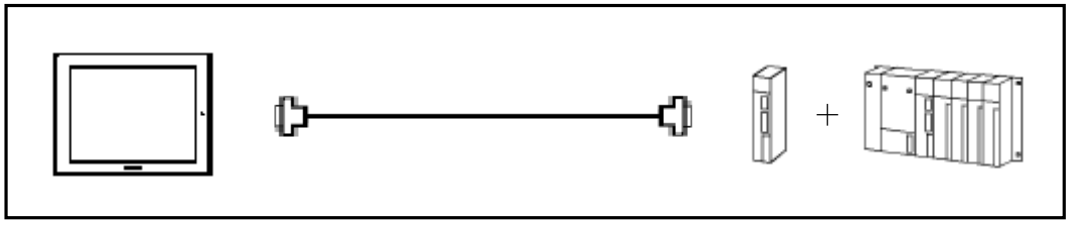
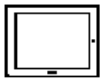
OMRON Corporation PLC
SYSMAC α Series Connection

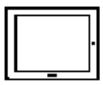
System Structure

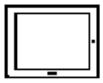


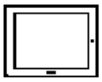
GP

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

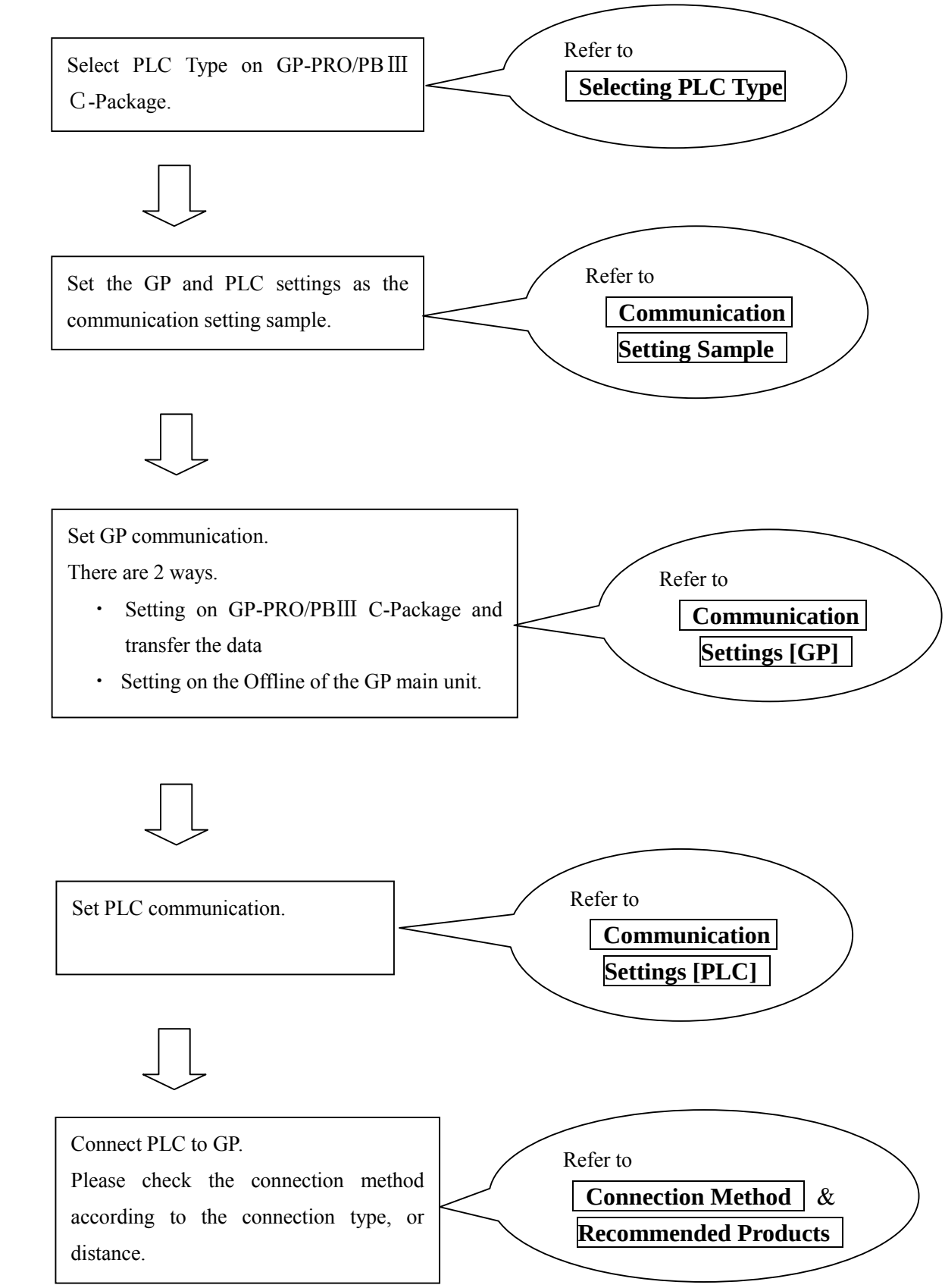
PLC

CPU 	Communication Board 	Communication Method	Connection Cable 	GP 
C200HX-CPU85-Z C200HX-CPU64 C200HX-CPU44 C200HE-CPU42 C200HG-CPU63 C200HG-CPU43	RS-232C Port on CPU Unit	RS-232C	**Connection Method [1]**	
	C200HW-COM06	RS-232C	**Connection Method [1]**	
		RS-422	**Connection Method [2]**	

CPU 	Communication Board 	Communication Method	Connection Cable 	GP 
C200HE-CPU42-Z	RS-232C Port on CPU Unit	RS-232C	**Connection Method [1]**	
	C200H-LK202-V1	RS-422	**Connection Method [4]**	

CPU 	Communication Board 	Communication Method	Connection Cable 	GP 
C200HX-CPU64-Z	C200H-LK201-V1	RS-232C	**Connection Method [3]**	
	C200H-LK202-V1	RS-422	**Connection Method [4]**	

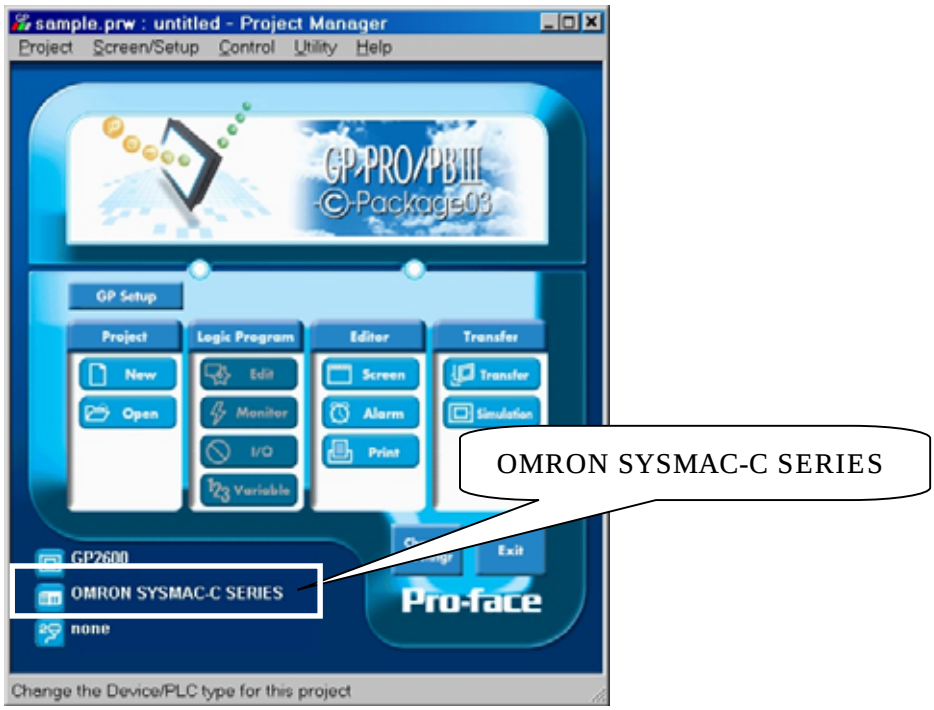
Procedure to Connect PLC



Selecting PLC Type

Start up GP-PRO /PBIII.

Select the following PLC Type when creating the project file.



Communication Setting Sample

- SYSMAC α Series <Communication Board>

GP Setup		Communication Board Setup	
Baud Rate	19200bps	Baud Rate	19200bps
Data Length	7 Bits	Data Bit	7 Bits
Stop Bit	2 Bits	Stop Bit	2 Bits
Parity Bit	Even	Parity Bit	Even
Data Flow Control	ER Control	————	
Communication Format (RS-232C)	RS-232C	————	
Communication Format (RS-422)	4-Wire Type	RS-422/485 Cable (2-Wire/4-Wire Type) Switching Settings (Dipswitch 1)	4
Unit No.	0	Station Number	0

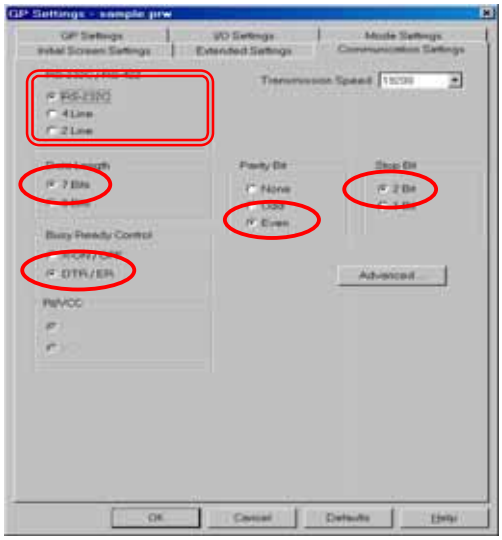
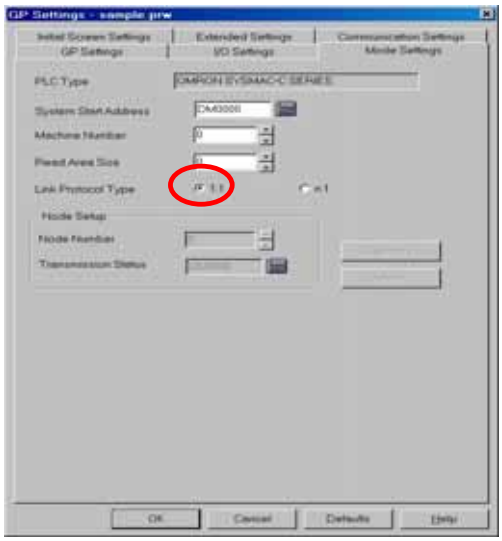
- SYSMAC α Series <RS-232C Port on CPU Unit>

GP Setup		RS-232C Port Setup	
Baud Rate	19200bps	Baud Rate	19200bps
Data Length	7 Bits	Data Bit	7 Bits
Stop Bit	2 Bits	Stop Bit	2 Bits
Parity Bit	Even	Parity Bit	Even
Data Flow Control	ER Conrtrol	————	
Communication Format	RS-232C	Mode	Host Link
Unit No.	0	Station Number	0

Communication Settings [GP]

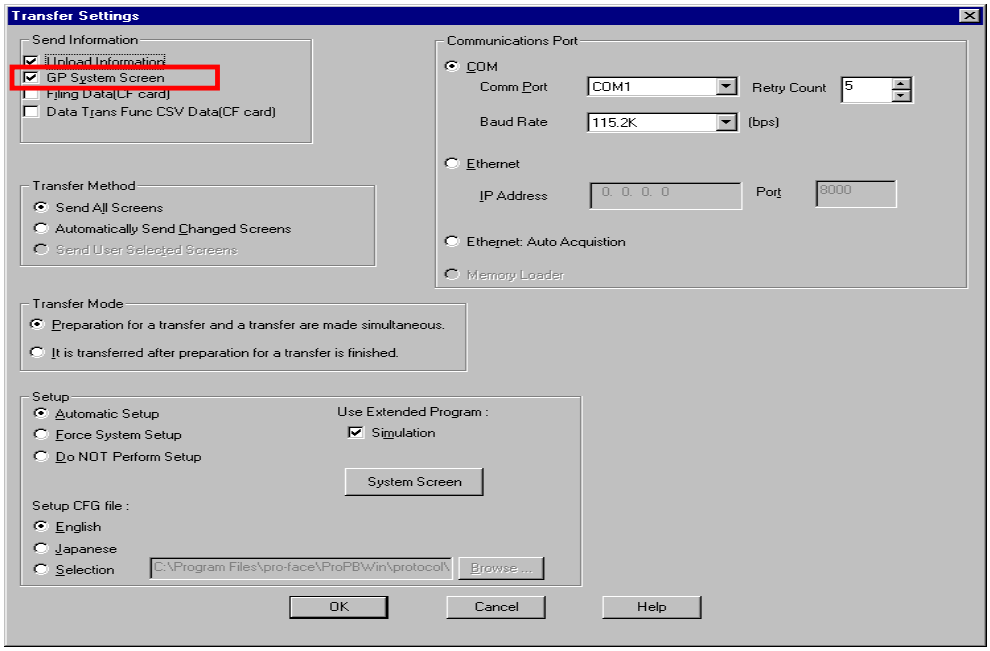
1 [GP-PRO/PBIII C-Package Setting]

Select [GP Setup] on Project Manager.

1) Communication Settings 	1) Communication Settings Transmission Speed: 19200bps 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 * Select one in ▭.
2) Mode Settings 	2) Mode Settings System Start Address: Arbitrary Address Machine Number: 0 Link Protocol Type: 1:1

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

3) Transfer Settings



3) Transfer Settings GP System Settings: Checked

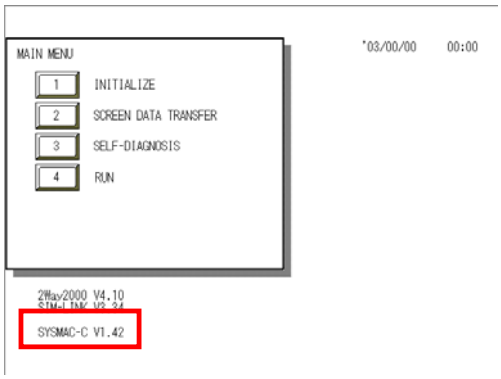
Transfer to GP after settings completed.

2. [GP Settings]

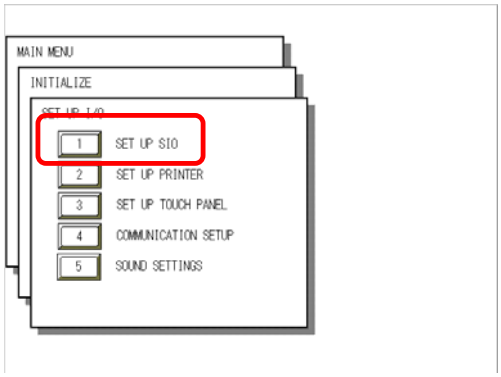
—Displaying Setting Screen—

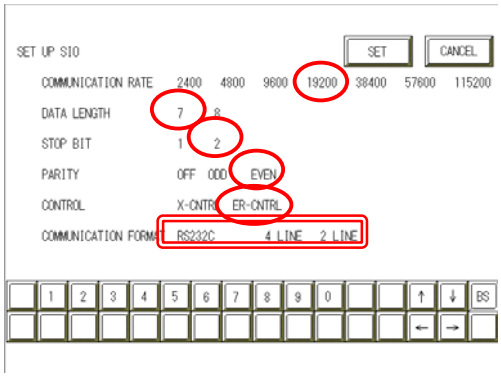
Touch the top left of the screen within 10 second after powering on.

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].

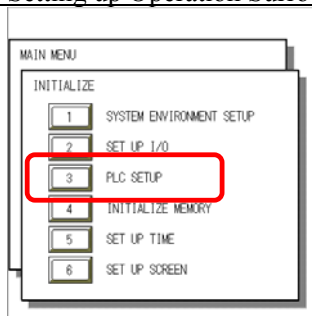
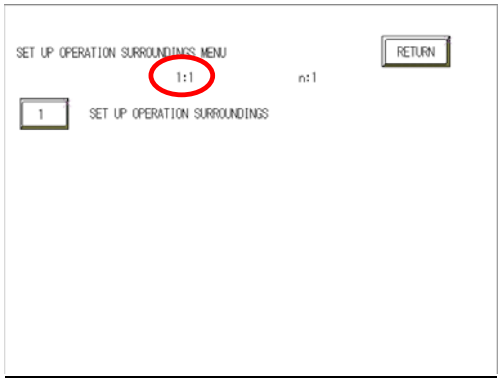
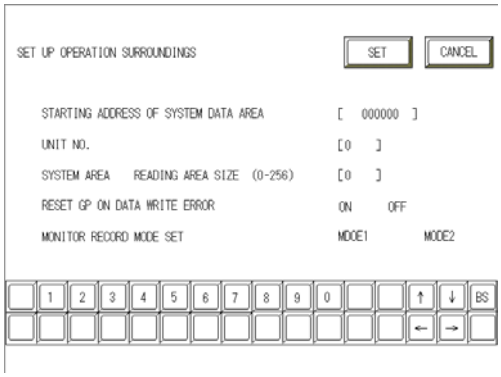
<table>
<tr>
<td> 
</td>
<td>1) Checking GP Type

If you have selected OMRON SYSMAC-C Series, following will be shown.

"SYSMAC-C"</td>
</tr>
<tr>
<td>2) Communication Settings
 
</td>
<td>2) Communication Settings

[MAIN MENU]
↓
[INITIALIZE]
↓
[SET UP I/O]
↓
[SET UP SIO]</td>
</tr>
<tr>
<td> 
</td>
<td>Communication Rate: 19200bps
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

* Select one in ▭.</td>
</tr>
</table>

3) Setting up Operation Surroundings 	3) Setting up Operation Surroundings [MAIN MENU] ↓ [INITIALIZE] ↓ [PLC SETUP] ↓ [PLC SETUP]
	SET UP OPERATION SURROUNDINGS MENU: 1:1
	Starting Address of System Data Area: Arbitrary Address Unit No.: 0

Communication Settings [PLC]

1. RS-232C Port on CPU Unit

Word Address	Value	Setting Contents
DM6645	0001 (HEX)	Depending on the settings of DM6646 Mode Setup: Host Link
DM6646	0304 (HEX)	Baud Rate: 19200bps Data Length: 7 Bits Stop Bit: 2 Bits Parity Bit: Even
DM6648	0000 (HEX)	Host Link Station No. Settings: Station No. 0

* Please make sure to turn OFF the mode setup switch SW5 on the CPU unit.

2-1 Communication Board C200HW-COM06 (RS-232C Connection)

[Port B]

Word Address	Value	Setting Contents
DM6550	0001 (HEX)	Depending on the settings of DM6551 Mode Setup: Host Link
DM6551	0304 (HEX)	Baud Rate: 19200bps Data Length: 7 Bits Stop Bit: 2 Bits Parity Bit: Even

* Please make sure to turn OFF the mode setup switch SW5 on the CPU unit.

2-2 Connection Board C200HW-COM06 (RS-422 Connection)

[Port A]

Word Address	Value	Setting Contents
DM6555	0001 (HEX)	Depending on the settings of DM6556 Mode Setup: Host Link
DM6556	0304 (HEX)	Baud Rate: 19200bps Data Length: 7 Bits Stop Bit: 2 Bits Parity Bit: Even

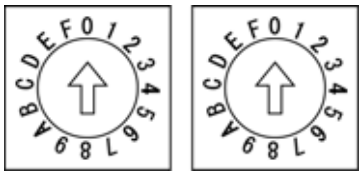
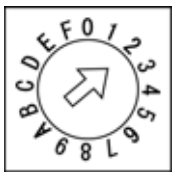
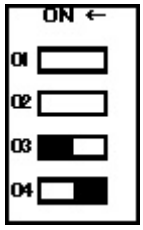
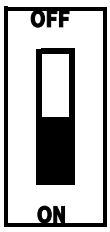
* Please make sure to turn OFF the mode setup switch SW5 on the CPU unit.

* Set the dipswitch on the communication board as below.

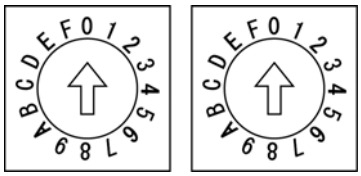
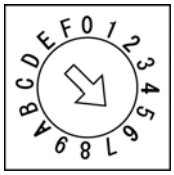
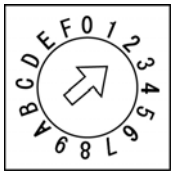
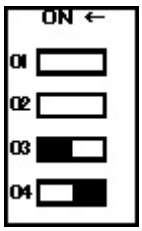
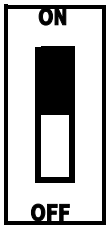
SW1 : 4

SW2 : ON

3. Host Link Unit C200H-LK201-V1

1) Front Switch Settings SW1 SW2  SW3  SW4 	1) Front Switch Settings 0: Station No. Settings (× 10) 0: Station No. Settings (× 1) 6: Baud Rate Settings (19200bps) 2: (Parity/Data/Stop Bit Settings) Parity Bit: Even Data Bit: 7 Bits Stop Bit: 2 Bits
2) Back Dipswitch Settings **Set the switches to the black.**  	2) Back Dipswitch Settings SW1: Unused SW2: Unused SW3 (Relation): 1 to n SW4 (5V Power Supply): No
3) CTS Switch Settings  	3) CTS Switch Settings ON (Turning CTS ON)

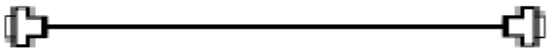
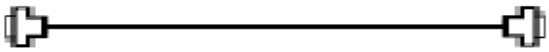
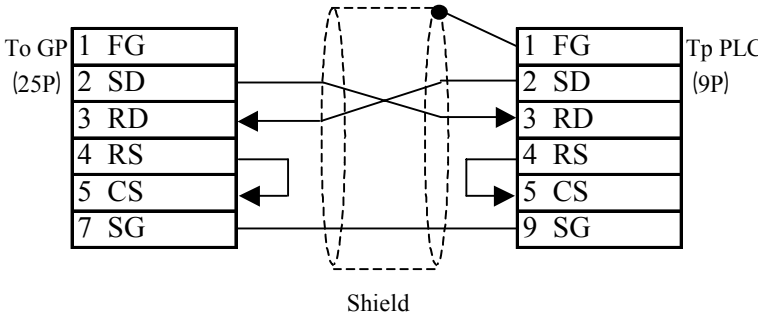
4. Host Link Unit C200H-LK202-V1

1) Front Switch Settings SW1 SW2  SW3  SW4 	1) Front Switch Settings 0: Station No. Settings (× 10) 0: Station No. Settings (× 1) 6: Baud Rate Settings (19200bps) 2: (Parity/Data/Stop Bit Settings) Parity Bit: Even Data Bit: 7 Bits Stop Bit: 2 Bits
2) Relation Switch Settings 	2) Relation Switch Settings OFF (1 to n Relation)
3) Termination Resistance Connection Switch Settings 	3) Termination Resistance Connection Switch Settings ON (With Termination Resistance)

Connection Method

1. RS-232C Connection

[RS-232C on CPU Unit / C200HW-COM06]

Type	Connection Method	Distance
Using GP000-IS03-MS		3m
Using XW2Z-200S or XW2Z-500S by OMRON		2m 5m
Creating Cable		Within 15m

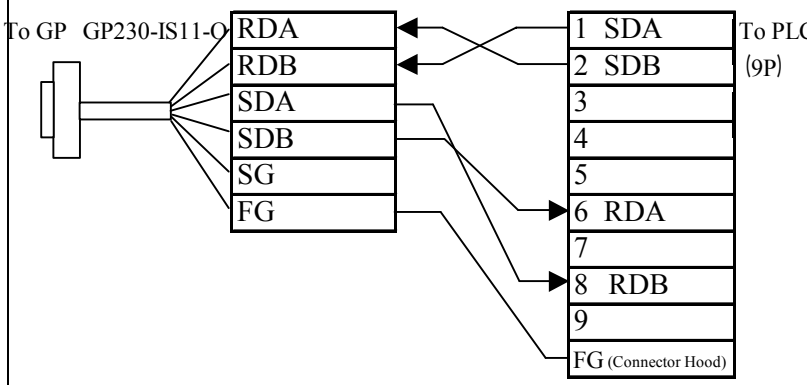
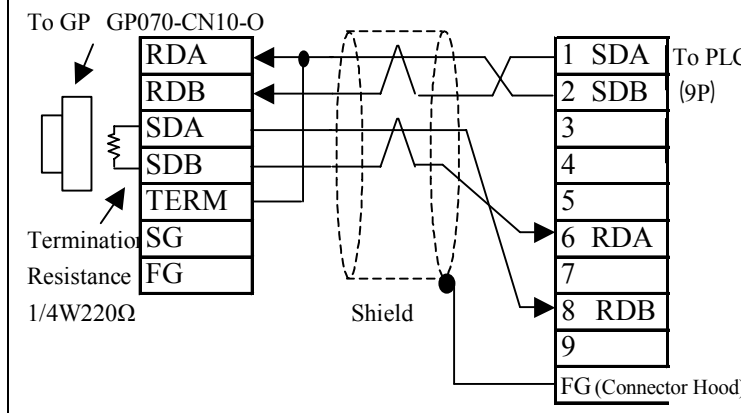
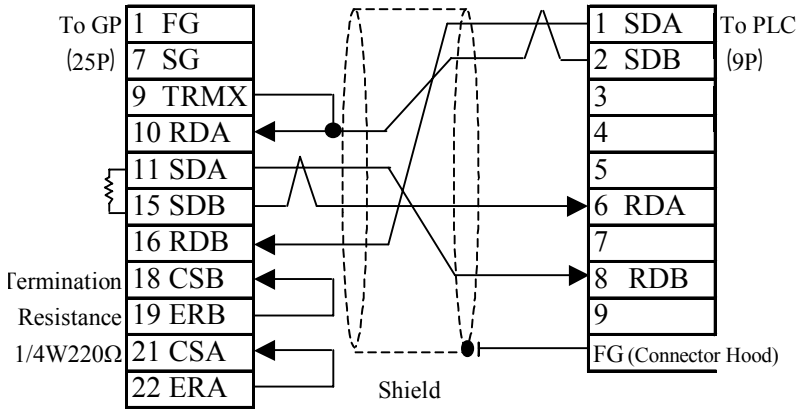
NOTE While the above connection diagram differs slightly from the OMRON XW2Z-200S (2m) and XW2Z-500S (5m) RS-232C cables, the system will operate correctly using this design.

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. RS-422 Connection

[C200HW-COM06]

Type	Connection Method	Distance
Using GP230-IS11-O		5m
Using GP070-CN10-O		Within 500m
Creating Cable		Within 500m

*** Turn on the termination resistance switch on the PLC.**

*** Names of Signal A and Signal B are opposite on the GP and the PLC.**

*** One each of the connector and connector hood, listed below, are included with the CV500 / CV1000 CPU unit. Only these connectors listed below can be used.**

Connector XM2A-0901

Connector Hood XM2S-0901

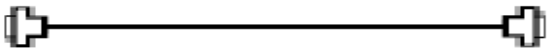
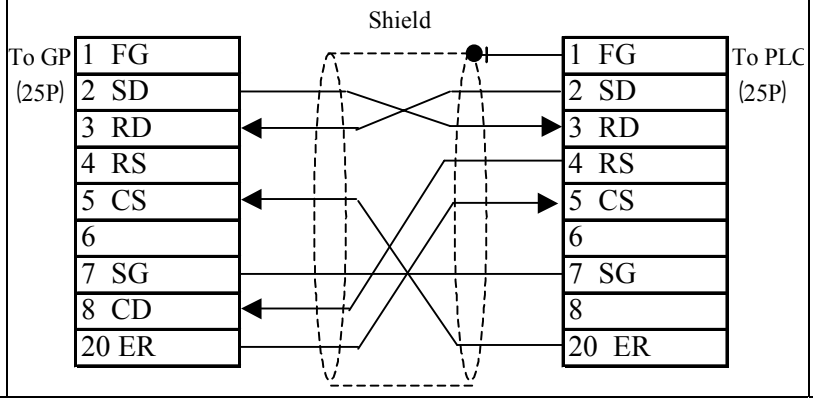
NOTE * When connecting the #9 and #10 pin on the GP Serial I/F, a termination resistance of 100Ω is added between RDA and RDB.

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	

3. RS-232C Connection

[C200H-LK201-V1]

Type	Connection Method	Distance
Using GP410-IS00-O		5m
Creating Cable		Within 15m

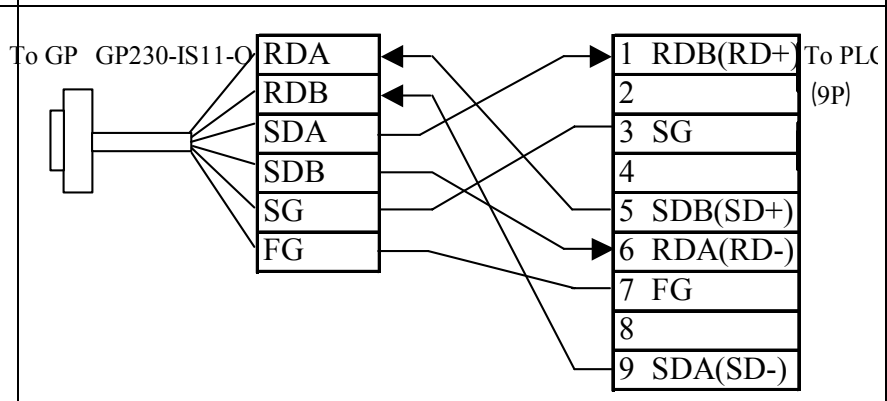
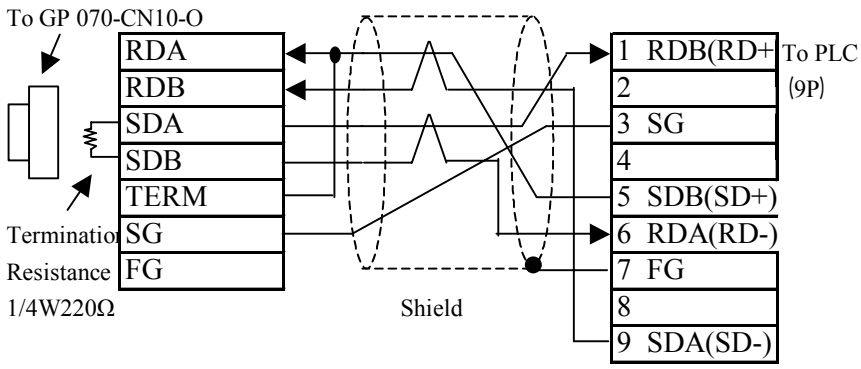
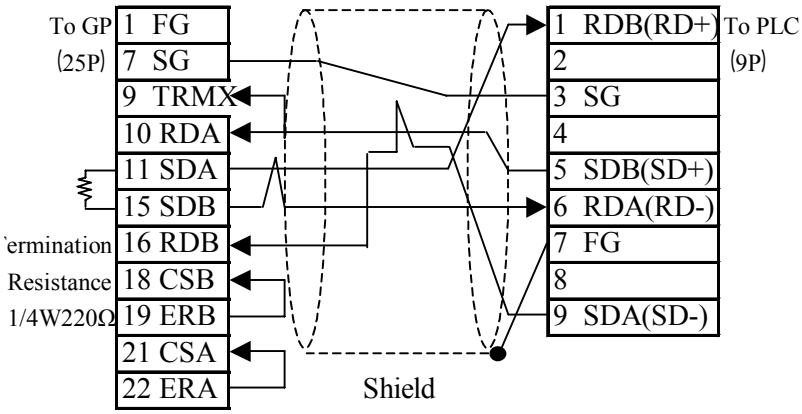
NOTE The option cable GP410-IS00-O is 5m. If you need a longer cable or shorter, please use a User-Created cable to connect.

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	

4. RS-422 Connection

[C200H-LK202-V1]

Type	Connection Method	Distance
Using GP230-IS11-O		5m
Using GP070-CN10-O		Within 500m
Creating Cable		Within 500m

*** Please make sure to connect SG.**

*** Turn on the termination resistance switch on the PLC.**

*** Names of Signal A and Signal B are opposite on the GP and the PLC.**

NOTE

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

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	