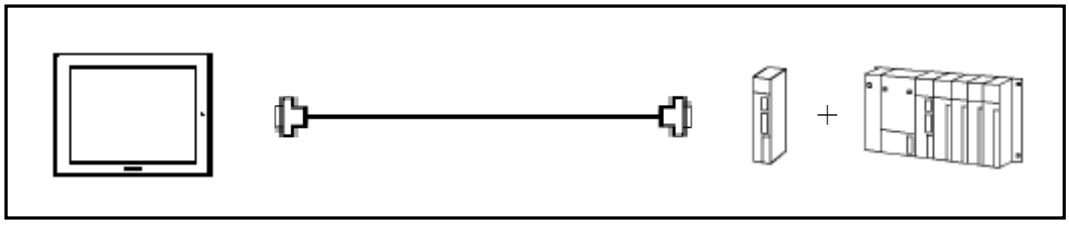
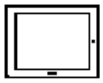
OMRON Corporation PLC
SYSMAC C Series Connection

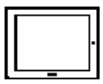
System Structure



GP

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

P L C

CPU 	Host Link I/F 	Communication Method	Connection Cable 	GP 
CQM1-CPU42	Link I/F on CPU Unit	RS-232C	**Connection Method [1]**	
SRM1-C02 CPM2A	CPM1-CIF01	RS-232C	**Connection Method [1]**	
	Link I/F on CPU Unit			
	CPM1-CIF11	RS-422	**Connection Method [2]**	
CPM1-20CDR-A	CPM1-CIF01	RS-232C	**Connection Method [1]**	
	CPM1-CIF11	RS-422	**Connection Method [2]**	
CQM1H-CPU21	Link I/F on CPU Unit	RS-232C	**Connection Method [1]**	
CPM2C	Peripheral Port on CPM2C-CIF01	RS-232C	**Connection Method [3]**	
	RS-232C Port on CPM2C-CIF01	RS-232C	**Connection Method [1]**	

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/PB Ⅲ 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]**

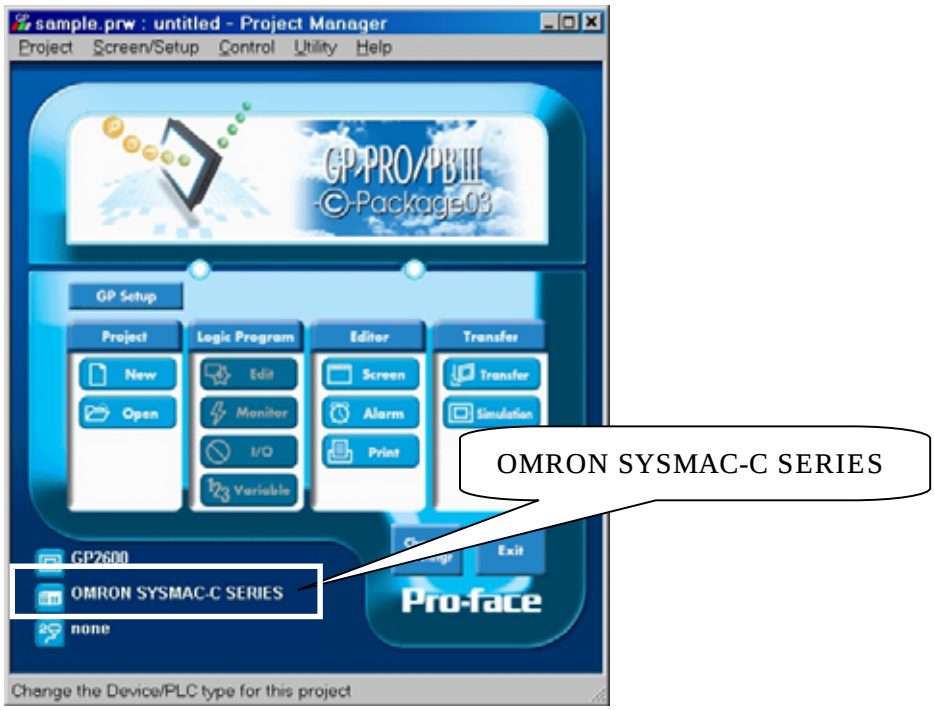
Connect PLC to GP.
Please check the connection method according to the connection type, or distance.

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

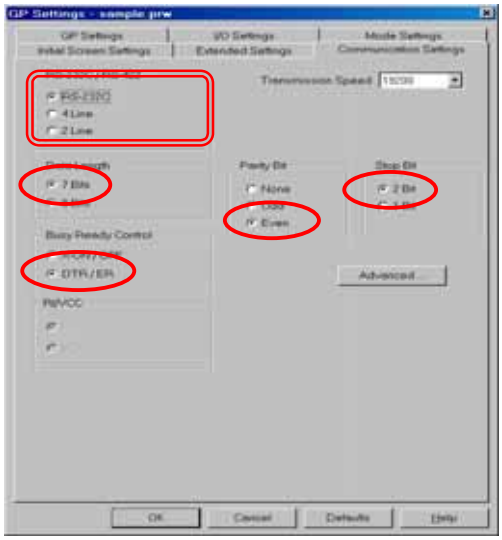
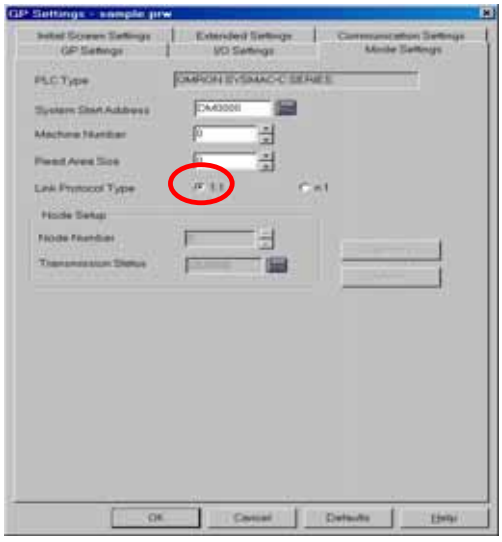
GP Setup		PLC Setup	
Baud Rate	19200bps	Baud Rate	19200bps
Data Length	7 bits	Data Length	7 bits
Stop Bit	2 bits	Stop Bit	2 bits
Parity Bit	Even	Parity Bit	Even
Data Flow Control	ER Control	———	
Communication Format (RS-232C Connection)	RS-232C	Communication Format (RS-232C Connection) *1	RS-232C
Communication Format (RS-422 Connection)	4 Line	Communication Format (RS-422 Connection) *1	RS-422
———		Command Level *1	Level 1,2, and 3 are valid
———		Relation *1	1 to n
———		DC + 5V Power Supply *1	No
———		CTS Setup *1	Nomally ON
———		Mode Setup *2	Host Link
———		Communication *3 Condition Setting Switch	OFF
———		Communication Port *4 Function Settings Switch	SW1:OFF SW2:ON
Unit No.	0	Station No.	0

*1 This setup is unavailable for the RS-232C port on CQM1 and CPH2A.
*2 This setup is available only for the RS-232C port on CQM1.
*3 This setup is available only for CPM2A.
*4 This setup is available only for CPM2C.

Communication Settings [GP]

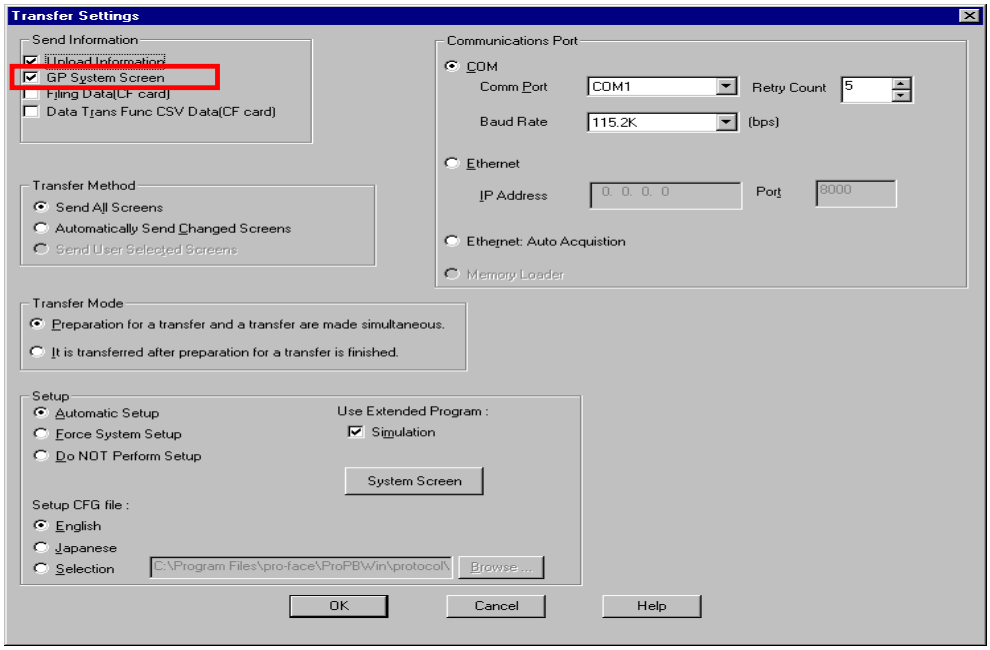
1 [GP-PRO/PBⅢ C-Package Setting]

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

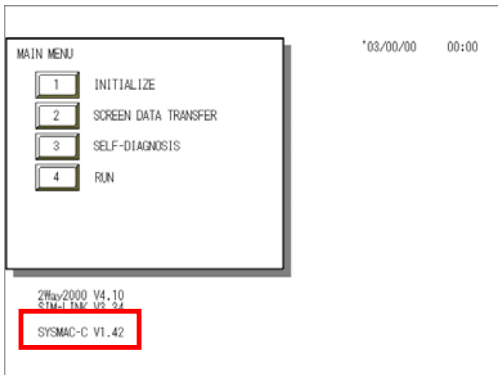
Transfer to GP after settings completed.

2. [GP Settings]

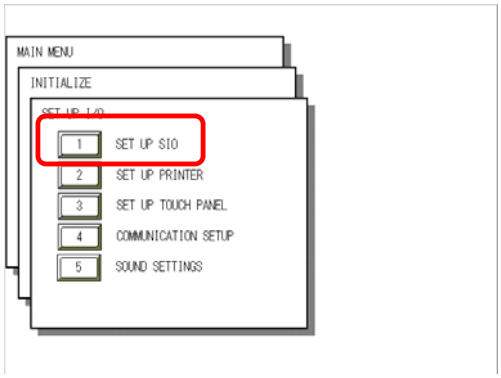
－Displaying Setting Screen－

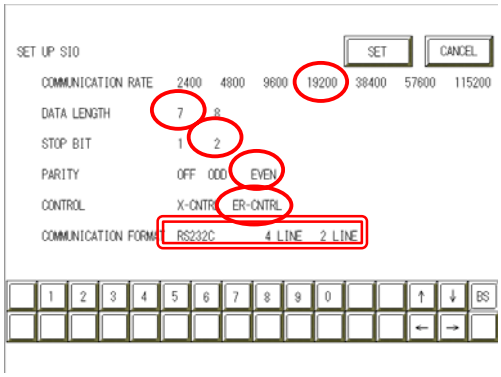
Touch the top left of the screen within 10 second after powering on.

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].

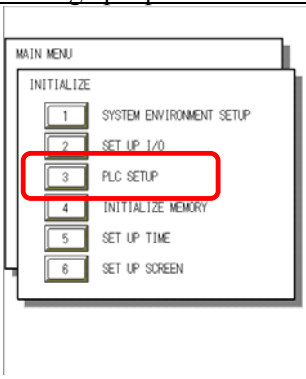
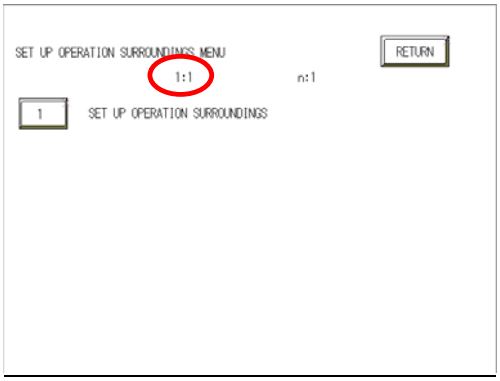
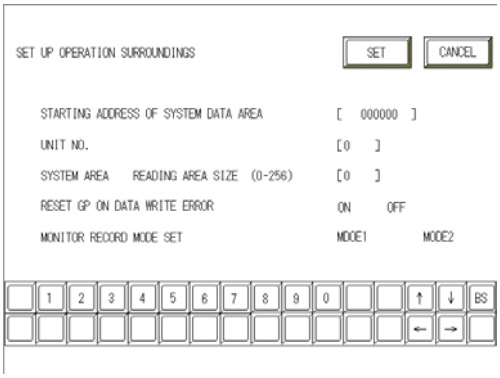
<table>
<tr>
<td> 
</td>
<td>1) Checking GP Type

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.

* To connect CPM2A, turn OFF the Communication Condition Setting Switch.

2. RS-232C Conversion Adaptor CPM1-CIF01

Word Address	Value	Setting Contents
DM6650	0001 (HEX)	Depending on the settings of DM6651 Mode Setup: 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 No. Settings: Station No. 0

* Connect the conversion adaptor to the peripheral port on the CPU unit.

* Please make sure to set the mode setting switch on the conversion adaptor to "HOST".

3. RS-422 Conversion Adaptor CPM1-CIF11

Word Address	Value	Setting Contents
DM6650	0001 (HEX)	Depending on the settings of DM6651 Mode Setup: 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 No. Settings: Station No. 0

* Connect the conversion adaptor to the peripheral port on the CPU unit.

* Please turn ON the termination resistance switch on the conversion adaptor.

4. Adaptor Unit CPM2C-CIF01 (RS-232C Port Connection)

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)	RS-232C Port Station No. Settings: Station No. 0

* Connect the conversion adaptor to the peripheral port on the CPU unit.

* Set SW1 and SW2 of "Communication Port Function Settings Switch Setup" as below.

SW1 : OFF

SW2 : ON

5. Adaptor Unit CPM2C-CIF01 (Peripheral Port Connection)

Word Address	Value	Setting Contents
DM6650	0001 (HEX)	Depending on the settings of DM6651 Mode Setup: 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 No. Settings: Station No. 0

* Connect the conversion adaptor to the peripheral port on the CPU unit.

* Set SW1 and SW2 of "Communication Port Function Settings Switch Setup" as below.

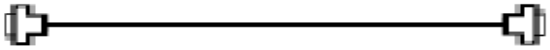
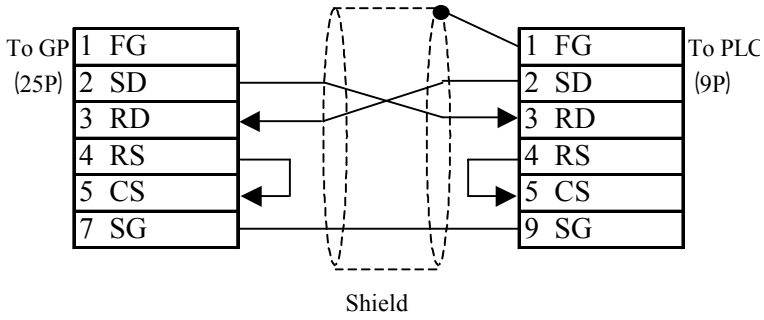
SW1 : OFF

SW2 : ON

Connection Method

1. RS-232C Connection

[RS-232C on CPU Unit / CPM1-CIF01 / CPM2C-CIF01]

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

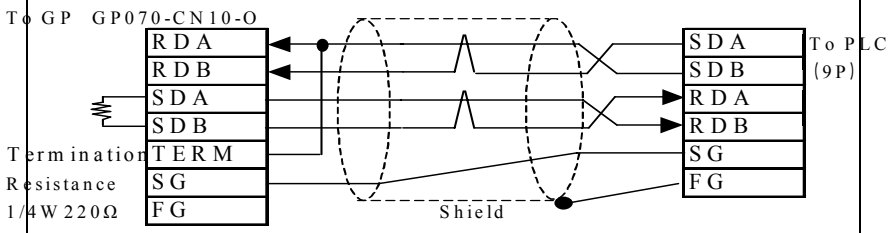
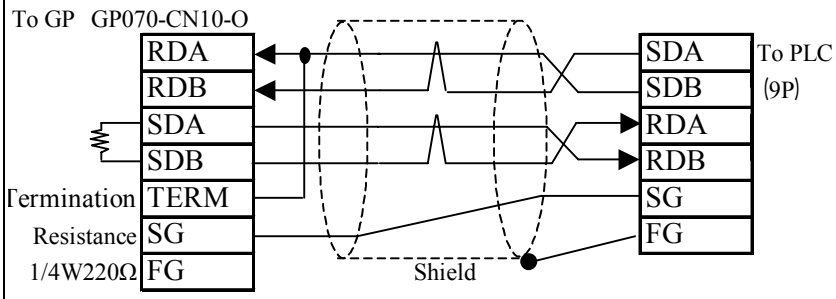
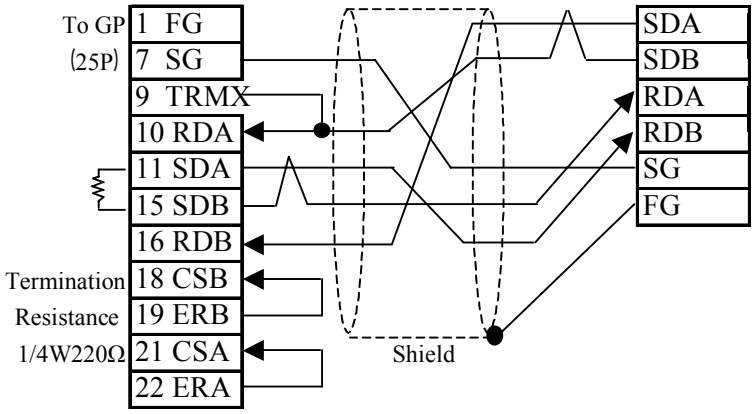
NOTE While the above connection diagram differs slightly from the OMRON XW2Z-200S (2m) and XW2Z-500S (5m) RS-232C cables, the system will operate correctly using this design.

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

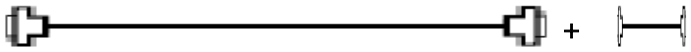
[CPM1-CIF11]

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

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. Isolation Cable CQM1-CIF01 and CS1W-CN114

Type	Connection Method	Distance
Using Combination of Isolation Cable CQM1-CIF01 by OMRON and Connector Conversion Cable CS1W-CN114		3.3m + 0.05m (Total 3.35m)

- **Connect to a peripheral port.**
- **The CQM1-CPU11 has only one peripheral port, so a programming console cannot be used at the same time with the GP.**
- **If power to CQM1 is turned OFF while it is connected to the GP, "RUN" (operation) will stop. To change CQM1 to RUN mode when the power is turned back ON, change [Power ON Operation Mode Setting] of CQM1 to [RUN].**