

OMRON Corporation PLC

SYSMAC CJ Series Connection

Selecting PLC Type

Start up GP-PRO /PBIII.

Select the following PLC Type when creating the project file.



Communication Setting Sample

■ SYSMAC CS1/CJ/CJ1M Series < RS-232C Port on CPU Unit>

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		
Unit No.	0	Station No.	0
		Dip Switch	SW1: OFF SW5: OFF SW7: OFF SW8: OFF
		Mode Setup	Host Link

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 (Using RS-232C)	RS-232C			
Communication Format (Using RS-422)	4-Wire Type	WIRE (2-Wire/ 4-Wire Type Switch)	4-Wire Type	
		TERM (Termination Resistance Switch)	Termination Resistance ON	
Unit No.	0	Host Link Station No.	0	
		Serial Communication Mode	Host Link	
		Communication Delay Time	0	
		CTS Control	None	

■ SYSMAC CS1/CJ/CJ1M Series <Communication Board/Unit>

■ SYSMAC CS1/CJ/CJ1M Series <Peripheral Port on CPU Unit>

GP Se	etup	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		
Unit No.	0	Station No.	0
		Dip Switch	SW1: OFF SW4: ON SW7: OFF SW8: OFF
		Mode Setup	Host Link



Communication Settings [GP]

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

Select [GP Setup] on Project Manager.

1) Communication Settings	1) Communication Settings
GP Statings (A) Settings Mixed Settings GP Statings (A) Settings Conversion Speed F 195-2320 Transmission Speed 15200 A Live Parky B# Sectings Other copin Conversion Speed 15200 Parky B# None Conversion Speed 15200 Other copin Conversion Speed 15200 Conversion Speed Parky B# None Conversion Speed Second # ODE Difference Other copin Difference Second # ODE ODE Difference Difference Difference	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
GP Settings + sangdal gove Initial Sectors Settings Initial Sectors Initi	System Start Address: Arbitrary Address Machine Number: 0 Link Protocol Type: 1:1
OK. Carcel Defaults Help	



Select [Transfer]> [Setup] -	> [Transfer Settings].
3) Transfer Settings	
-	
Transfer Settings Send Information	Communications Port
GP System Screen	© COM
Fjing Data(CF card) Data Trans Func CSV Data(CF card)	Comm Port COM1 Retry Count 5
	Baud Rate 115.2K (bps)
Transfer Method	© <u>E</u> themet
Send All Screens	IP Address 0. 0. 0. 0 Port 8000
Automatically Send Changed Screens Gend User Selected Screens	C Ethernet: Auto Acquistion
	C Memory Loader
Transfer Mode	
Preparation for a transfer and a transfer are made simultan It is transferred after preparation for a transfer is finished.	eous.
Setup C Automatic Setup Use Extended	led Program :
C Force System Setup Simula	tion
	l Screen
Setup CFG file :	
O Japanese	
C:\Program Files\pro-face\ProPBWin\pro	blocoli Browse
OK	Cancel Help
2) Transfer Settings CD System Setting	re: Chaolrad
<u>3) Transfer Settings</u> GP System Setting	s. 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
MAIN MENU *03/00/00 00:00 1 INITIALIZE	If you have selected OMRON SYSMAC - CS1 Series, following will be shown.
SELF-DIAGNOSIS	"SYSMAC-CS1"
2₩av2000 V4.10 SYSMAC-CS1 V1.44	

2) Communication Settings	2) Communication Settings
MAIN MENU INITIALIZE SET UP SIO 2 SET UP FRINTER 3 SET UP TOUCH PANEL 4 COMMUNICATION SETUP 5 SOUND SETTINGS	$[MAIN MENU] \downarrow [INITIALIZE] \downarrow [SET UP I/O] \downarrow [SET UP SIO]$
SET UP SI0 SET CANCEL COMMUNICATION RATE 2400 4800 9600 19200 38400 57600 115200 DATA LENGTH 2 8 38400 57600 115200 DATA LENGTH 2 8 3700 BIT 1 2 PARITY OFF 000 EUPP 000 OMMUNICATION FORMAT R5232C 4 LINE 2 LINE 1 2 3 4 5 6 7 8 9 1 4 85	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 SYSTEM ENVIRONMENT SETUP SET UP 1/0 3 PLC SETUP 4 INITIALIZE MEMORY 5 SET UP TIME 6 SET UP SCREEN	$[MAIN MENU] \downarrow [INITIALIZE] \downarrow [PLC SETUP] ↓ [PLC SETUP]$
SET UP OPERATION SURROUNDINGS MENU 1:1 n:1 1 SET UP OPERATION SURROUNDINGS	SET UP OPERATION SURROUNDINGS MENU: 1:1
SET UP OPERATION SURROUNDINGS STARTING ADDRESS OF SYSTEM DATA AREA [000000] UNIT NO. [0] SYSTEM AREA READING AREA SIZE (0-256) [0] RESET GP ON DATA HRITE ERROR ON OFF 1 2 3 4 5 8 7 8 8 0 1 4 85 CANCEL	Starting Address of System Data Area: Arbitrary Address Unit No.: 0



Communication Settings [PLC]

Set the communication settings of each structure by using the OMRON ladder software CX-Programmer.

To communicate the ladder software to the PLC, first of all, set the dipswitches SW4 and SW5 on the front of the CPU unit to the transmission conditions, which are suitable for the environment.

Switch No.	Setting	Detail	
SW1	ON	Disables to write in User Memory (UM)	
	OFF	Enables to write in User Memory (UM)	
SW2	ON	Executes automatic transfer at startup	
	OFF	Not execute automatic transfer at startup	
S	W3	Unused	
SW4		Transmission Condition of Peripheral Port:	
	ON	* Available with CX-Programmer by other connection than tool bus	
		* Available with other programs than CX-Programmer	
	OFF	Transmission Condition of Peripheral Port:	
	OFF	* Available with CX-Programmer by tool bus	
SW5	ON	Transmission Condition of RS-232C Port:	
	ON	* Available with CX-Programmer by tool bus	
	Transmission Condition of RS-232C Port:		
	OFF	* Available with CX-Programmer by other connection than tool bus	
		* Available with other programs than CX-Programmer	
SW6		Dipswitch for Customizing	
	ON	The state of this dipswitch is reflected on the special auxiliary relay	
		A39512 (Dipswitch 6 State Flag) and it turns ON.	
		Dipswitch for Customizing	
	OFF	The state of this dipswitch is reflected on the special auxiliary relay	
		A39512 (Dipswitch 6 State Flag) and it turns OFF.	
SW7	OFF	Specifying a Type of Simple Backup Operation	
S	W8	Always OFF	

1. [Transmission Condition Settings by Dipswitch]

* To communicate with the GP, set SW4 ON and SW5 OFF.

You can also communicate with the GP when other switches are set to default value (OFF) or



ON. However, when the memory card is not inserted, set SW2 to OFF. If you set it ON, you cannot communicate with the GP. A host communication error (02:00:80) will occur on the GP.

- 2. [Transmission Settings by CX-Programmer]
- 2-1 Settings of Peripheral Port on CPU Unit

To set the transmission settings of the peripheral port on the CPU unit, follow the procedures below.

Start up the ladder tool, CX-Programmer. Double-click [Settings] to execute.



Select the [Peripheral Port] tab on the [PLC Settings] dialog box and set the items as below.

🐨 PLC Settings - NewPLC1	
<u>File</u> <u>O</u> ptions <u>H</u> elp	
Startup Settings Timings SIOU Refresh Unit Settings Host Link Port Periph	eral Port
Communication Settings C Standard (9600 ; 7.2,E)	
Custom Baud Format I 19200 ▼ 7.2.E ▼ Host	Mode Link
Unit Number NT Link	K Max
	Set Host Link
	for Mode.
	CS1G-CPU42 Offline



2-2 Settings of RS-232C Port on CPU Unit

To set the transmission settings of the RS-232C port on the CPU unit, follow the procedures below.

Start up the ladder tool, CX-Programmer. Double-click [Settings] to execute.



Select the [Host Link] tab on the [PLC Settings] dialog box and set the items as below.

🐨 PLC Settings - NewPLC1					
<u>F</u> ile <u>O</u> ptions <u>H</u> elp					
Startup Settings Timings SIOU R	efresh Unit Setti	ngs Host Link Port	Peripheral Port		
Communication Settings					
Standard (9600 ; 1,7,2,E)					
Custom Baud	Format	Mode			
19200 💌	7,2,E 💌	Host Link	▼		
Start Code	End Code				
Disable	Received B	Bytes 256 🕂			
C Set 0x0000 🛨	C ORLF				
	C Set End Co	ode 0x0000 🛨		G • H	X
- Unit Number	Delay		-NT/PC	Set Host	Link
0 +	0	*10 ms		for Mode.	
, 1	· ·				
P					
			CST	IG-CPU42	Offline

2-3 Settings of COM Port 1 and COM Port 2 on Serial Communication Unit

To set the transmission settings of the serial communication unit, follow the procedures below.

The settings of COM Port 1 are for RS422, and those of COM Port 2 are for RS-232C.

< Settings of RS422 Port on Serial Communication Unit>

Pro-face[®]

Double-click [IO Table] to open the [PLC IO Table] window. Right-click the assigned serial communication unit and select [Software Switches].

PLC IO Table	- NewPLC1
<u>F</u> ile <u>O</u> ptions <u>H</u> elp	
CS1G/CJ1G	
🖻 🔩 [0000] Main	
	32pt Unit + 48pt Unit + 64pt Unit + 96pt Unit + 128pt Unit + 128pt Unit + C200H High Speed Counter Unit (C) + C200H Numerical Control Unit (N) + SIOU/C200H ASCII Unit (A) + SYSMAC BUS Master + SYSMAC LINK Unit (SL) + Interrupt Unit (8 Bit) + Interrupt Unit (16 Bit) +
	MP920 I/F Unit (YE)
	Software Switches Unit Setup Unit Manufacturing information C200H SIOU Setup Hot Swap
	Delete



Select the [Port1] tab on the [Serial Communication Unit Software Switch] setting window.

Set the items as below.

Serial	Serial Communication Unit Software Switches 🔹 👔								? ×
<u>F</u> ile	<u>O</u> ptions	<u>H</u> elp							
Gene	eral Port1	Port2							
	T Defau	Baud 19200	ettings Format	▼ Host Delay 0	Mode Link X10r	ns	CS Control © Disable © Enable Set Host for Mode		
							CS1G/CJ1G-	CPU45	Monitor

* For RS-422 communication, set the 2-wire/4-wire type switch on the serial communication unit to 4-wire. The GP does not support the 2-wire type. Also, the termination resistance on the PLC can be added by turning the termination resistance switch ON. Please set it ON.

< Settings of RS-232C Port on Serial Communication Unit>

Double-click [IO Table] to open the [PLC IO Table] window. Right-click the assigned serial communication unit and select [Software Switches].

PLC IO Table	- NewPLC1
	Rack Serial Communications Unit (SC) (0) 8pt Unit • 16pt Unit • 32pt Unit • 48pt Unit • 64pt Unit • 96pt Unit • 128pt Unit • C200H High Speed Counter Unit (C) • C200H Numerical Control Unit (N) • SIOU/C200H ASCII Unit (A) •
	SIDU/C200H ASCII Unit (A) SYSMAC BUS Master SYSMAC LINK Unit (SL) Interrupt Unit (8 Bit) Interrupt Unit (16 Bit) Controller Link Unit (NS) Ethernet Unit (ET) PC Link Unit LK401 Loop Controller (LC) CompoBus/D Master Unit (DN) ONC/CS1 Bus IF (01) FL-Net Unit (FL) PLK Unit (PP) High Function MC Unit (HM)
	MP920 I/F Unit (YE) Software Switches Unit Setup Unit Manufacturing information C200H SIOU Setup Hot Swap Delete



Select the [Port2] tab on the [Serial Communication Unit Software Switches] setting window.

Set the items as below.

Serial Communication Unit Software Switches 🛛 😯 🔊							
<u>File Options H</u> elp	- diffe						
General Port1 Port2							
CS Control Default Baud Format Mode 19200 I.7.2,E Host Link Unit No. Delay 0 I X10ms Set Host Link for Mode.	Link Max						
CS1G/CJ1G-CPU45	i Monitor						

NOTE

Details that you have set on CX-Programmer or Programming Console will be reflected in the allocated DM Area. On the other way, when you change the settings of the allocated DM Area, the communication settings on CX-Programmer or Programming Console will be changed.



Settings of the software switch of the serial communication unit can be set only when the PLC and the PC are online. Please get the PLC and the PC online to make the settings.



3. [Writing from CX-Programmer to PLC]

To write data from CX-Programmer to the PLC, you need to get the communication between the PC and the PLC online.

Select [PLC] \rightarrow [Work Online] to get the communication between the PC and the PLC online.





Next, double-click [Settings] to open the window, and select [Options] \rightarrow [Transfer to PLC].

🐨 Pi	🐨 PLC Settings - NewPLC1								
<u>F</u> ile	Options <u>H</u> elp								
Sta	Always On <u>T</u> op <u>S</u> et Defaults	SIOU Refresh Unit Settings Host Link Port Peripheral Port							
	Transfer to <u>P</u> LC Trans <u>f</u> er from PLC Verify	loid Mode							
	Write Protection	Status Hold Bit	C Program C Monitor						
	<u>D</u> uplex Settings		C Run © Use programming console						
Transf	Transfer the settings to the PLC Offline OS1G/CJ1G-CPU45 Offline								

The checking items of the selected contents will be shown, and click [Yes] and write the set parameter information to the PLC.

When writing is completed, turn OFF the PLC and start it up again.