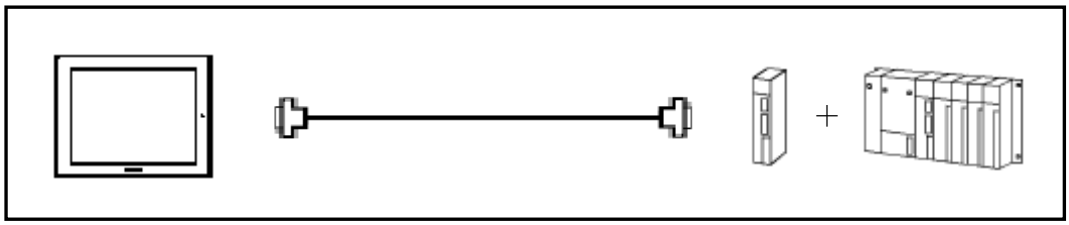
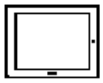
OMRON Corporation PLC
SYSMAC C Series (1 to n) Connection

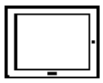
System Structure



GP

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

PLC

CPU 	Host Link Interface 	Communication Method	Connection Cable 	GP 
CQM1H-CPU51 CQM1H-CPU61	CQM1H-SCB41	RS-422 (1 to n Communication)	Link Adapter B500-AL001 by OMRON **Connection Method [1]**	
		RS-422 (1 to n Communication)	**Connection Method [2]**	

Procedure to Connect PLC

Select PLC Type on GP-PRO/PB Ⅲ C-Package.

Refer to **Selecting PLC Type**

Set the GP and PLC settings as the communication setting sample.

Refer to **Communication Setting Sample**

Set GP communication.
There are 2 ways.

- Setting on GP-PRO/PBⅢ C-Package and transfer the data
- Setting on the Offline of the GP main unit.

Refer to **Communication Settings [GP]**

Set PLC communication.

Refer to **Communication Settings [PLC]**

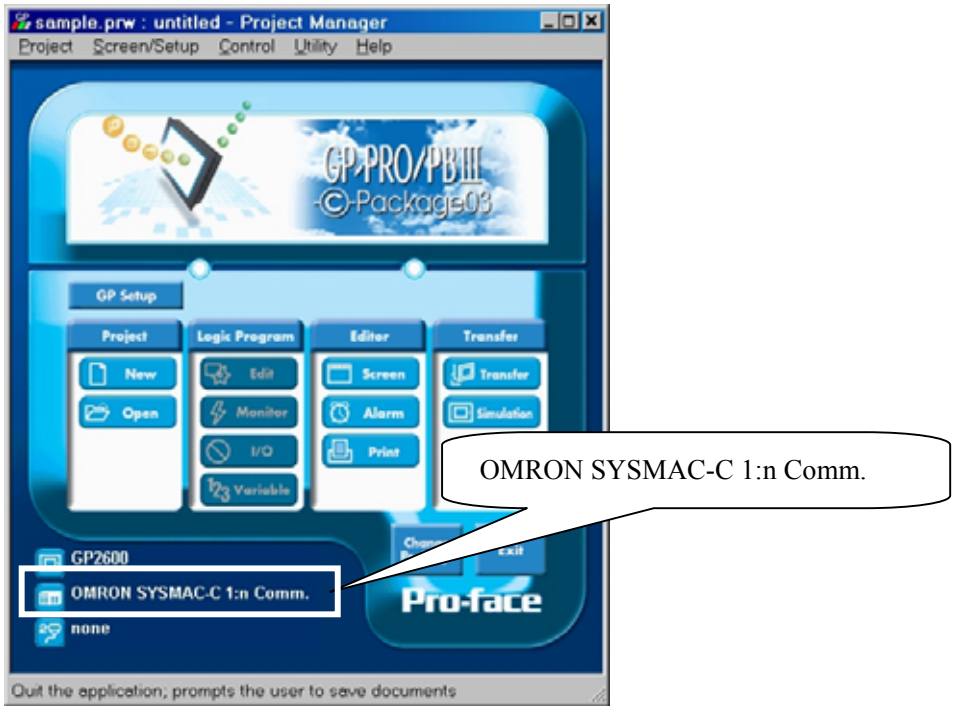
Connect PLC to GP.
Please check the connection method according to the connection type, or distance.

Refer to **Connection Method** & **Recommended Products**

Selecting PLC Type

Start up GP-PRO /PBIII.

Select the following PLC Type when creating the project file.



Communication Setting Sample

■ SYSMAC-C Series (CQM1H-CPU51/CQM1H-CPU61) <1 to n Communication>

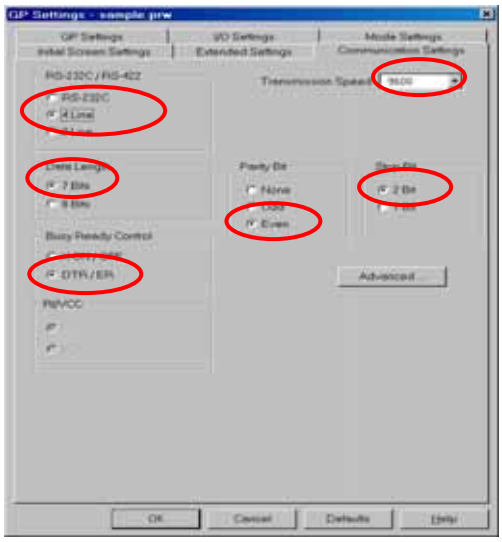
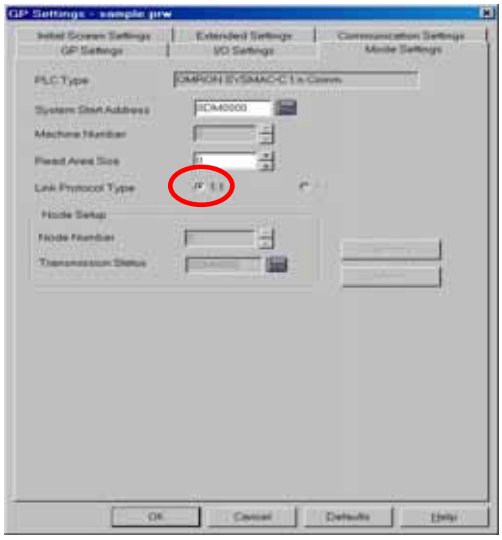
GP/GLC Setup		PLC Setup	
Baudrate	9600 bps	Baud Rate	9600 bps
Data Length	7 bits	Data Length	7 bits
Stop Bit	2 bits	Stop Bit	2 bits
Parity Bit	Even	Parity Bit	Even
Data Flow Control	ER Control	-	-
Communication Format	4 Line	2 wire/4 wire [WIRE]	4 Wire
Unit No.	0	Station Number *1	0
-		Communication Conditions Format Settings	0
-		Serial Communication Mode Settings	Host Link
-		Termination Resistance Switch [TERM]	Terminal Station: ON Intermediate

*1 Although No.00 to No.31 can be used for PLC station Number, the maximum number of PLCs that can communicate with the GP on the 1 to n communication basis is eight. Therefore, set up PLC station Numbers within the range of 00 to 07.

Communication Settings [GP]

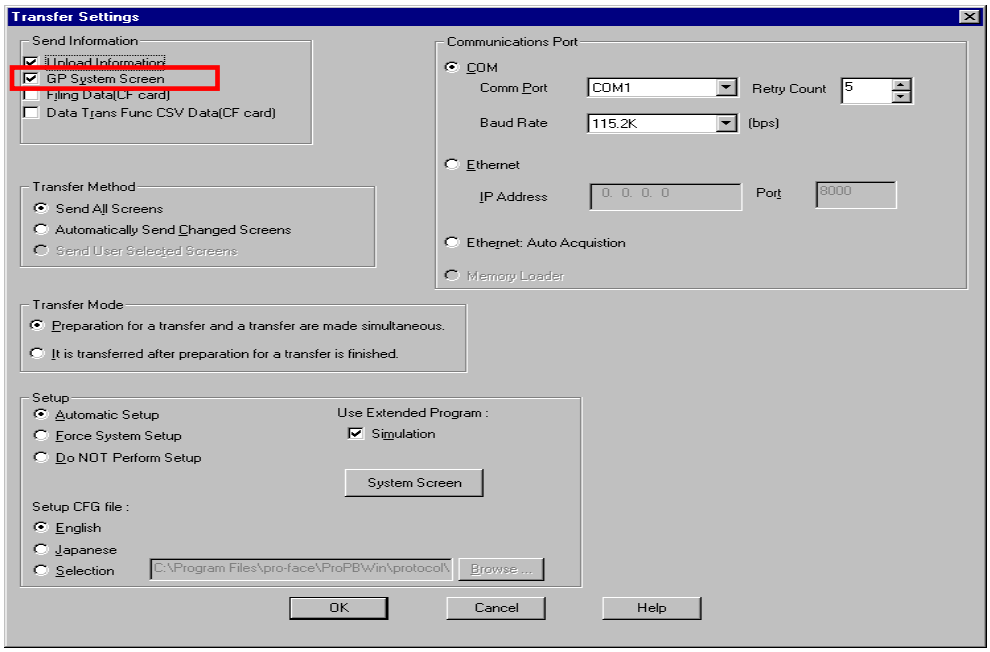
1 [GP-PRO/PBIII C-Package Setting]

Select [GP Setup] on Project Manager.

1) Communication Settings 	1) Communication Settings Transmission Speed: 9600bps Data Length: 7 Bits Stop Bit: 2 Bits Parity Bit: Even Busy Ready Control: DTR / ER RS-232C/ RS-422 RS-422 Connection: 4 Line
2) Mode Settings 	2) Mode Settings System Start Address: Arbitrary Address Link Protocol Type: 1:1

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

3) Transfer Settings



3) Transfer Settings GP System Settings: Checked

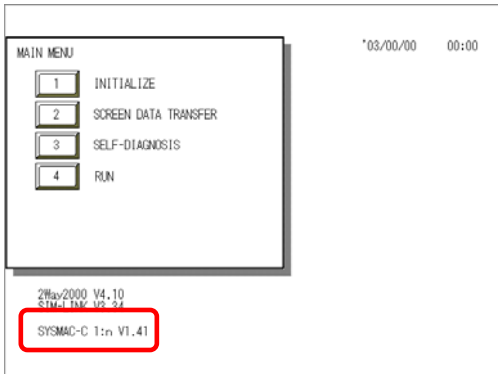
Transfer to GP after settings completed.

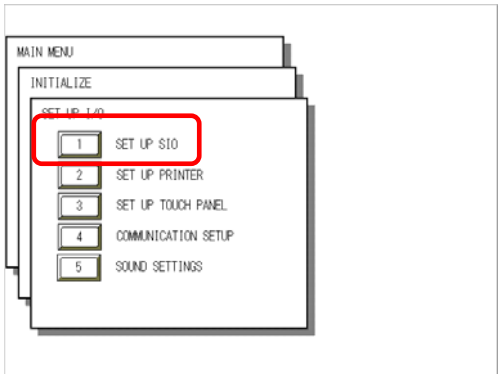
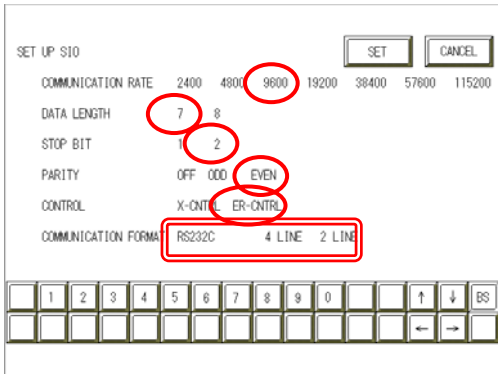
2 [GP Settings]

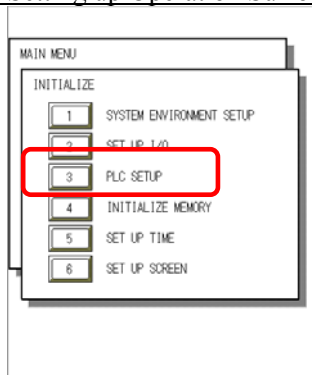
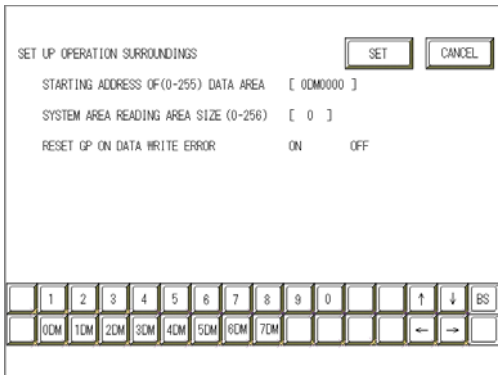
—Displaying Setting Screen—

Touch the top left of the screen within 10 second after powering on.

Or touch the top right and the bottom right of the screen at the same time. Keep 2 points touched and touch the bottom left. The menu bar will display on the bottom of the screen. Then touch [Offline].

1) Checking GP Type	1) Checking GP Type
	If you have selected OMRON SYSMAC-C 1:n Comm., following will be shown. "SYSMAC-C 1:n"

2) Communication Settings	2) Communication Settings
	[MAIN MENU] ↓ [INITIALIZE] ↓ [SET UP I/O] ↓ [SET UP SIO]
	Communication Rate: 9600bps Data Length: 7 Bits Stop Bit: 2 Bits Parity: Even Control: ER Cntrl Communication Format RS-422 Connection: 4 Line * Select one in ▭.

3) Setting up Operation Surroundings 	3) Setting up Operation Surroundings [MAIN MENU] ↓ [INITIALIZE] ↓ [PLC SETUP] ↓ [PLC SETUP]
	Starting Address of System Data Area: Arbitrary Address

Communication Settings [PLC]

SYSMAC-CQM1H Series

Word Address	Value	Setting Details
DM6650 *1	0001 (HEX)	Depending on the settings of DM6651 Mode Specification: Host Link
DM6651	0304 (HEX)	Baud Rate: 19200bps Data Length: 7 Bits Stop Bit: 2 Bits Parity Bit: Even
DM6653	0000 (HEX)	Host Link Station Number Settings: 0 *2

*1 Leave the serial communication mode setting DM6550（Bit 12 to Bit 15） set to the default setting, 0.

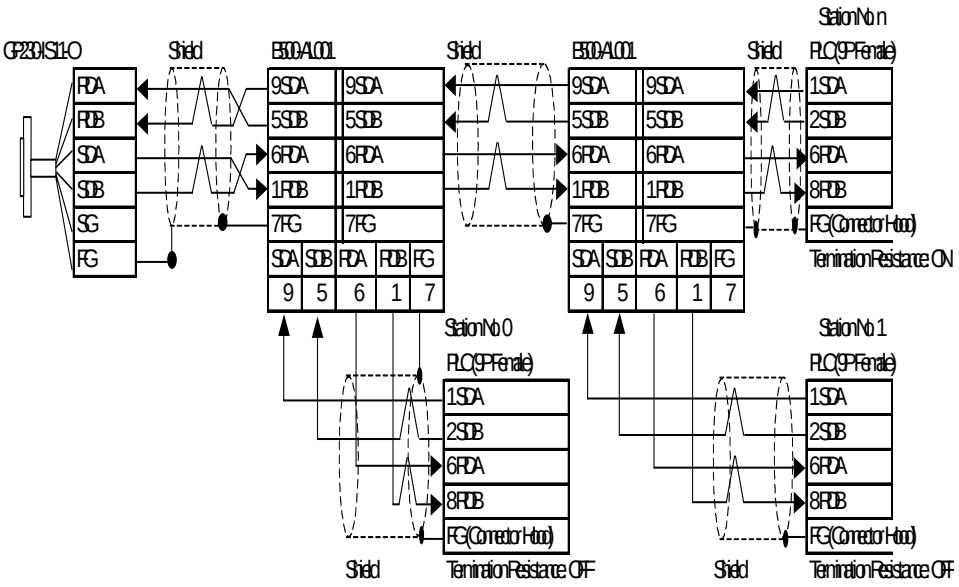
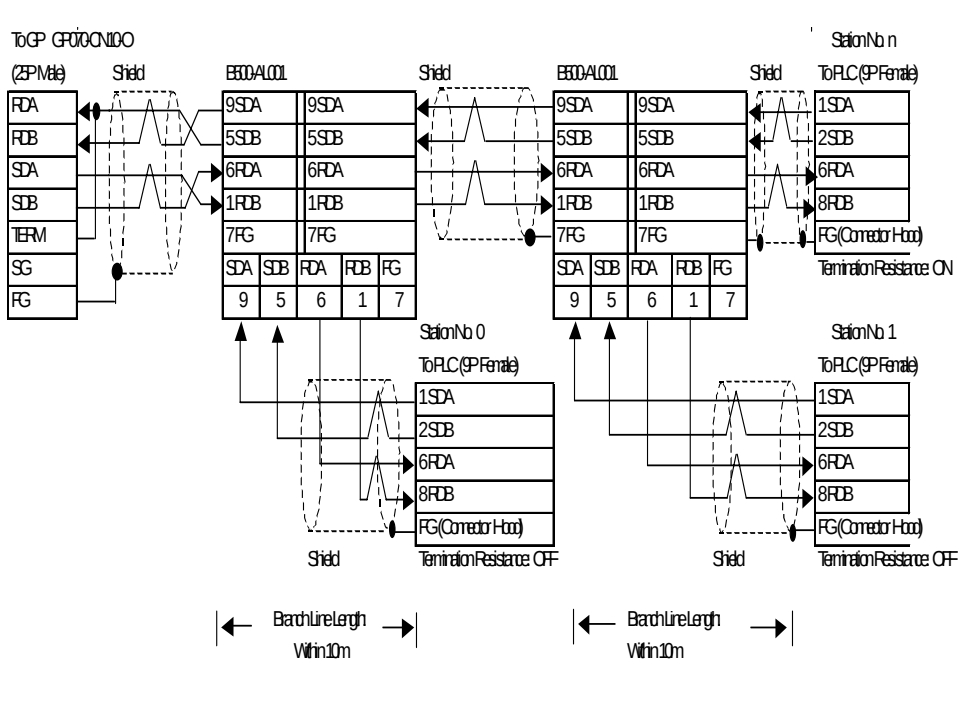
*2 Although No. 00 to 31 can be used for SYSMAC-CQM1H station numbers, the maximum number of PLCs that can communicate with the GP on the 1 to n Communication basis is eight. Therefore, set up PLC station numbers within the rage of 00 to 07.

- Set the 2-wire/4-wire selector switch [WIRE] on the PLC to the "4" position.
  Set the termination resistance switch to ON in case of a terminal station, or OFF in case of an intermediate station.

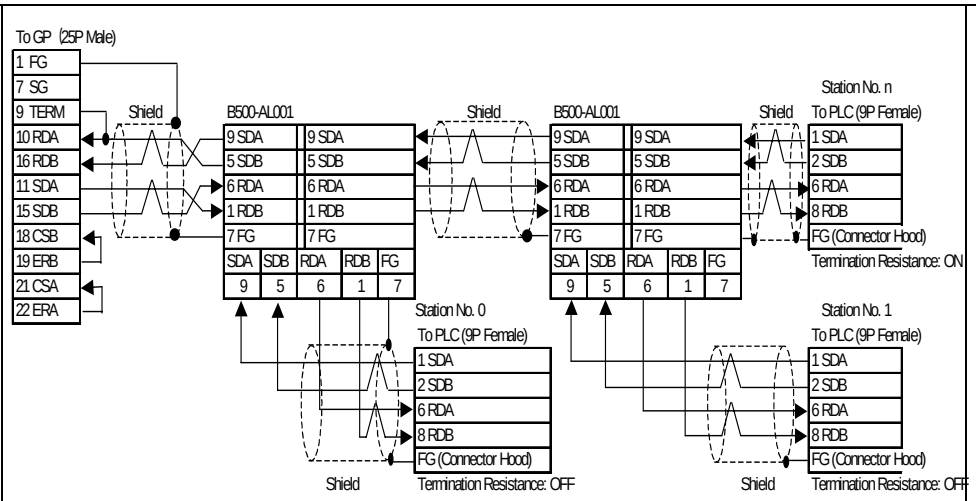
Connection Method

1. 1 to n Connection / RS-422 Connection

[Link Adapter B500-AL001 by OMRON]

Type	Connection Method	Distance
Using GP230-IS11-O		Within 500m
Using GP070-CN10-O		Within 500m

Creating Cable



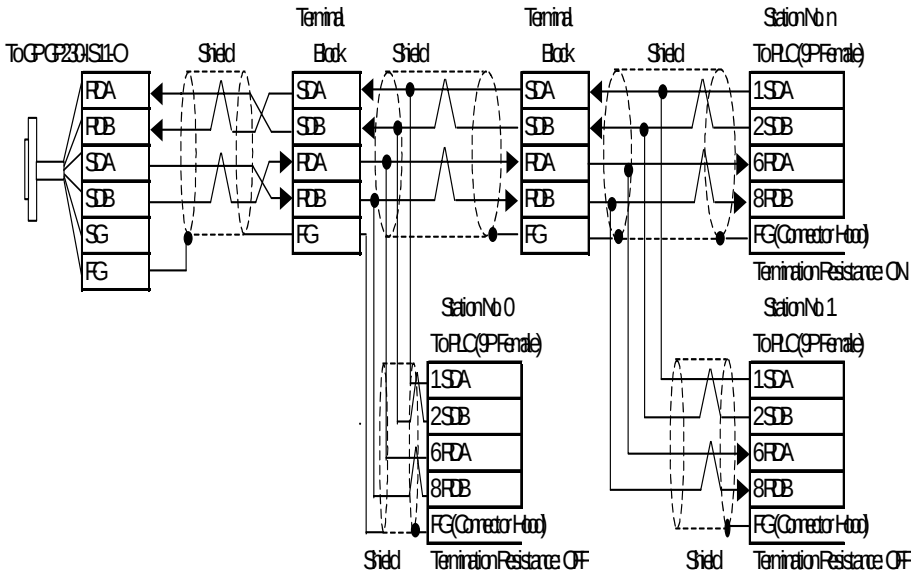
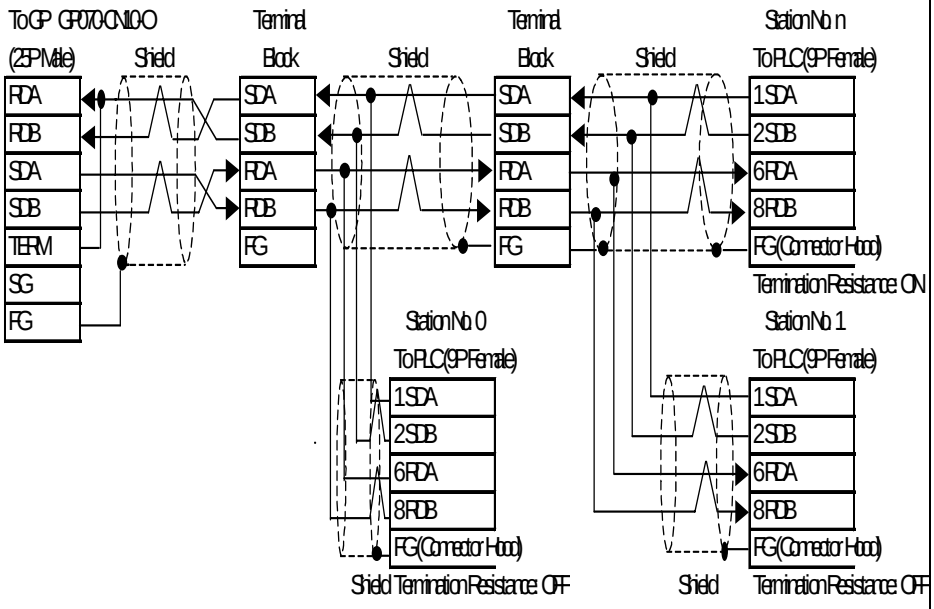
Within 500m

- **Within the GP70 Series, this applies only to the GP377 Series.**
- **Use the RS422A/485 port, which is Port 2 of CQM1H-SCB41.**
- **When "n" CQM1H-CPU51/ CQM1H-CPU61 units are connected to one GP unit for communication, the maximum number for "n" is 8.**
- **The RS422 communication port on the PLC is a D-sub. For 1 to n connections, use a link adaptor or terminal block by OMRON.**
- **Ground one end of the communication cable to either the RS-422A/485 connector hood on the serial communication board, or to the GP.**
- **The PLC has no SG connector, but its internal signal line is electrically insulated. Therefore, the SG connector on the GP/GLC requires no connection.**
- **Set the termination resistance switch, [TERM] on the terminating SYSMAC-CQMIH, to the "ON" position. If two units of PLCs are connected to the GP/GLS, the one having the longer distance for communication becomes the terminating station.**
- **Set the 2-wire/4-wire switch, [WIRE] on the PLC to the "4" position.**
- **The maximum cable length for RS-422/RS-485 communication is 500 meters. The total branch line length for T-Branching is 10 meters.**
- **To connect the PLC, use a link adaptor B500-AL001 by OMRON or a terminal block.**

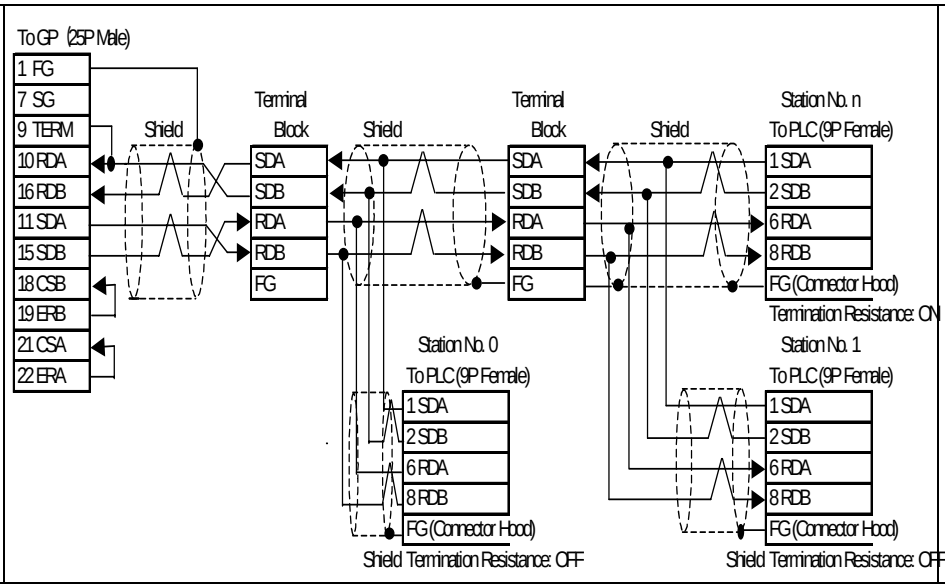
Recommended Products

Connecter/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	H-9293A (CO-HC-ESV-3P*7/0.2) <Hirakawa Hewtech Corp.>	
Setscrew	Metric Coarse Screw Tread : M2.6 × 0.45	

2. 1 to n Connection / RS-422 C0nnection (4-Wire)

Type	Connection Method	Distance
Using GP230-IS11-O		Within 500m
Using GP070-CN10-O		Within 500m

Creating Cable



Within 500m

Important

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- **Use the RS422A/485 port, which is Port 2 of CQM1H-SCB41.**
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Cable	H-9293A (CO-HC-ESV-3P*7/0.2) <Hirakawa Hewtech Corp.>	
Setscrew	Metric Coarse Screw Tread : M2.6 × 0.45	