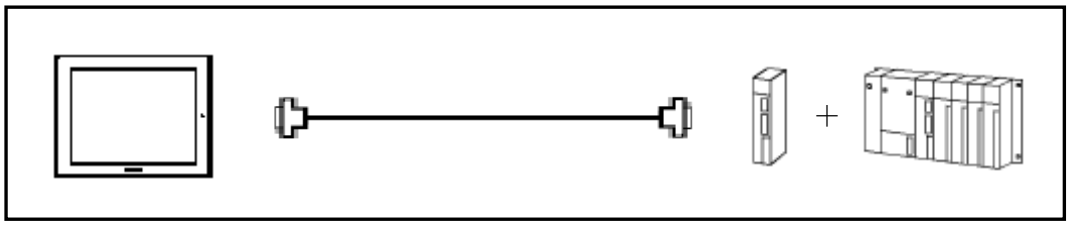
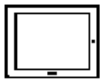
OMRON Corporation PLC
SYSMAC CV Series Connection

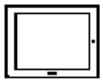
System Structure



GP

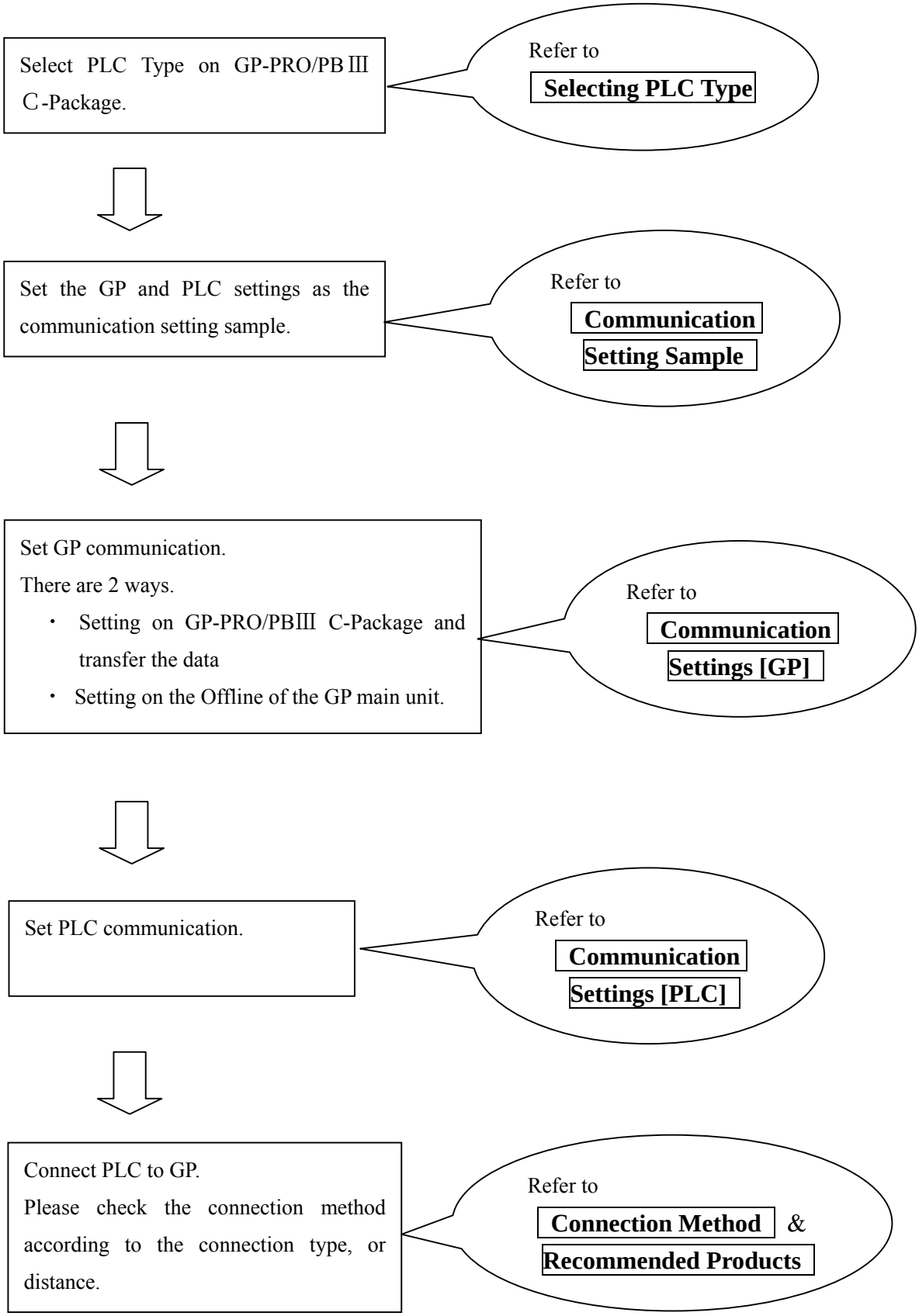
Machine 	Model	Remark
GP	GP70 Series GP77/77R Series GP2000 Series	Excepting for handy types.
GLC	GLC2000 Series	

PLC

CPU 	Link Interface 	Communication Method	Connection Cable 	GP 
CV500 CV1000 CVM1	Link I/F on CPU Unit *1	RS-232C	**Connection Method [1]**	
		RS-422	**Connection Method [2]**	
	CV500-LK201	RS-232C (COM Port 1)	**Connection Method [3]**	
		RS-232C (COM Port 2)	**Connection Method [1]**	
		RS-422 (COM Port 2)	**Connection Method [2]**	

*1 Connect to the Host Link Port.

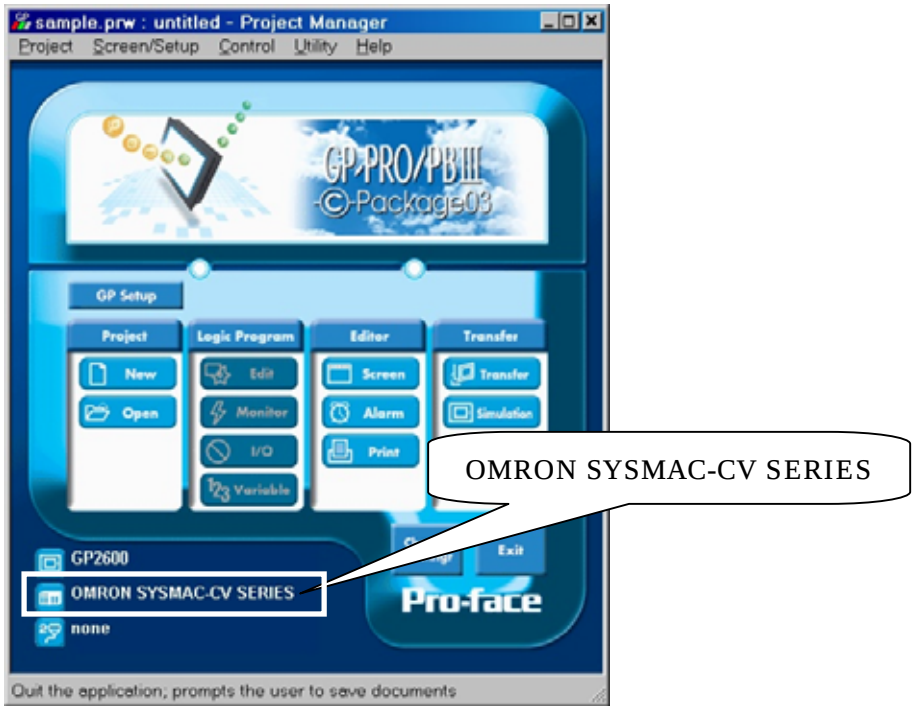
Procedure to Connect PLC



Selecting PLC Type

Start up GP-PRO /PBIII.

Select the following PLC Type when creating the project file.



Communication Setting Sample

■ SYSMAC CV Series

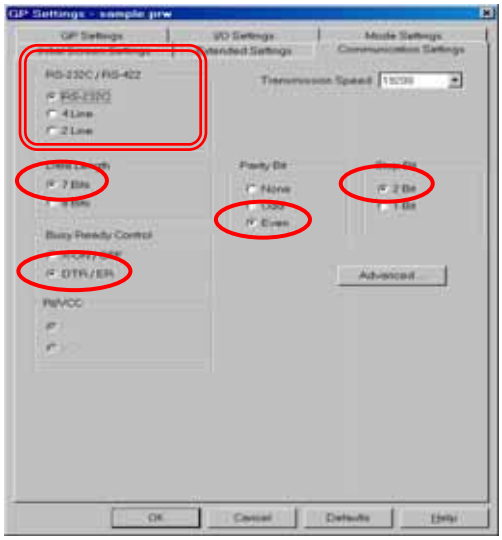
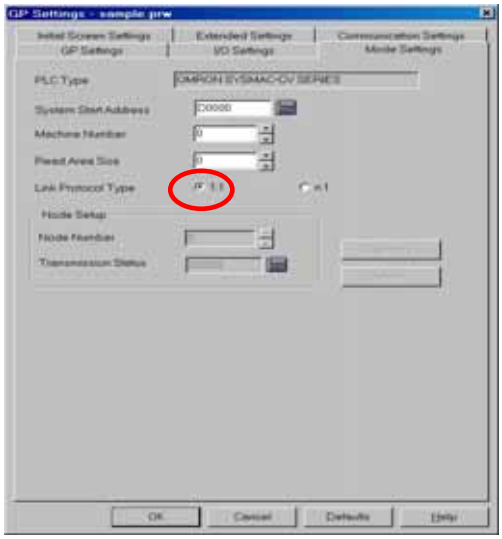
GP Setup		PLC Setup	
Baudrate	19200bps	Baudrate	19200bps
Data Length	7 bits	Data Length	7 bits
Stop Bit	2 bits	Stop Bit	2 bits
Parity Bit	Even	Parity Bit	Even
Data Flow Control	ER Control	————	
Communication Format	RS-232C	Communication Format	RS-232C
Communication Format	4 Line	Communication Format	RS-422
Unit No.	0	Station Number	0

*1 When GP is connected to COM Port 1 on the host link unit CV500-LK201, the unit number must be fixed as "0". The station number cannot be set on the PLC.

Communication Settings [GP]

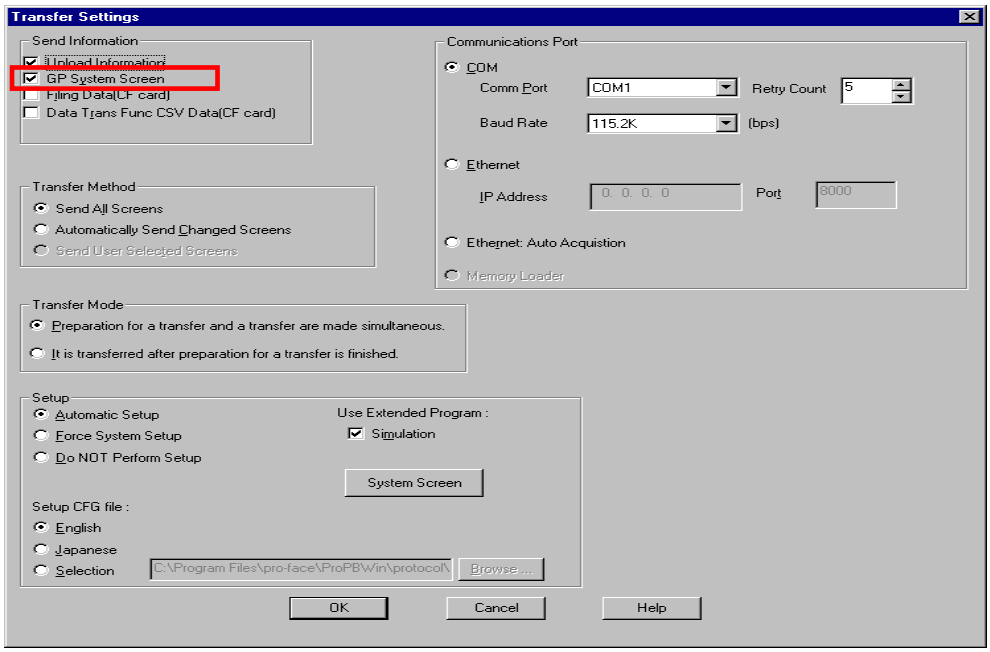
1 [GP-PRO/PBIII C-Package Setting]

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

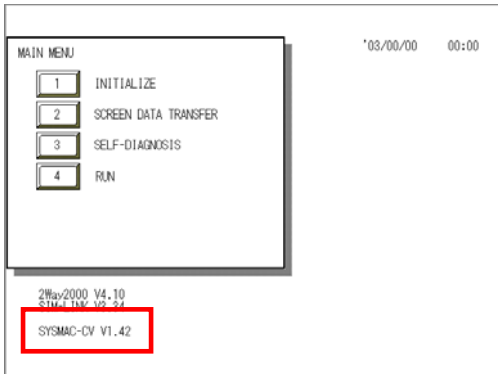
Transfer to GP after settings completed.

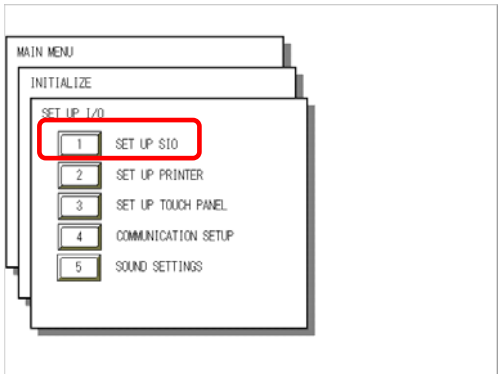
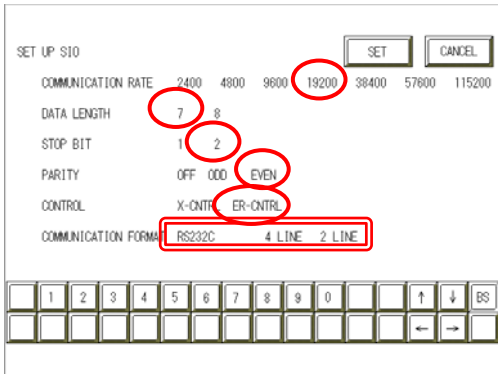
2. [GP Settings]

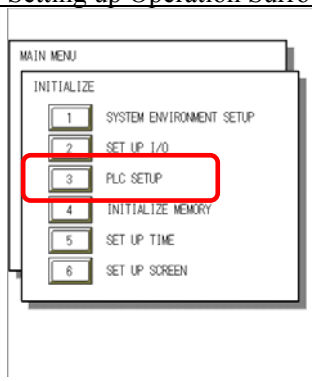
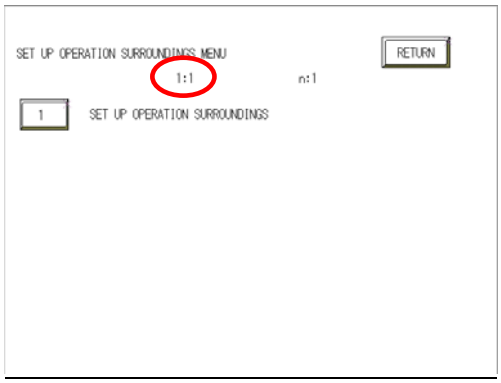
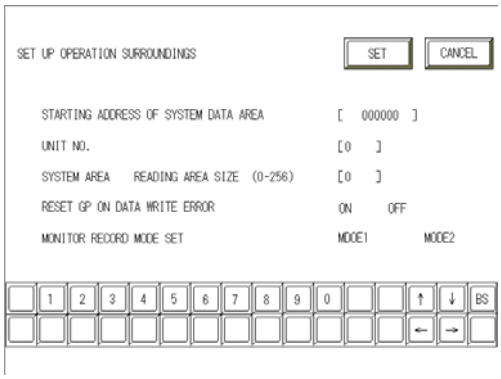
—Displaying Setting Screen—

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].

1) Checking GP Type	1) Checking GP Type
	If you have selected OMRON SYSMAC-CV Series, following will be shown. "SYSMAC-CV"

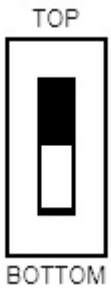
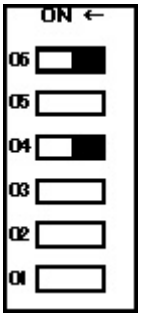
2) Communication Settings	2) Communication Settings
	[MAIN MENU] ↓ [INITIALIZE] ↓ [SET UP I/O] ↓ [SET UP SIO]
	Communication Rate: 19200bps Data Length: 7 Bits Stop Bit: 2 Bits Parity: Even Control: ER Cntrl Communication Format RS-232C Connection: RS-232C RS-422 Connection: 4 Line * Select one in [ ].

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]

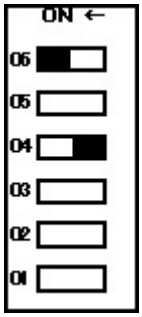
1. Link I/F on CPU Unit

[RS-232C Connection]

1) Communication Path Switch Settings  	1) Communication Path Switch Settings Top (RS-232C Communication)
2) Dipswitch Settings **Set the switches to the black.**  	2) Dipswitch Settings SW4: OFF (Communicating by the values of the system settings) ・ Baud Rate: 19200bps ・ Stop Bit: 2 Bits ・ Parity Bit: Even ・ Data Length: 7 Bits ・ Station No.: 0 SW6: OFF (Without Termination Resistance) * Settings of other dipswitches are not required for the communication with the GP.

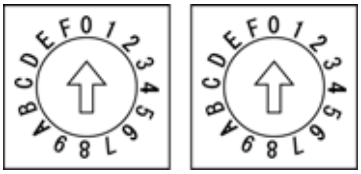
2. Link I/F on CPU Unit

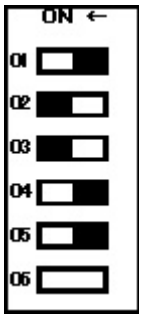
[RS-422 Communication]

1) Communication Path Switch Settings  	1) Communication Path Switch Settings Bottom (RS-422 Communication)
2) Dipswitch Settings **Set the switches to the black.**  	2) Dipswitch Settings SW4: OFF (Communicating by the values of the system settings) ・ Baud Rate: 19200bps ・ Stop Bit: 2 Bits ・ Parity Bit: Even ・ Data Length: 7 Bits ・ Station No.: 0 SW6: ON (With Termination Resistance) * Settings of other dipswitches are not required for the communication with the GP.

3. Host Link Unit CV500-LK201

3-1 [COM Port 1 Connection (RS-232C Fixed)]

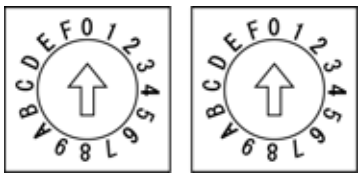
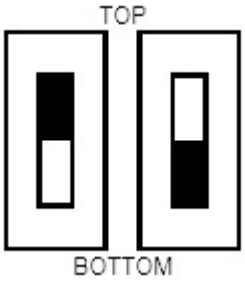
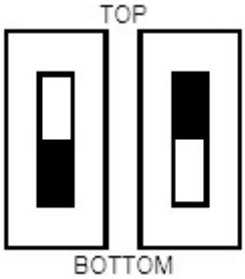
1) Station No. Switch Settings  （SW3: ×10　SW4: ×1） * Settings of SW1 and SW2 are not required for the communication with the GP.	1) Station No. Switch Settings 00 (Fixed) * Settings of SW1 and SW2 are not required for the communication with the GP.
2) 5V Output Switch Settings 	2) 5V Output Switch Settings Bottom (Not Supply)
3) Termination Resistance Switch Settings 	3) Termination Resistance Switch Settings Bottom (Without Termination Resistance)

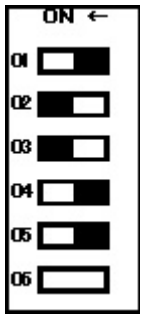
4) Dipswitch Settings	4) Dipswitch Settings
Set the switches to the black.  	*1 SW1 (Transmission Condition Settings): OFF SW2 (CTS Switch of Port 1): ON SW3 (CTS Switch of Port 2): ON SW4 (Spare): OFF SW5 (Loopback Test): OFF * Settings of SW6 are not required for the communication with the GP.

*1 The default values of transmission condition settings are as below.
Change the baud rate to 19200bps on the ladder software, etc.

- Baud Rate: 9600bps
- Stop Bit: 2 Bits
- Parity Bit: Even
- Data Length: 7 Bits

3-2 [COM Port 2 Communication (RS-232C/RS-422 Switchable)]

1) Station No. Switch Settings  （SW3：×10, SW4：×1） * Settings of SW1 and SW2 are not required for the communication with the GP.	1) Station No. Switch Settings 00 (Possible to set from 00 to 31) * Settings of SW1 and SW2 are not required for the communication with the GP.
2) 5V Output Switch Settings 	2) 5V Output Switch Settings Bottom (Not Supply)
3) Communication Path Switch Settings 	3) Communication Path Switch Settings Top (RS-232C) Bottom (RS-422）
4) Termination Resistance Switch Settings 	4) Termination Resistance Switch Settings RS-232C: Bottom (Without Termination Resistance) RS-422: Top (With Termination Resistance)

5) Dipswitch Settings **Set the switches to the black.**  	5) Dipswitch Settings SW1 (Transmission Condition Settings): OFF *1 SW2 (CTS Switch of Port 1): ON SW3(CTS Switch of Port 2): ON SW4 (Spare): OFF SW5 (Loopback Test): OFF * Settings of SW6 are not required for the communication with the GP.

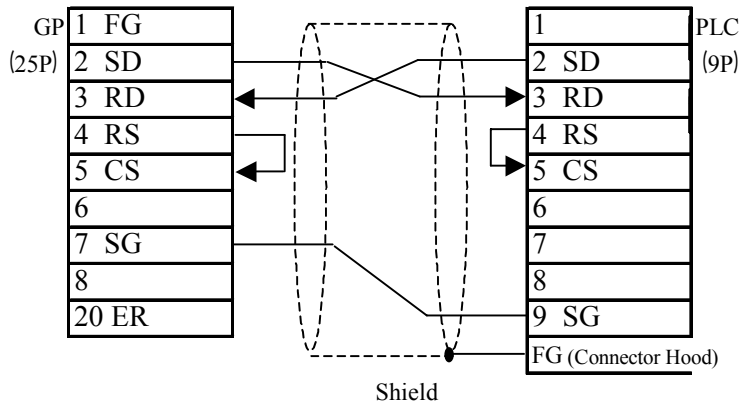
*1 The default values of transmission condition settings are as below.
Change the baud rate to 19200bps on the ladder software, etc.

- Baud Rate: 9600bps
- Stop Bit: 2 Bits
- Parity Bit: Even
- Data Length: 7 Bits

Connection Method

1. RS-232C Connection

[Link I/F on CPU Unit (Host Link Port) / CV500-LK201 (COM Port2)]

Type	Connection Method	Distance
Creating Cable		Within 15m

NOTE 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

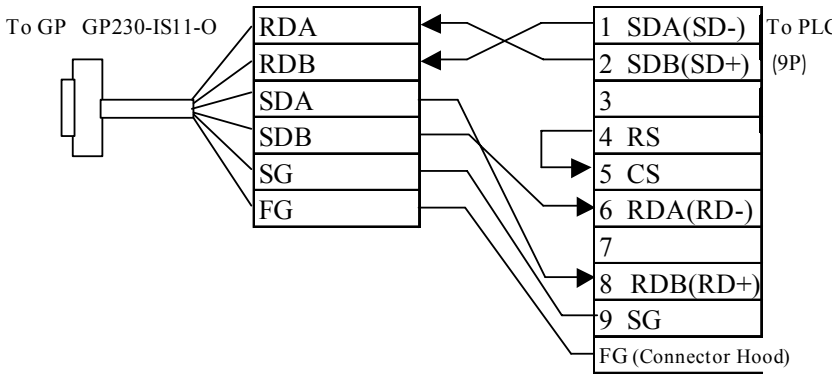
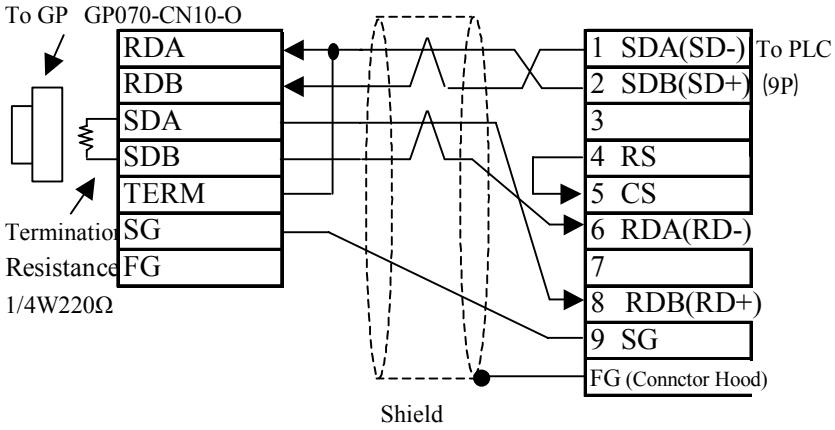
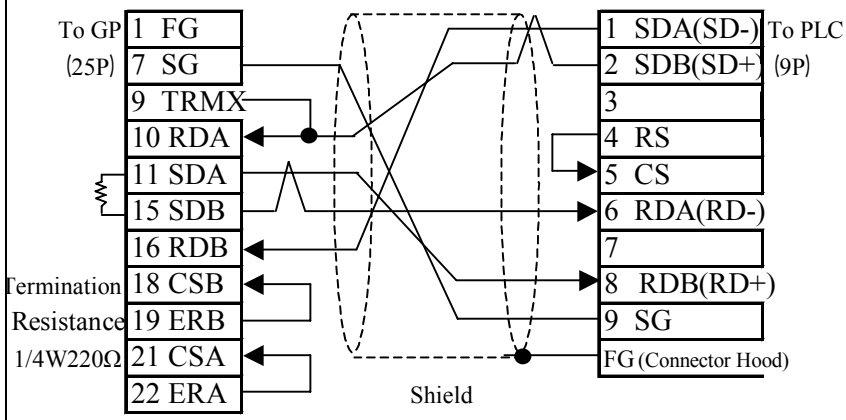
Connector Hood XM2S-0901

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	CO-MA-VV-SB5P × 28AWG <Hitachi Cable Ltd.>	
Setscrew	Metric Coarse Screw Tread : M2.6 × 0.45	

2. RS-422 Communication

[Link I/F on CPU Unit (Host Link Port) / CV500-LK201 (COM Port 2)]

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

*** Set the RS232-C/422 switch on the PLC to RS-422.**

*** 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

* 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

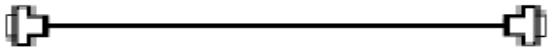
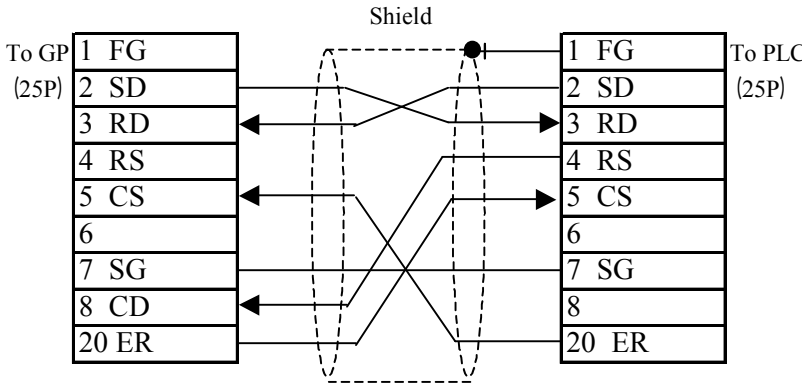
* When connecting the #9 and #10 pin on the GP Serial I/F, a termination resistance of 100Ω is added between RDA and RDB.

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 Communication

[CV500-LK201 (COM Port 1)]

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

NOTE The option cable GP410-IS00-O is 5m long. If you need a longer or shorter cable for connection, please create a cable.

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	