


## Mitsubishi <7> Mitsubishi Electric Corporation QnA Series + Link Unit (Large) Connection





### System Structure



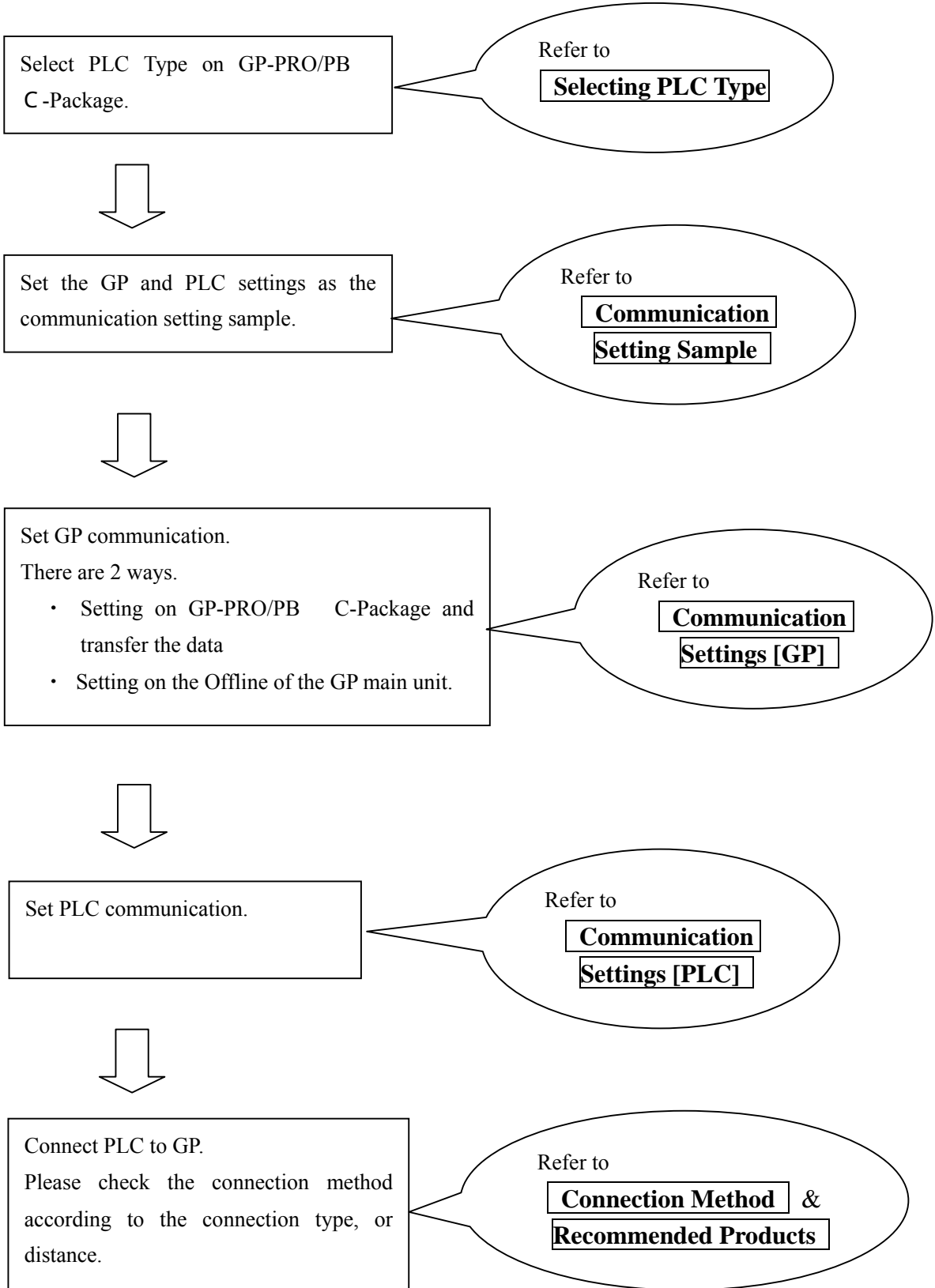
### GP

Machine 	Model	Remark
GP	GP70 Series GP77/77R Series GP2000 Series	Excepting for handy types.
GLC	GLC2000 Series	

### PLC

CPU 	Computer Link Unit Serial Communication Unit 	Communication Method	Connection Cable 	GP 
Q2A, Q2A-S1, Q4A	AJ71QC24	RS-232C	<b>Connection Method</b> [1]	
	AJ71UC24	RS-422	<b>Connection Method</b> [2]	
	AJ71QC24N-R4	RS-422 (CN-1) RS-422 (CN-2)	<b>Connection Method</b> [3]	
Q4AR	AJ71QC24N	RS-232C	<b>Connection Method</b> [1]	
		RS-422	<b>Connection Method</b> [2]	

## Procedure to Connect PLC



## Selecting PLC Type

Start up GP-PRO /PBIII.

Select the following PLC Type when creating the project file

[Connecting via Serial Communication Unit]

(AJ71QC24, AJ71QC24N, AJ71QC24-R4)



[Connecting via Computer Link Unit]

(AJ71UC24)



## Communication Setting Sample

GP Setup		Serial Communication Unit Settings	
Baud Rate	19200 bps *1	Baud Rate	19200 bps
Data Length	7 bits	Data Bit	7 bits
Stop Bit	2 bits	Stop Bit	2 bits
Parity Bit	Even	Parity Check Parity setting even/odd	Yes Even
Data Flow Control	ER Control	---	
Communication Format (RS-232C)	RS-232C	Mode Setup (RS-232C)	4 (Format 4 Protocol Mode)
Communication Format (RS-422)	4-wire type	Mode Setup (RS-422)	4 (Format 4 Protocol Mode)
---		Sum Check	Yes
Unit No.	0	Station Number	0

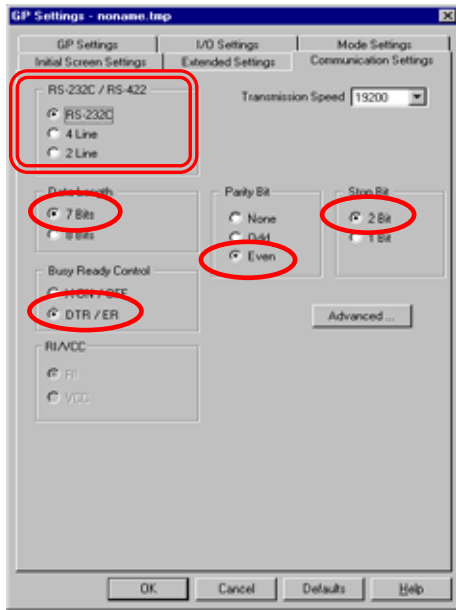
\*1 AJ71QC24-R4, AJ71QC24N can use a baud rate of 115200bps.

## Communication Settings [GP]

1 [GP-PRO/PB C-Package Setting]

Select [GP Setup] on Project Manager.

### 1) Communication Settings



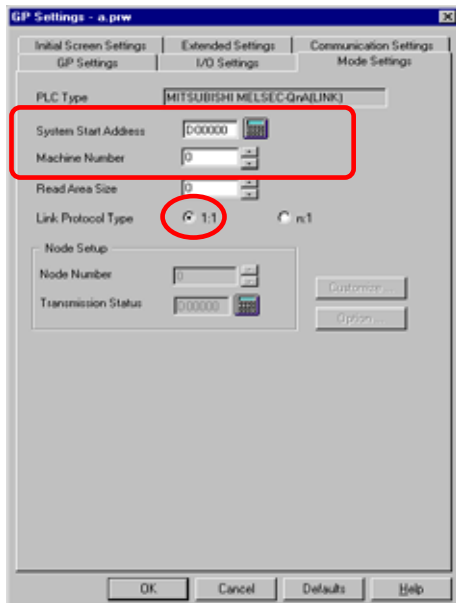
### 1) Communication Settings

Transmission Speed : 19200bps \*1  
 Data Length : 7 Bits  
 Stop Bit: 2 Bits  
 Parity Bit: Even  
 Busy Ready Control : DTR / ER  
 RS-232C/ RS-422  
 RS-232C Connection: RS-232C  
 RS-422 Connection: 4 Line

\*1 AJ71QC24-R4, AJ71QC24N can use a baud rate of 115200bps.

\* Select one in  depending on the communication method.

### 2) Mode Settings

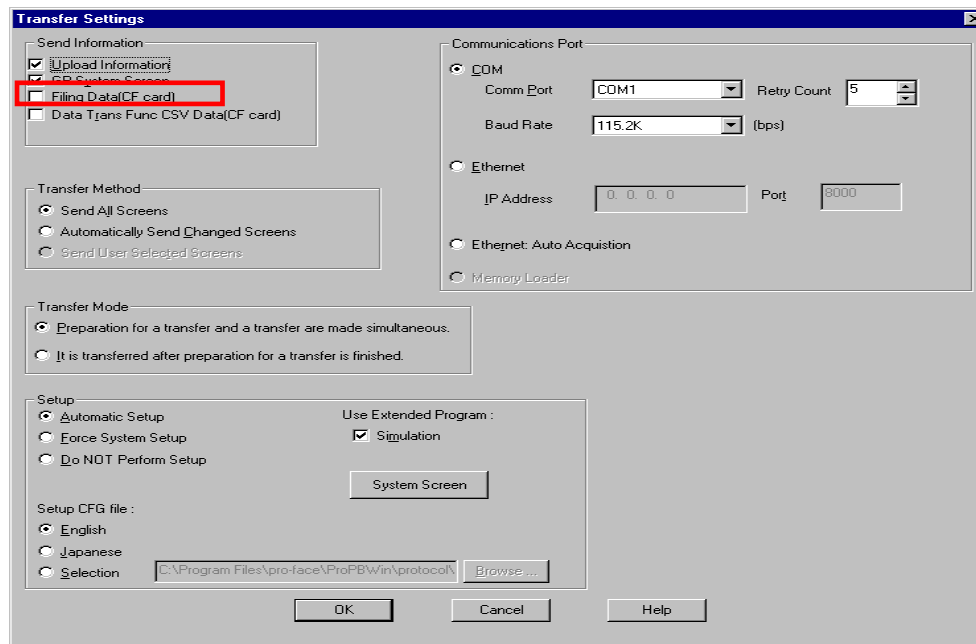


### 2) Mode Settings

System Start Address: Arbitrary Address  
 Machine No.: 0  
 Link Protocol Type: 1:1

Select [Transfer] --> [Setup] --> [Transfer Settings].

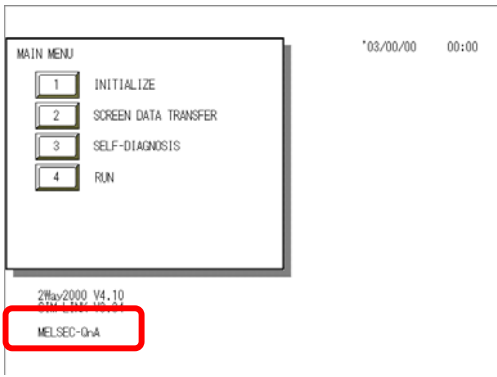
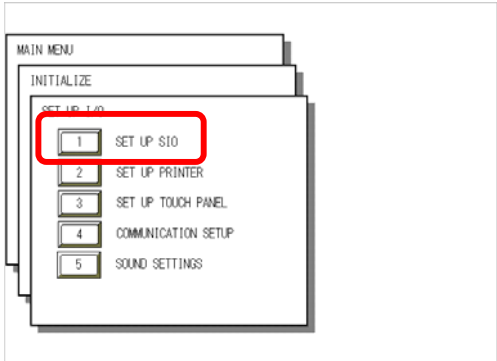
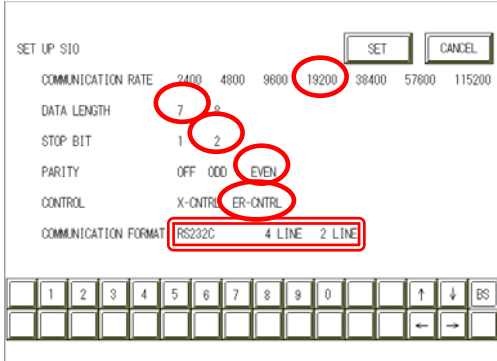
### 3) Transfer Settings

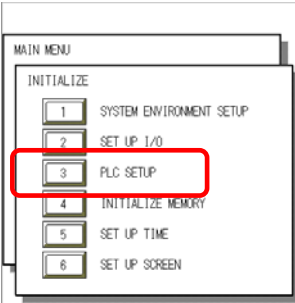

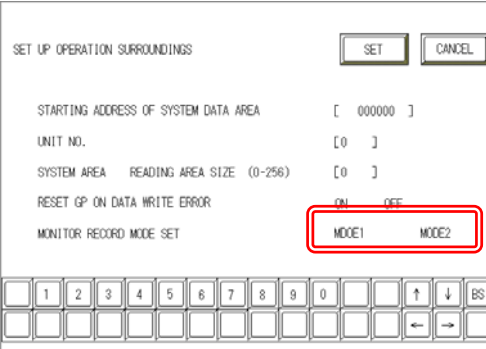


3) Transfer Settings GP System Settings: Checked

Transfer to GP after settings completed.

## 2 [GP Settings]

<p><u>1) Checking GP Type</u></p> 	<p><u>1) Checking GP Type</u></p> <p>[Connecting via Serial Communication Unit] If you have selected Mitsubishi MELSEC-QnA (LINK), the following will be shown. “MELSEC-QnA”</p> <p>[Connecting via Computer Link Unit] If you have selected Mitsubishi MELSEC-AnA (LINK), the following will be shown. “MELSEC-AnA”</p>
<p><u>2) Communication Settings</u></p> 	<p><u>2) Communication Settings</u></p> <p>[MAIN MENU] ↓ [INITIALIZE] ↓ [SET UP I/O] ↓ [SET UP SIO]</p>
	<p>Communication Rate: 19200bps *1 Data Length: 7 Bits Stop Bit: 2 Bits Parity: Even Control: ER Cntrl Communication Format RS-232C Connection :RS-232C RS-422 Connection :4 Line</p> <p>*1 AJ71QC24-R4, AJ71QC24N can use a baud rate of 115200bps.</p> <p>* Select one in <input type="text"/> depending on the communication method.</p>

<p>3) Setting up Operation Surroundings</p> 	<p>3) Setting up Operation Surroundings</p> <p>[MAIN MENU] ↓ [INITIALIZE] ↓ [PLC SETUP] ↓ [PLC SETUP]</p>
	<p>SET UP OPERATION SURROUNDINGS MENU: 1:1</p>
	<p>Starting Address of System Data Area: Arbitrary Address Unit No.: 0</p> <p>* Select one in <input type="text"/>.</p>

**NOTE**

**Monitor Record Mode Set**


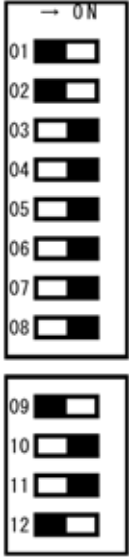
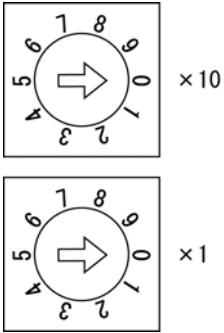
- **Mode 1:** This mode is valid when the number of the devices of the tags set on one screen is 64 or more. The communication speed is improved by this mode. Select this mode when using 64 or more devices.
- **Mode 2:** This mode is valid when the number of the devices of the tags set on one screen is less than. The communication speed is improved by this mode. Select this mode when using less than 64 devices.



## Communication Settings [PLC]


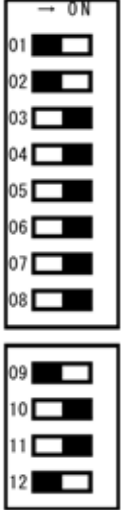
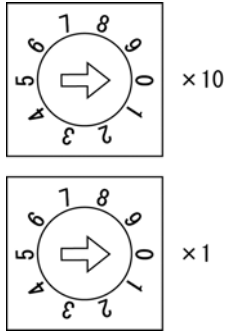
### 1. RS-232C Connection

#### 1-1 [Connecting via Serial Communication Unit AJ71QC24 / AJ71QC24N]


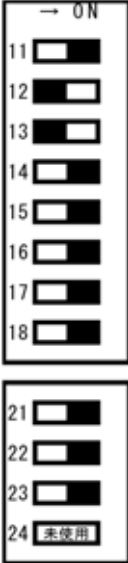
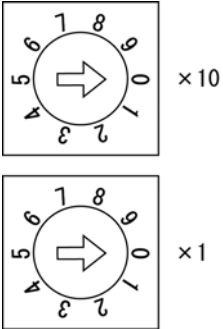
<p>1) Mode Setup</p> <p>MODE</p> 	<p>1) Mode Setup</p> <p>4 (Format 4 Protocol)</p>
<p>2) Communication Settings</p> <p><b>Set switches to the black.</b></p> 	<p>2) Communication Settings</p> <p>Baud Rate :19200bps</p> <p>Data Bit :7 Bits</p> <p>Stop Bit :2 Bits</p> <p>Parity Check :Yes</p> <p>Parity Setting Even/Odd :Even</p> <p>Write Possible in RUN Mode: Possible</p> <p>Sum Check :Yes</p>
<p>3) Node Settings</p> <p>STATION NO</p> 	<p>3) Node Settings</p> <p>Station Number: 0</p>

## 2. RS-422 Connection

### 2-1 [Connecting via Serial Communication Unit AJ71QC24 / AJ71QC24N-R4 / AJ71QC24N]

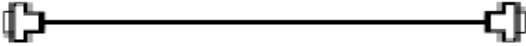
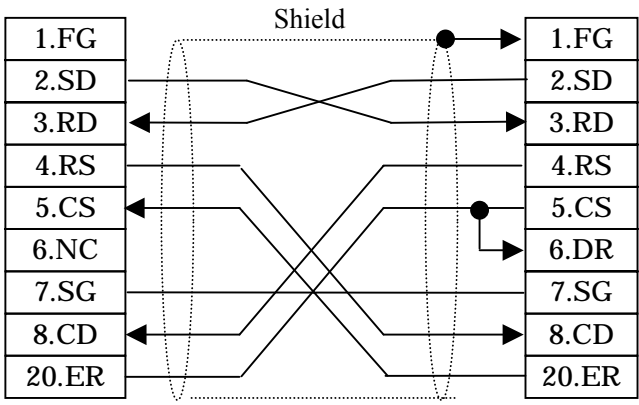
<p>1) <u>Mode Setup</u></p> <p>MODE</p> 	<p>1) <u>Mode Setup</u></p> <p>4 (Format 4 Protocol)</p>
<p>2) <u>Communication Settings</u></p> <p><b><u>Set switches to the black.</u></b></p> 	<p>2) <u>Communication Settings</u></p> <p>Baud Rate :19200bps          Data Bit :7 Bits          Stop Bit :2 Bits          Parity Check :Yes          Parity Setting Even/Odd :Even          Write Possible in RUN Mode: Possible          Sum Check :Yes</p>
<p>3) <u>Node Settings</u></p> <p>STATION NO</p> 	<p>3) <u>Node Settings</u></p> <p>Station Number: 0</p>

2-2 [Connecting via Computer Link Unit AJ71UC24]

<p>1) Mode Setup</p> <p>MODE</p> 	<p>1) Mode Setup</p> <p>8 (Format 4 Protocol)</p>
<p>2) Communication Settings</p> <p><b>Set switches to the black.</b></p> 	<p>2) Communication Settings</p> <p>Baud Rate :19200bps</p> <p>Data Bit :7 Bits</p> <p>Stop Bit :2 Bits</p> <p>Parity Check :Yes</p> <p>Parity Setting Even/Odd :Even</p> <p>Write Possible in RUN Mode: Possible</p> <p>Sum Check :Yes</p>
<p>3) Node Settings</p> <p>STATION NO</p> 	<p>3) Node Settings</p> <p>Station Number: 0</p>

## Connection Method

### 1. RS-232C Connection

Type	Connection Method	Distance
Using GP410-IS00-O		5m
Creating Cable	<p>To GP (25p Male)                      To PLC (25p Male)</p> 	Within 15m



**\* If a communication cable is used, it must be connected to the SG.**



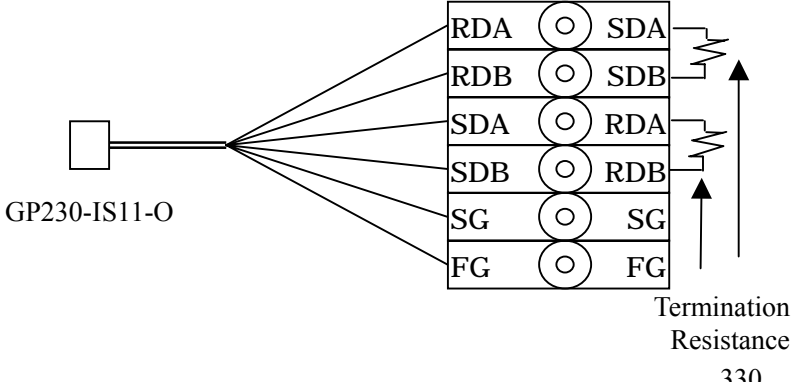
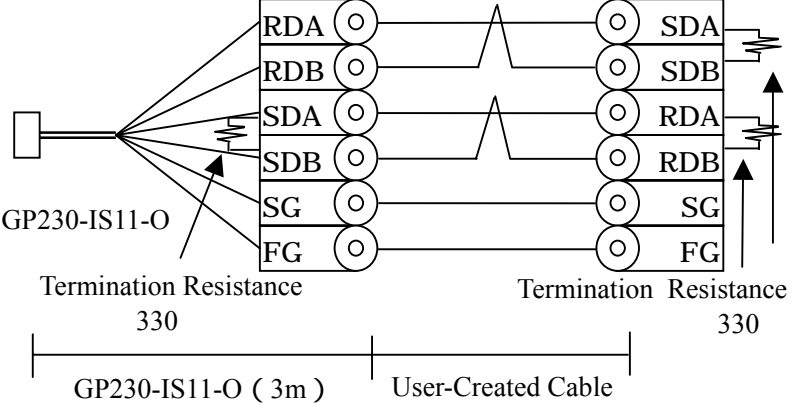
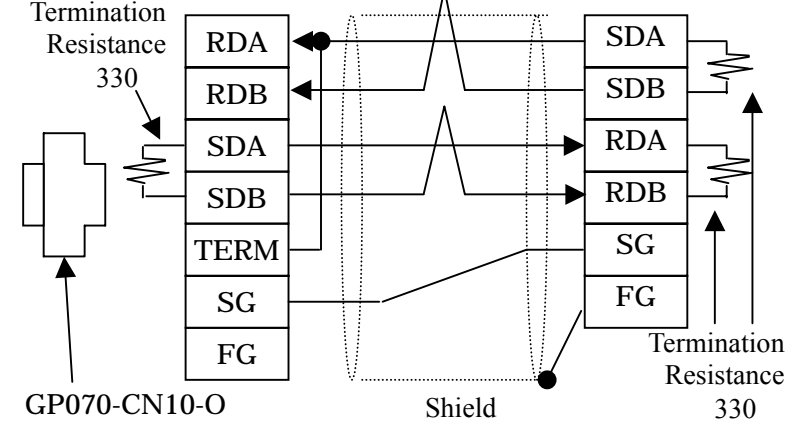
The optional cable, GP410-IS00-O is 5m long. If you need a longer cable or shorter, please use a User-Created cable to connect.

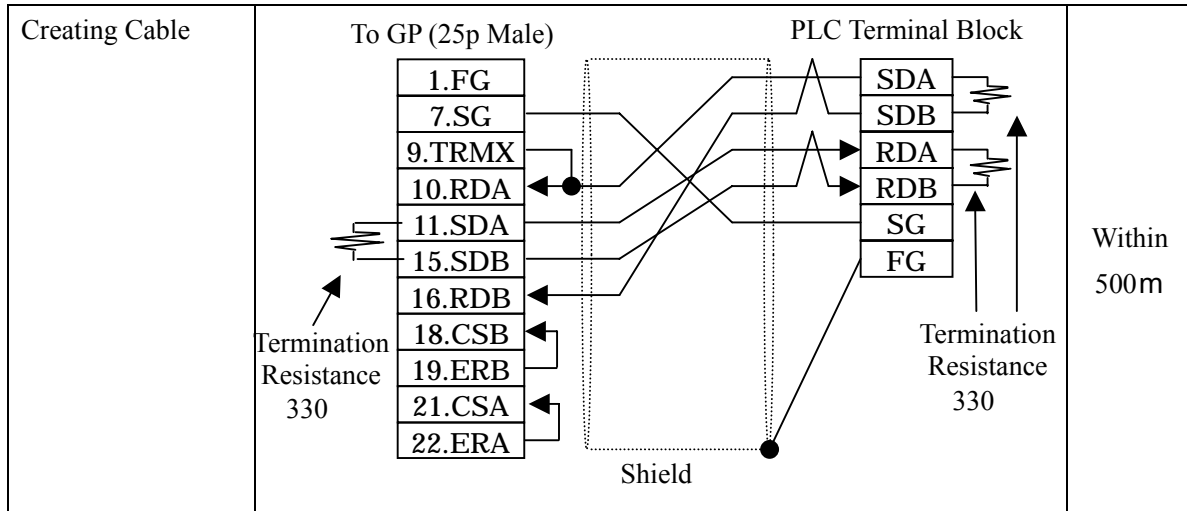
## Recommended Products

Connector/Cover for GP	D-sub 25 pin Plug	XM2A-2501 <OMRON Co.>
	Cover for D-sub 25 pin	XM2S-2511 <OMRON Co.>
	Jack Screw	XM2Z-0071 <OMRON Co.>
Cable	CO-MA-VV-SB5P × 28AWG <Hitachi Cable Ltd.>	
Setscrew	Metric Coarse Screw Tread : M2.6 × 0.45	

## 2. RS-422 Connection

[Connecting via AJ71UC24, AJ71QC24, AJ71QC24N, AJ71QC24-R4 (CN-1)]

Type	Connection Method	Distance
Using GP230-IS11-O	<p style="text-align: center;">To GP (25p Male)                      Cable with 6 wires                      PLC Terminal Block with 6</p>  <p style="text-align: right;">Termination Resistance 330</p>	5m
Extending GP230-IS11-O	<p style="text-align: center;">Cable with 6 wires                      PLC Terminal Block with 6 contacts</p>  <p style="text-align: center;">Termination Resistance 330                      Termination Resistance 330</p> <p style="text-align: center;">GP230-IS11-O ( 3m )                      User-Created Cable</p>	5 - 500 m
Using GP070-CN10-O	<p style="text-align: center;">Conversion Adapter                      PLC Terminal Block</p>  <p style="text-align: center;">Termination Resistance 330                      Termination Resistance 330</p> <p style="text-align: center;">GP070-CN10-O                      Shield</p>	Within 500m



\* If a communication cable is used, it must be connected to the SG.

\* Termination Resistance

PLC / between SDA and SDB, between RDA and RDB : 330

(with wattage specified on PLC)

GP Unit / as required (Refer to Cable Diagrams) : 330

(with wattage specified on PLC)

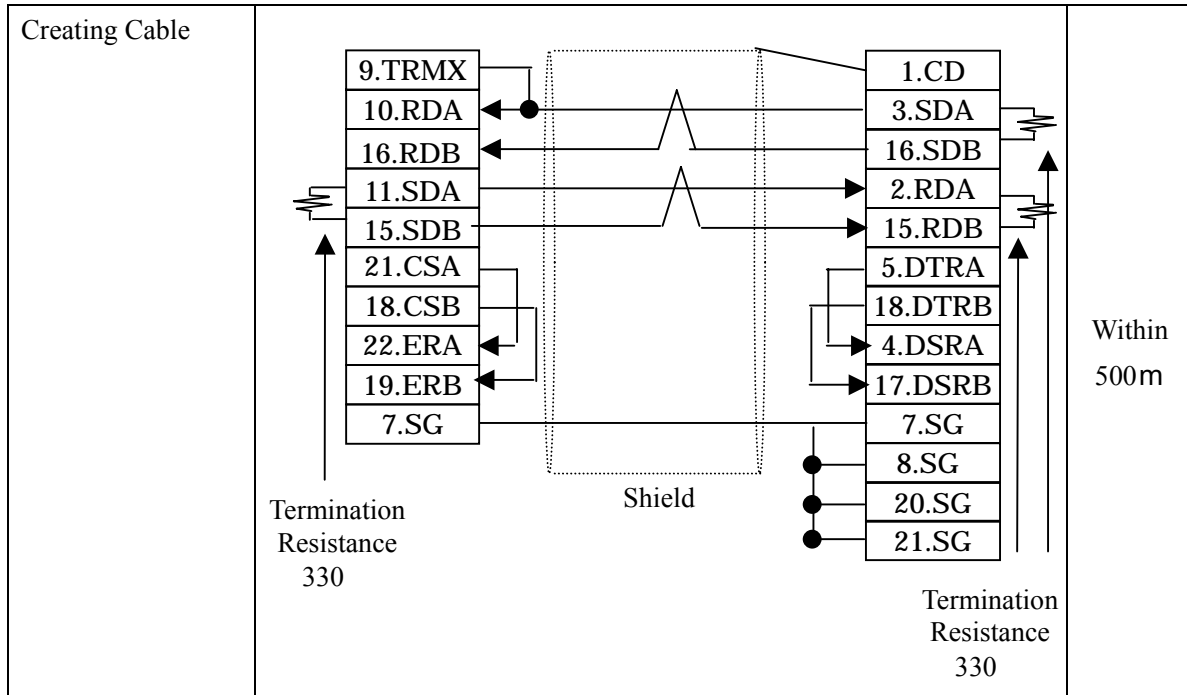
### Recommended Products

Connector/Cover for GP	D-sub 25 pin Plug	XM2A-2501 <OMRON Co.>
	Cover for D-sub 25 pin	XM2S-2511 <OMRON Co.>
	Jack Screw	XM2Z-0071 <OMRON Co.>
Cable	SPEV(SB)-MPC-0.2*3P <Mitsubishi Cable Ind.>	
Setscrew	Metric Coarse Screw Tread : M2.6 × 0.45	

### 3. RS-422 Connection

[Connecting via AJ71QC24-R4 (CN-2)]

Type	Connection Method	Distance
Using GP230-IS11-O	<p>To GP (25p Male)</p> <p>GP230-IS11-O</p> <p>Termination Resistance 330</p> <p>Shield</p> <p>Termination Resistance 330</p>	5m
Using GP070-CN10-O	<p>Termination Resistance 330</p> <p>Shield</p> <p>Termination Resistance 330</p>	Within 500m



\* If a communication cable is used, it must be connected to the SG.

\* Termination Resistance

PLC / between SDA and SDB, between RDA and RDB : 330  
(with wattage specified on PLC)

GP Unit / as required (Refer to Cable Diagrams) : 330  
(with wattage specified on PLC)

### Recommended Products

Connector/Cover for GP	D-sub 25 pin Plug	XM2A-2501 <OMRON Co.>
	Cover for D-sub 25 pin	XM2S-2511 <OMRON Co.>
	Jack Screw	XM2Z-0071 <OMRON Co.>
Cable	SPEV(SB)-MPC-0.2*3P <Mitsubishi Cable Ind.>	
Setscrew	Metric Coarse Screw Tread : M2.6 × 0.45	