 1 bit | Stop Bit | 1 bit |
| Parity Bit | None | Parity Bit | None |
| Data Flow Control | ER Control | --- | |
| Communication Format | RS-232C | --- | |
| --- | | Check Sum | No |
| --- | | Specify End Character | Yes |
| --- | | Protect Function | No |
| --- | | Data Format Setup Switch | 8 OFF |
| Unit No. | 1 | Station Number ^{*2} | 1 |

**1 The PC Link I/F F3LC11-1F can be communicated by 115.2kbps.*

**2 The PC Link I/F F3LC01-1N does not have this setting.*

■ FACTORY ACE Series (using Link I/F RS-422 connection)

| GP Setup | | PC Link Module/PA Equipment Setup | |
|--|--|-----------------------------------|---|
| Baud Rate (1:1 comm) | 19200 bps | Baud Rate (1:1 comm) | 19200 bps |
| Baud Rate (1:n comm) | 9600 bps | Baud Rate (1:n comm) | 9600 bps |
| Data Length | 8 bits | Data Length | 8 bits |
| Stop Bit | 1 bit | Stop Bit | 1 bit |
| Parity Bit | None | Parity Bit | None |
| Data Flow Control | ER Control | --- | |
| Communication Format (Select 4-wire type) | 4-wire type | --- | |
| Communication Format (Select 2-wire type) | 2-wire type | --- | |
| --- | | Checksum | No |
| --- | | Specify End Character | Yes |
| --- | | Protect Function | No |
| --- | | Data Format Setup Switch | 8 OFF |
| Unit No. (1:1 comm) | FA-500: 2 FA-M3: 1 | Station No. (1:1 comm) | FA-500: 2 FA-M3: 1 |
| Unit No. (1:n comm) | Match with PC Link Module station No. | Station No. (1:n comm) | Set up so that all PA Equip., PC Link module No.s are different |

■ FACTORY ACE Series (FA-M3 CPU Direct Connection)

| GP Setup | | CPU Communication Port Setup | |
|----------------------|------------|------------------------------|-------------------------|
| Baud Rate | 19200 bps | Baud Rate | 19200 bps ^{*1} |
| Data Length | 8 bits | --- | |
| Stop Bit | 1 bit | --- | |
| Parity Bit | Even | Parity Bit | Even |
| Data Flow Control | ER Control | --- | |
| Communication Format | RS-232C | --- | |
| --- | | PC Link Function | Use |
| --- | | Check Sum | No |
| --- | | Specify End Character | Yes |
| --- | | Protect Function | No |
| Unit No. | 1 | --- | |

**1 For F3SP28-3N, F3SP38-6N, F3SP53-4H, F3SP58-6H, F3SP28-3S, F3SP38-6S, F3SP53-4S, F3SP58-6S and F3SP59-7S, a baud rate of 115200 bps is also available.*

■ STARDOM Standalone Controller (When using Yokogawa Electric FACTORY ACE 1:1, FACTORY ACE 1:n Protocol)

| GP Setup | | CPU Communication Port Setup | |
|----------------------|-------------------------|------------------------------|---------------------------|
| Baud Rate | 19200 bps ^{*3} | Baud Rate | 19200 bps ^{*1*3} |
| Data Length | 8 bits | Data Length | 8 bits ^{*1} |
| Stop Bit | 1 bit | Stop Bit | 1 bit ^{*1} |
| Parity Bit | None | Parity Bit | None ^{*1} |
| Data Flow Control | ER Control | --- | |
| Communication Format | RS-232C | --- | |
| --- | | Check Sum | No ^{*2} |
| --- | | Specify End Character | Yes ^{*2} |
| Unit No. | 1 | Station No. | 1 ^{*2} |

**1 Set these parameters in the COM port setup using the Web browser.*

**2 Pass the settings to the task startup FB parameters.*

**3 Communication at 115.2 kbps is possible.*



Set the COM port as follows:

Com1SioDriver=DUONUS_S10

Com2SioDriver=DUONUS_S10

ConsoleComPort=(blank)

■ **STARDOM Standalone Controller FCN/FCJ (When using Yokogawa Electric FCN/FCJ ModbusRTU 1:n Protocol via CPU unit's COM Port connection)**

| GP Setup | | CPU Communication Port Setup | |
|----------------------|------------|------------------------------|--------------------------|
| Baud Rate | 9600 bps | Baud Rate | 9600 bps ^{*1*3} |
| Data Length | 8 bits | Data Length | 8 bits ^{*1} |
| Stop Bit | 1 bit | Stop Bit | 1 bit ^{*1} |
| Parity Bit | None | Parity Bit | None ^{*1} |
| Data Flow Control | ER Control | --- | |
| Communication Format | RS-232C | --- | |
| Station No. | 1 | Station No. | 1 ^{*2} |
| --- | | Communication Mode | RTU Mode |
| --- | | Communication Type | Slave |

*1 Set these parameters in the COM port setup using the Web browser.

*2 Pass the settings to the task startup FB parameters.

*3 Communication at 115.2 kbps is possible.



Set the COM port as follows:

Com1SioDriver=DUONUS_S10

Com2SioDriver=DUONUS_S10

ConsoleComPort=(blank)

■ **STARDOM Standalone Controller FCN (When using Yokogawa Electric FCN/FCJ ModbusRTU 1:n Protocol via NFLR111 RS232C Communication Module connection)**

| GP Setup | | NFLR111 Port Setup | |
|----------------------|------------|--------------------|----------------------------------|
| Baud Rate | 9600 bps | Baud Rate | 9600 bps ^{*1*3} |
| Data Length | 8 bit | Data Length | 8 bit ^{*1} |
| Stop Bit | 1 bit | Stop Bit | 1 bit ^{*1} |
| Parity Bit | None | Parity Bit | None ^{*1} |
| Data Flow Control | ER Control | Other Settings | Use default values ^{*1} |
| Communication Format | RS-232C | --- | |
| Station No. | 1 | Station No. | 1 ^{*2} |
| --- | | Communication Mode | RTU Mode |
| --- | | Communication Type | Slave |

*1 Set these parameters in the Resource Configurator.

*2 Pass the settings to the task startup FB parameters.

*3 Communication at 115.2 kbps is possible.

■ **STARDOM Standalone Controller FCN (When using Yokogawa Electric FCN/FCJ ModbusRTU 1:n Protocol via NFLR121 RS422/RS485 Communication Module connection)**

| GP Setup | | NFLR121 Port Setup | |
|-------------------------------------|------------------------|--------------------|----------------------------------|
| Baud Rate | 9600 bps ^{*4} | Baud Rate | 9600 bps ^{*1*3} |
| Data Length | 8 bit | Data Length | 8 bit ^{*1} |
| Stop Bit | 1 bit | Stop Bit | 1 bit ^{*1} |
| Parity Bit | None | Parity Bit | None ^{*1} |
| Data Flow Control | ER Control | Other Settings | Use default values ^{*1} |
| Communication Format (using 4-wire) | 4-wire | Wiring Format | 4-wire ^{*1} |
| Communication Format (using 2-wire) | 2-wire | | 2-wire ^{*1} |
| Station No. | 1 | Station No. | 1 ^{*2} |
| --- | | Communication Mode | RTU Mode |
| --- | | Communication Type | Slave |

**1 Set these parameters in the COM port setup using the Web browser.*

**2 Pass the settings to the task startup FB parameters.*

**3 Communication at 115.2 kbps is possible.*



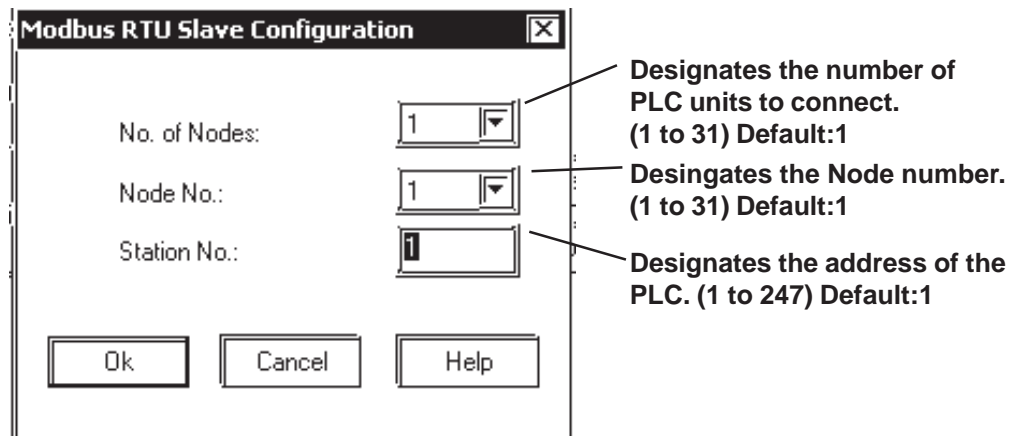
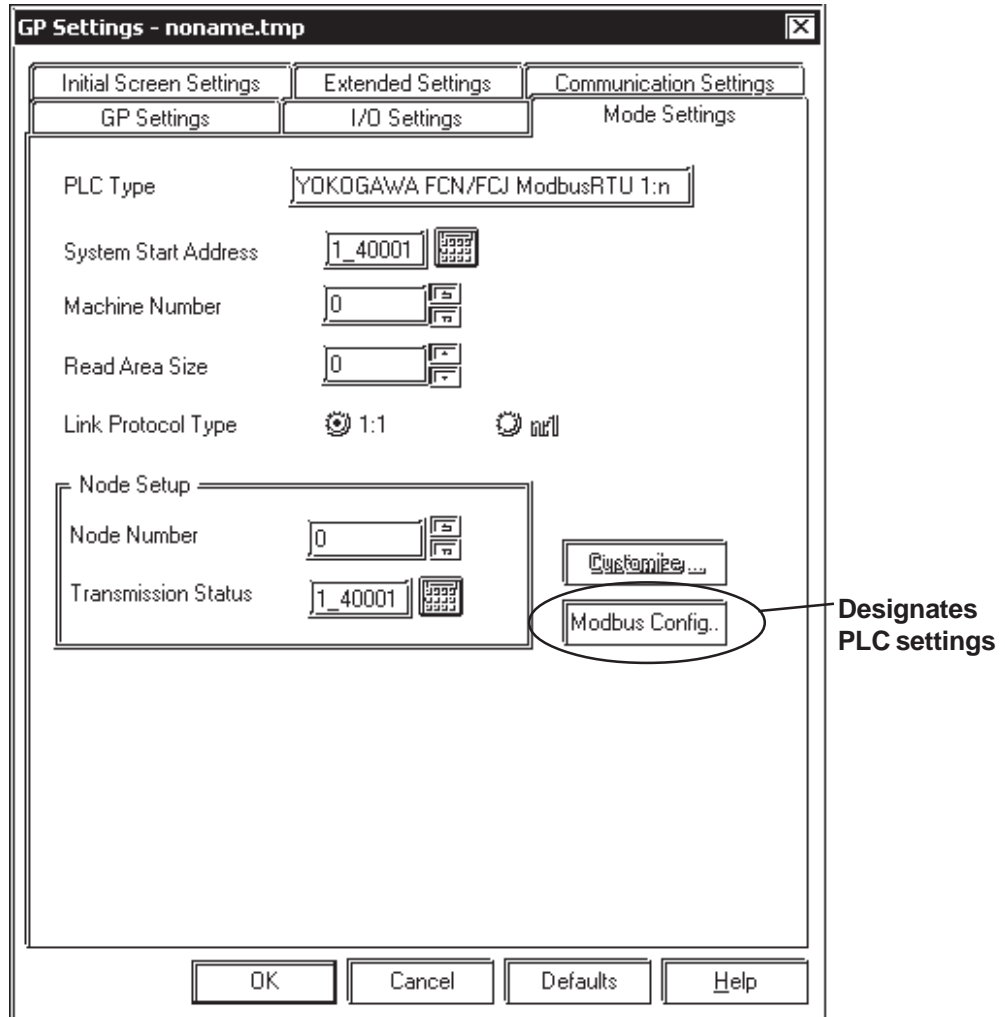
When communicating using a 2-wire 1:n connection with 2 or more PLC units, be sure to set the GP unit's Send Wait time of 20ms or more.

If communication is performed using the default value of 0ms, an Host Communication error (02:FE:) will occur from the PLC.**

■ Special Settings

Screen Creation Software Settings

The screen creation software settings are located in the [GP System] - [Mode Settings] area. The screens and items used for entering settings are as follows.



A

Yokogawa Electric

A.1

Maximum Number of Consecutive Device Address

The following lists the maximum number of consecutive addresses that can be read by each PLC. Refer to these tables to utilize *Block Transfer*.

**Note:**

When the device is setup using the methods below, the Data Communication Speed declines by the number of times the device is read.

- When consecutive addresses exceed the maximum data number range
- When an address is designated for *division*
- When device types are different

To speed up data communication, plan the tag layout in screen units, as consecutive devices. (Includes the Alarm and Trend screens.)

■ PLC Units

<FACTORY ACE Series>

| Device | Max. No. of Consecutive Address | Device | Max. No. of Consecutive Address |
|---------------------|---------------------------------|---------------------------------|---------------------------------|
| Input Relay X | 1 Words | Timer (current value) TP | 63 Words |
| Output Relay Y | | Timer (setup value) TS | |
| Internal Relay I | 63 Words | Counter (current value) CP | |
| Joint Relay E | | Counter (setup value) CS | |
| Timer (contact) T | 16 Words | Data Register D | |
| Counter (contact) C | | Common Register B ^{*1} | |
| Special Relay M | 63 Words | File Register B ^{*1} | |
| Link Relay L | | Special Register Z | |
| | | Link Register W | |

*1 Device B becomes the Common Register when the CPU is FA500, and becomes the File Register when the CPU is FA-M3.

<STARDOM Standalone Controller FCN/FCJ Series> (When using Yokogawa Electric FCN/FCJ ModbusRTU 1:n Protocol)

| Device | Max. No. of Consecutive Addresses |
|---------------------|-----------------------------------|
| Coil (0) | 125 Words |
| Input Relay (1) | |
| Retain Register (4) | |
| Input Register (3) | |

◆ **Ethernet Communication**

<FACTORY ACE Series/FA-M3>

| Device | Max.No.of Consecutive Addresses |
|--------------------------|---------------------------------|
| Input Relay | 1 Word |
| Output Relay | |
| Internal Relay | 64 words |
| Common Relay | |
| Special Relay | |
| Link Relay | |
| Timer (contact) | 16 words |
| Counter (contact) | |
| Timer (current v alue) | 64words |
| Counter (current v alue) | |
| Timer (setup v alue) | |
| Counter (setup v alue) | |
| Data Register | |
| File Register | |
| Common Register | |
| Special Register | |
| Link Register | |

■ **Controller**

<UT2000/UT3000/Green Series>

| Device | Max. No. of Consecutive Address |
|--------|---------------------------------|
| D | 63 Words |
| I | 63 Words |

<UT100>

| Device | Max. No. of Consecutive Address |
|------------|---------------------------------|
| D Register | 32 Words |

A.2 Device Codes and Address Codes

Device codes and address codes are used to specify indirect addresses for the E-tags or K-tags.

The word addresses of data to be displayed are coded and stored in the word address specified by the E-tags and K-tags. (Code storage is done either by the PLC, or with T-tag and K-tags)

■ PLCs

<FA500 (1:1 communication)*>

| | Device | Word Address | Device code (HEX) | Address code |
|-------------|-------------------------|--------------|-------------------|---|
| Bit Device | Input Relay | X00201~ | X | X |
| | Output Relay | Y00201~ | X | X |
| | Internal Relay | I0001~ | 9000 | Save as word address value minus 1 divided by 16. |
| | Joint Relay | E0001~ | B800 | Save as word address value minus 1 divided by 16. |
| | Special Relay | M001~ | B000 | Save as word address value minus 1 divided by 16. |
| | Link Relay | L0001~ | C 000 | Save as word address value minus 1 divided by 16. |
| Word Device | Timer (current v alue) | TP001~ | 6000 | Save as word address value minus 1. |
| | Timer (set v alue) | TS001~ | 6800 | Save as word address value minus 1. |
| | Counter (current value) | CP001~ | 7000 | Save as word address value minus 1. |
| | Counter (set value) | CS001~ | 7800 | Save as word address value minus 1. |
| | Data Register | D0001~ | 0000 | Save as word address value minus 1. |
| | Common Register | B0001~ | 2000 | Save as word address value minus 1. |
| | Special Register | Z001~ | 5000 | Save as word address value minus 1. |
| | Link Register | W0001~ | 5800 | Save as word address value minus 1. |
| LS area | LS0000~ | 4000 | Word Address | |

* Only CPU No. 1 is available.

<FA500 (1:n communication)*>

| | Device | Word Address | Device code (HEX) | Address code |
|-------------|-------------------------|--------------|-------------------|---|
| Bit Device | Input Relay | X00201~ | X | X |
| | Output Relay | Y00201~ | X | X |
| | Internal Relay | I0001~ | 9000 | Save as word address value minus 1 divided by 16. |
| | Joint Relay | E0001~ | B800 | Save as word address value minus 1 divided by 16. |
| | Special Relay | M001~ | B000 | Save as word address value minus 1 divided by 16. |
| | Link Relay | L0001~ | C000 | Save as word address value minus 1 divided by 16. |
| Word Device | Timer (current value) | TP001~ | 6000 | Save as word address value minus 1. |
| | Timer (set value) | TS001~ | 6800 | Save as word address value minus 1. |
| | Counter (current value) | CP001~ | 7000 | Save as word address value minus 1. |
| | Counter (set value) | CS001~ | 7800 | Save as word address value minus 1. |
| | Data Register | D0001~ | 0000 | Save as word address value minus 1. |
| | Common Register | B0001~ | 2000 | Save as word address value minus 1. |
| | Special Register | Z001~ | 5000 | Save as word address value minus 1. |
| | Link Register | W0001~ | 5800 | Save as word address value minus 1. |
| | LS area | LS0000~ | 4000 | Word Address |

* Only CPU No. 1 in station No.1 is available.

<STARDOM Standalone Controller FCN/FCJ Series> (When using Yokogawa Electric FCN/FCJ ModbusRTU 1:n Protocol)

| Device | Device Address | Device code | Address Code |
|--------|----------------|-------------|--------------------|
| 1_0 | 1_000001 - | 0xB000 | (Word Address)/ 16 |
| 2_0 | 2_000001 - | 0xB200 | |
| 3_0 | 3_000001 - | 0xB400 | |
| 4_0 | 4_000001 - | 0xB600 | |
| 5_0 | 5_000001 - | 0xB800 | |
| 6_0 | 6_000001 - | 0xBA00 | |
| 7_0 | 7_000001 - | 0xBC00 | |
| 8_0 | 8_000001 - | 0xBE00 | |
| 9_0 | 9_000001 - | 0xC000 | |
| 10_0 | 10_000001 - | 0xC200 | |
| 11_0 | 11_000001 - | 0xC400 | |
| 12_0 | 12_000001 - | 0xC600 | |
| 13_0 | 13_000001 - | 0xC800 | |
| 14_0 | 14_000001 - | 0xCA00 | |
| 15_0 | 15_000001 - | 0xCC00 | |
| 16_0 | 16_000001 - | 0xCE00 | |
| 17_0 | 17_000001 - | 0x8000 | |
| 18_0 | 18_000001 - | 0x8200 | |
| 19_0 | 19_000001 - | 0x8400 | |
| 20_0 | 20_000001 - | 0x8600 | |
| 21_0 | 21_000001 - | 0x8800 | |
| 22_0 | 22_000001 - | 0x8A00 | |
| 23_0 | 23_000001 - | 0x8C00 | |
| 24_0 | 24_000001 - | 0x8E00 | |
| 25_0 | 25_000001 - | 0xD000 | |
| 26_0 | 26_000001 - | 0xF200 | |
| 27_0 | 27_000001 - | 0xF400 | |
| 28_0 | 28_000001 - | 0xF600 | |
| 29_0 | 29_000001 - | 0xF800 | |
| 30_0 | 30_000001 - | 0xFA00 | |
| 31_0 | 31_000001 - | 0xFC00 | |
| 1_1 | 1_100001 - | 0x9000 | (Word Address)/ 16 |
| 2_1 | 2_100001 - | 0x9200 | |
| 3_1 | 3_100001 - | 0x9400 | |
| 4_1 | 4_100001 - | 0x9600 | |
| 5_1 | 5_100001 - | 0x9800 | |
| 6_1 | 6_100001 - | 0x9A00 | |
| 7_1 | 7_100001 - | 0x9C00 | |
| 8_1 | 8_100001 - | 0x9E00 | |
| 9_1 | 9_100001 - | 0xA000 | |
| 10_1 | 10_100001 - | 0xA200 | |

| | | | | |
|------|-------------|--------|--|------------------|
| 11_1 | 11_100001 - | 0xA400 | | |
| 12_1 | 12_100001 - | 0xA600 | | |
| 13_1 | 13_100001 - | 0xA800 | | |
| 14_1 | 14_100001 - | 0xAA00 | | |
| 15_1 | 15_100001 - | 0xAC00 | | |
| 16_1 | 16_100001 - | 0xAE00 | | |
| 17_1 | 17_100001 - | 0x6000 | | |
| 18_1 | 18_100001 - | 0x6200 | | |
| 19_1 | 19_100001 - | 0x6400 | | |
| 20_1 | 20_100001 - | 0x6600 | | |
| 21_1 | 21_100001 - | 0x6800 | | |
| 22_1 | 22_100001 - | 0x6A00 | | |
| 23_1 | 23_100001 - | 0x6C00 | | |
| 24_1 | 24_100001 - | 0x6E00 | | |
| 25_1 | 25_100001 - | 0x7000 | | |
| 26_1 | 26_100001 - | 0x7200 | | |
| 27_1 | 27_100001 - | 0x7400 | | |
| 28_1 | 28_100001 - | 0x7600 | | |
| 29_1 | 29_100001 - | 0x7800 | | |
| 30_1 | 30_100001 - | 0x7A00 | | |
| 31_1 | 31_100001 - | 0x7C00 | | |
| 1_4 | 1_400001 - | 0xD200 | | Word Address - 1 |
| 2_4 | 2_400001 - | 0xD400 | | |
| 3_4 | 3_400001 - | 0xD600 | | |
| 4_4 | 4_400001 - | 0xD800 | | |
| 5_4 | 5_400001 - | 0xDA00 | | |
| 6_4 | 6_400001 - | 0xDC00 | | |
| 7_4 | 7_400001 - | 0xDE00 | | |
| 8_4 | 8_400001 - | 0xE000 | | |
| 9_4 | 9_400001 - | 0xE200 | | |
| 10_4 | 10_400001 - | 0xE400 | | |
| 11_4 | 11_400001 - | 0xE600 | | |
| 12_4 | 12_400001 - | 0xE800 | | |
| 13_4 | 13_400001 - | 0xEA00 | | |
| 14_4 | 14_400001 - | 0xEC00 | | |
| 15_4 | 15_400001 - | 0xEE00 | | |
| 16_4 | 16_400001 - | 0xF000 | | |
| 17_4 | 17_400001 - | 0x4200 | | |
| 18_4 | 18_400001 - | 0x4400 | | |
| 19_4 | 19_400001 - | 0x4600 | | |
| 20_4 | 20_400001 - | 0x4800 | | |
| 21_4 | 21_400001 - | 0x4A00 | | |
| 22_4 | 22_400001 - | 0x4C00 | | |

| | | | |
|---------|-------------|--------|--------------|
| 23_4 | 23_400001 - | 0x4E00 | |
| 24_4 | 24_400001 - | 0x5000 | |
| 25_4 | 25_400001 - | 0x5200 | |
| 26_4 | 26_400001 - | 0x5400 | |
| 27_4 | 27_400001 - | 0x5600 | |
| 28_4 | 28_400001 - | 0x5800 | |
| 29_4 | 29_400001 - | 0x5A00 | |
| 30_4 | 30_400001 - | 0x5C00 | |
| 31_4 | 31_400001 - | 0x5E00 | |
| 1_3 | 1_300001 - | 0x2000 | |
| 2_3 | 2_300001 - | 0x2200 | |
| 3_3 | 3_300001 - | 0x2400 | |
| 4_3 | 4_300001 - | 0x2600 | |
| 5_3 | 5_300001 - | 0x2800 | |
| 6_3 | 6_300001 - | 0x2A00 | |
| 7_3 | 7_300001 - | 0x2C00 | |
| 8_3 | 8_300001 - | 0x2E00 | |
| 9_3 | 9_300001 - | 0x3000 | |
| 10_3 | 10_300001 - | 0x3200 | |
| 11_3 | 11_300001 - | 0x3400 | |
| 12_3 | 12_300001 - | 0x3600 | |
| 13_3 | 13_300001 - | 0x3800 | |
| 14_3 | 14_300001 - | 0x3A00 | |
| 15_3 | 15_300001 - | 0x3C00 | |
| 16_3 | 16_300001 - | 0x3E00 | |
| 17_3 | 17_300001 - | 0x0200 | |
| 18_3 | 18_300001 - | 0x0400 | |
| 19_3 | 19_300001 - | 0x0600 | |
| 20_3 | 20_300001 - | 0x0800 | |
| 21_3 | 21_300001 - | 0x0A00 | |
| 22_3 | 22_300001 - | 0x0C00 | |
| 23_3 | 23_300001 - | 0x0E00 | |
| 24_3 | 24_300001 - | 0x1000 | |
| 25_3 | 25_300001 - | 0x1200 | |
| 26_3 | 26_300001 - | 0x1400 | |
| 27_3 | 27_300001 - | 0x1600 | |
| 28_3 | 28_300001 - | 0x1800 | |
| 29_3 | 29_300001 - | 0x1A00 | |
| 30_3 | 30_300001 - | 0x1C00 | |
| 31_3 | 31_300001 - | 0x1E00 | |
| LS Area | LS0000 - | 0x4000 | Word Address |

<FA-M3 (1:1 communication)*>

| | Device | Word Address | Device code (HEX) | Address code | |
|-------------|-------------------------|--------------|-------------------|---|--|
| Bit Device | Input Relay | X00201~ | X | X | |
| | Output Relay | Y00201~ | X | X | |
| | Internal Relay | I0001~ | 9000 | Save as word address value minus 1 divided by 16. | |
| | Joint Relay | E0001~ | B800 | Save as word address value minus 1 divided by 16. | |
| | Special Relay | M0001~ | B000 | Save as word address value minus 1 divided by 16. | |
| | Link Relay | L00001~ | C000 | Save as word address value minus 1 divided by 16. | |
| Word Device | Timer (current value) | TP0001~ | 6000 | Save as word address value minus 1. | |
| | Timer (set value) | TS0001~ | 6800 | Save as word address value minus 1. | |
| | Counter (current value) | CP0001~ | 7000 | Save as word address value minus 1. | |
| | Counter (set value) | CS0001~ | 7800 | Save as word address value minus 1. | |
| | Data Register | D0001~ | 0000 | Save as word address value minus 1. | |
| | File Register | | B00001~ | 2000 | Save as word address value minus 1. |
| | | | B65537~ | 2800 | Save as word address value minus 65537. |
| | | | B131073~ | 1000 | Save as word address value minus 131073. |
| | | | B196609~ | 1800 | Save as word address value minus 196609. |
| | Joint Register | R0001~ | 0800 | Save as word address value minus 1. | |
| | Special Register | Z001~ | 5000 | Save as word address value minus 1. | |
| | Link Register | W00001~ | 5800 | Save as word address value minus 1. | |
| LS area | LS0000~ | 4000 | Word Address | | |

* Only CPU No. 1 is available.

<FA-M3 (1:n communication)*>

| | Device | Word Address | Device code (HEX) | Address code |
|-------------|-------------------------|--------------|-------------------|---|
| Bit Device | Input Relay | X00201~ | X | X |
| | Output Relay | Y00201~ | X | X |
| | Internal Relay | I00001~ | 9000 | Save as word address value minus 1 divided by 16. |
| | Joint Relay | E0001~ | B800 | Save as word address value minus 1 divided by 16. |
| | Special Relay | M0001~ | B000 | Save as word address value minus 1 divided by 16. |
| | Link Relay | L00001~ | C000 | Save as word address value minus 1 divided by 16. |
| Word Device | Timer (current value) | TP0001~ | 6000 | Save as word address value minus 1. |
| | Timer (set value) | TS0001~ | 6800 | Save as word address value minus 1. |
| | Counter (current value) | CP0001~ | 7000 | Save as word address value minus 1. |
| | Counter (set value) | CS0001~ | 7800 | Save as word address value minus 1. |
| | Data Register | D0001~ | 0000 | Save as word address value minus 1. |
| | File Register | B0001~ | 2000 | Save as word address value minus 1. |
| | Joint Register | R0001~ | 0800 | Save as word address value minus 1. |
| | Special Register | Z001~ | 5000 | Save as word address value minus 1. |
| | Link Register | W0001~ | 5800 | Save as word address value minus 1. |
| | LS area | LS0000~ | 4000 | Word Address |

* Only CPU No. 1 in station No. 1 is available.

<FA-M3 (Ethernet communication)*>

| | Device | Word Address | Device code (HEX) | Address code | |
|-------------|-------------------------|--------------|-------------------|---|--|
| Bit Device | Input Relay | X00201~ | X | X | |
| | Output Relay | Y00201~ | X | X | |
| | Internal Relay | I00001~ | 9000 | Save as word address value minus 1 divided by 16. | |
| | Joint Relay | E0001~ | B800 | Save as word address value minus 1 divided by 16. | |
| | Special Relay | M0001~ | B000 | Save as word address value minus 1 divided by 16. | |
| | Link Relay | L00001~ | C000 | Save as word address value minus 1 divided by 16. | |
| Word Device | Timer (current value) | TP0001~ | 6000 | Save as word address value minus 1. | |
| | Timer (set value) | TS0001~ | 6800 | Save as word address value minus 1. | |
| | Counter (current value) | CP0001~ | 7000 | Save as word address value minus 1. | |
| | Counter (set value) | CS0001~ | 7800 | Save as word address value minus 1. | |
| | Data Register | D0001~ | 0000 | Save as word address value minus 1. | |
| | File Register | | B0001~ | 2000 | Save as word address value minus 1. |
| | | | B65537~ | 2800 | Save as word address value minus 65537. |
| | | | B131073~ | 1000 | Save as word address value minus 131073. |
| | | | B196609~ | 1800 | Save as word address value minus 196609. |
| | Joint Register | R0001~ | 0800 | Save as word address value minus 1. | |
| | Special Register | Z001~ | 5000 | Save as word address value minus 1. | |
| | Link Register | W0001~ | 5800 | Save as word address value minus 1. | |
| | LS area | LS0000~ | 4000 | Word Address | |

* Only CPU No. 1 is available

◆ DeviceNet Communication

| | Device | Word Address | Device code (HEX) | Address code |
|-------------|---------|--------------|-------------------|--------------|
| Word Device | LS area | LS0000 ~ | 4000 | Word Address |

■ Controllers

<UT2000/UT3000/Green Series>

| | Device | Word Address | Device Code (HEX) | Address Code |
|-------------|---------|--------------|-------------------|---|
| Word Device | D | 0001 ~ | 0000 | Word Address -1 |
| Bit Device | I | 0001 ~ | 9000 | Save as word address -1 value divided by 16 |
| Word Device | LS Area | LS6000 ~ | 4000 | Word Address |

<UT100>

| | Device | Word Address | Device Code (HEX) | Address Code |
|-------------|------------|--------------|-------------------|-----------------|
| Word Device | D Register | d0001 ~ | 3000 | Word Address -1 |
| | LS Area | LS0000 ~ | 4000 | Word Address |

A.3

Address Conversion Table

The address conversion table is shown below.

| | | Before Conversion | | | | |
|---------------------|----|-------------------|---|---|---|----|
| | | 0 | 1 | 3 | 4 | LS |
| After Conversion | 0 | ○ | ○ | ○ | ○ | ○ |
| | 1 | ○ | ○ | ○ | ○ | ○ |
| | 3 | ○ | ○ | ○ | ○ | ○ |
| | 4 | ○ | ○ | ○ | ○ | ○ |
| | LS | ○ | ○ | ○ | ○ | ○ |

○ : When the conversion mode is set to "Word", both word and bit devices will be converted. If the conversion mode is set to "Bit", only bit devices will be converted.