

# OMRON Corporation PLC

SYSMAC CS1 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 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	ty Bit Even		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	



Setu	р	PLC Setu	ıp
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/ 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.	
Select [Ch Settings       1) Communication Settings       Image: I	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
Cancel Defeads Help	* Select one in .
2) Mode Settings	2) Mode Settings
OK     Oxford     Oxford     Media	System Start Address: Arbitrary Address Machine Number: 0 Link Protocol Type: 1:1



ransfer Settings - Send Information	Communications Port
Upload Information     GP System Screen	. сом
Filing Data(UF card)	Comm Port COM1 Retry Count 5
Data Trans Func CSV Data(CF card)	Baud Rate 115.2K 💌 (bps)
	C Ethernet
Transfer Method     Send All Screens	IP Address 0. 0. 0. Port 8000
Automatically Send Changed Screens     Send User Selected Screens	C Ethernet: Auto Acquistion
C Send User Selected Screens	Memory Loader
C Force System Setup	Extended Program : Simulation System Screen
er Settings GP System Set	tings: Checked

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

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 1 INITIALIZE 2 SCREEN DATA TRANSFER	If you have selected OMRON SYSMAC-CS1 Series, following will be shown.
SELF-DIAGNOSIS	"SYSMAC-CS1"
2002/2000 V4-10 SYSMAC-CST V1-44	

2) Communication Settings	2) Communication Settings
MAIN MENU	[MAIN MENU]
INITIALIZE	↓
SET UP SIO	[INITIALIZE]
2 SET UP FRINTER	↓
3 SET UP TOUCH PANEL	[SET UP I/O]
4 COMMANICATION SETUP	↓
5 SOUND SETTINGS	[SET UP SIO]
SET UP SI0	Communication Rate: 19200bps
COMMUNICATION RATE 2400 4800 9600 19200 38400 57600 115200	Data Length: 7 Bits
DATA LENSTH 2 8	Stop Bit: 2 Bits
STOP BIT 1 2	Parity: Even
PARITY OFF 000 EUP	Control: ER Cntrl
CONTROL X-CNTRL	Communication Format
COMMUNICATION FORMAT RS232C 4 LINE 2 LINE	RS-232C Connection: RS-232C
1 2 3 4 5 6 7 8 9 0 1 4 BS	RS-422 Connection: 4 Line
COMMUNICATION FORMAT	* Select one in .



3) Setting up Operation Surroundings	3) Setting up Operation Surroundings			
MAIN MENU INITIALIZE 1 SYSTEM ENVIRONMENT SETUP 2 SET UP LAD 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 6 7 8 8 0 1 1 4 BS	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.

ile <u>O</u> ptions <u>H</u>		s Ì SIOLI Refre	sh Ì Unit Settings	Í Hast Link Port	Peripheral Port	Peripheral Service	
	Communication	Settings (9600 ; 7,2,E) Baud	Format 7,2,E	• Ho	Mode ost Link		Link



#### 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.

Revealed the settings - NewPLC1			
<u>File Options H</u> elp			
Startup CPU Settings   Timings   SIOL Communication Settings C Standard (9600 : 1.7.2.E) C Standard (9600 : 1.7.2.E) Dustom Baud F 19200 T 7.2	Format Mode	Port   Peripheral Port   Peripheral Ser	vice
Start Code	End Code © Received Bytes 256 © CRUF © Set End Code 0x0000		Link
Unit Number	Delay	for Mode.	
		CS1G-H-CPU42	Offline



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

If you use CS1W-SCB41, the settings of COM Port 1 are for RS-232C, and those of COM Port 2 are for RS-422.

If you use CS1W-SCU21/SCB21, refer to the settings of COM Port 1 since both COM Port 1 and COM Port 2 are for RS-232C Communication.

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

o-face

Double-click [IO Table] to open the [PLC IO Table] window.

CPU types of the PLC to use will be shown. Select a CPU type and right-click it to select [Inner Board Software Switches].





Select the [Port 1] tab on the [Inner Board Software Switches] setting window. Set the items as below.

Seria	Communic	ation Un	it Software Swi	tches				? ×
<u>F</u> ile	<u>O</u> ptions	<u>H</u> elp						
Gen	eral Port1	Port2						
	Commun	lt Baud 	ettings Format	V Host Delay 0	 T 10ms	CS Control Disable Enable Set Host for Mode.	Link	
						CS1G-H-CPU	42	Monitor



< Settings of RS-422 Port on Serial Communication Unit>

Double-click [IO Table] to open the [PLC IO Table] window.

CPU types of the PLC to use will be shown. Select a CPU type and right-click it to select [Inner Board Software Switches].





Select the [Port 2] tab on the [Inner Board Software Switches] setting window. Set the items as below.

Serial	Communic	cation Uni	t Software Swit	ches					? ×
<u>F</u> ile	<u>O</u> ptions	<u>H</u> elp							
Gen	eral   Port1	Port2							
	Commur Defau	Baud 19200	Format	▼ Host Delay 0	Mode Link 2 x10	_(	CS Control Disable Enable Set Host I for Mode.	Ink	
							CS1G-H-CPL	J42	Monitor

\* For RS-422 communication, set the 2-wire/4-wire type switch on the serial communication unit with 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.

## 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 inner board software switch 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].

📲 PL	.C Settin	gs - NewPLC1		
Eile	Options	<u>H</u> elp		
Sta	<u>S</u> et De Transf Transf <u>V</u> erify	s On <u>T</u> op efaults fer to <u>PLC</u> fer from PLC Protection	nings SIOU Refresh Unit Settings Host Link Port Peripheral Port Periphe tion Settings and (9600 : 7.2,E) m Baud Format Mode 9600 Y 7.2,E Host Link Y	ral Service
		< Settings	Unit Number	
Transl	fer the sel	ttings to the PL	c	PU42

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.