SANGJI Precision

V1.4.2 or higher

SJ Series

SJB RS-232C

Supported version TOP Design Studio



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Describes the cable specifications required for connection.

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Refer to this section to check the addresses which can communicate with an external device.



1. System configuration

The system configuration of TOP and "Sangji Precision Co., Ltd. - SJB RS232C" is as follows:

Series	CPU	Link I/F	Communication method	System setting	Cable
SJ Series	SJB RS232C	Port on CPU unit	RS-232C	3.1 Settings example	5.1. Cable table

Connection configuration

• 1:1 (one TOP and one external device) connection – configuration which is possible in RS232C communication.

|--|--|



2. External device selection

Select a TOP model and a port, and then select an external device.

elect Device							
PLC select [CO	M21						
Filter : [All]			\sim		Search :	Sand	
Long (Del					bearen	O Model	Vendor
Vendor		Model					
SANGJI Precision Co., Lt	J.	80	SANGJI S	18			
			SANGJI S.	חו			
			SANGSI S.				
				4 0 1	-	Next	
				Back	-	Next	X Cancel
elect Device							
PLC Setting[SANG							
Alias Name :							
	CPU Direct		\sim				
	SJ PROTOCOL		\sim			Cor	nm Manual
String Save Mode :	First LH HL	Cha	inge				
Use Redundance	v						
Operate Condition :							
Change Condition :	TimeOut	5	(Second)			
	Condition					E	dit
Primary Option							
Timeout	300 🚔	msec					
Send Wait	-	msec					
	5						
Retry							
Retry							
Retry							
Ketry							
кету							
Ketry							
Ketry							
Retry							

Settings		Contents					
ТОР	Model	Check the TOP display a	Check the TOP display and process to select the touch model.				
External device	Vendor		Select the vendor of the external device to be connected to TOP. Select " Sangji Precision Co., Ltd. "				
	PLC	Select an external device	Select an external device to connect to TOP.				
		Model	Interface	Protocol			
		SJB_RS232	CPU Direct	Sj protocol			
		Please check the system configuration in Chapter 1 to see if the external device you want to connect is a model whose system can be configured.					



3. TOP communication setting

The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

3.1 Communication setting in TOP Design Studio

(1) Communication interface setting

- [Project > Project Property > TOP Setting] → [Project Option > "Use HMI Setup" Check > Edit > Serial]
 - Set the TOP communication interface in TOP Design Studio.

Project Option Change HMI(H) Change HMI(H) Copton Nodule Setting Copton Nodule Setting Fill (0) Copton CoM1 (0) Com (0) Com (0) Com (1) C	Date / Time Sync. Screen () Project Ontion Screen Char Use HMI Setup Hm Setup Option Project Setting	Delete PLC(D) Option Unit Convert nge HmiSetup Global Lock & Tor	uch Project Style Splash	PI C Buffer Sync.
Control Panel	HMDIsable=0 Project Name 통신에 뉴일 접자용 Start Mode=Nenu Start Screen No. = 1 Lath Use=0 Lath Set=0-0 Communication Error Message=0 USBErrorMassage=0 StorsauScreetMassage=1	파일		
🔯 System	🚾 Devices	Service	📑 Option	
	Interface	CTI(SANGJI SJB) → COM SCPU Direct → SJ PROTOCOL → (ms) 300	2 -	
Diagnostic	File Kanager	ic	Cancel	Apply

Items	ТОР	External device	Remarks
Signal Level (port)	RS-232C	RS-232C	
Baud Rate	9600		
Data Bit	8		
Stop Bit	top Bit 1		
Parity Bit			

* The above settings are examples recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device.
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.



(2) Communication option setting

- [Project > Project Property > Device Setting > COM > "PLC1 : SANGJI SJB"]
 - Set the options of the FP Series Computer Link communication driver in TOP Design Studio.

Project Option		×
Change HMI[H] Change PLC[C] Call Change PLC[C]		
PLC Setting SANGJI SJB] Image: Signal status Ima		mm Manual
	Apply	Close

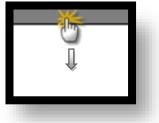
Items	Settings	Remarks
Interface	Select "CPU Direct".	Refer to "2. External
Protocol	Select the serial communication protocol between the TOP and an external device.	device selection".
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device	
	and sending the next command request.	



3.2. Communication setting in TOP

* This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.

■ Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.



(1) Communication interface setting

■ [Main Screen > Control Panel > Serial]



Items	ТОР	External device	Remarks
Signal Level (port)	RS-232C	RS-232C	
Baud Rate	9600		
Data Bit	8		
Stop Bit	1		
Parity Bit	none		

* The above settings are setting examples recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device.
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.



(2) Communication option setting

■ [Main Screen > Control Panel > PLC]

	6	1001	PLC		×
Run	🔯 Syste	Driver(COM2) Interface	PLC1(SANGJI SJB) -		
	PLC	Protocol Timeout	SJ PROTOCOL		
VNC Viewer	6	Send Wait Retry	0 msec 5		
	Et hernet	-			
Screen shot	inili ^{~/*}				
	Diagnostic				
	[System]	Diagnostic		Apply Canc	el
ltems	Settings				Remarks

Items	Settings	Remarks
Interface	Select "Computer Link".	Refer to "2. External
Protocol	Select the serial communication protocol between the TOP and an external device.	device selection".
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device and	
	sending the next command request.	



3.3 Communication diagnostics

■ Check the interface setting status between the TOP and external device.

- Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.
- Check if the COM port settings you want to use in [Control Panel > Serial] are the same as those of the external device.
- Diagnosis of whether the port communication is normal or not
- Touch "Communication diagnostics" in [Control Panel > PLC].
- The Diagnostics dialog box pops up on the screen and determines the diagnostic status.

ОК	Communication setting normal
Time Out Error	Communication setting abnormal
	- Check the cable, TOP, and external device setting status. (Reference: Communication diagnostics sheet)

■ Communication diagnostics sheet

- If there is a problem with the communication connection with an external terminal, please check the settings in the sheet below.

ltems	Contents		Check		Remarks	
System	How to connect the system		OK	NG	1 Contains and firmunation	
configuration	Connection cable nam	ОК	NG	1. System configuration		
ТОР	Version information	ОК	NG			
	Port in use	OK	NG			
	Driver name	OK	NG			
	Other detailed settings	5	ОК	NG		
	Relative prefix	Project setting	OK	NG		
		Communication diagnostics	ОК	NG	2. External device selection 3. Communication setting	
	Serial Parameter	Transmission Speed	ОК	NG		
		Data Bit	ОК	NG		
		Stop Bit	OK	NG		
		Parity Bit	OK	NG		
External device	CPU name		OK	NG		
	Communication port n	ОК	NG			
	Protocol (mode)	ОК	NG			
	Setup Prefix	ОК	NG			
	Other detailed settings		ОК	NG	4. Estemat device estimat	
	Serial Parameter	Transmission Speed	ОК	NG	4. External device setting	
		Data Bit	ОК	NG		
		Stop Bit	ОК	NG		
		Parity Bit	OK	NG		
	Check address range				6. Supported addresses	
			ОК	NG	(For details, please refer to the PLC vendor's manual.)	



Refer to the vendor's user manual to identically configure the communication settings of the external device to that of the TOP.



5. Cable table

This chapter introduces a cable diagram for normal communication between the TOP and the corresponding device. (The cable diagram described in this section may differ from the recommendations of "Sangji Precision Co., Ltd.")

5.1. Cable table 1

■ RS-232C (1:1 co	nnection)						
ТОР				External device			
Pin	Signal	Pin	Cable connection	Pin	Signal	Din errengementer (
arrangement*Note 1)	name	number		number	name	Pin arrangement*Note 1)	
<u>1 5</u>	CD	1		9	SG		
$\begin{pmatrix} \circ & \circ \end{pmatrix}$	RD	2		2	TXD		
6 9	SD	3		3	RXD		
Based on	DTR	4		5	SG		
communication	SG	5			DSR		
cable connector	DSR	6	•	7	CTS		
front,	RTS	7	↓	8	RTS		
D-SUB 9 Pin male	CTS	8			-		
(male, convex)		9					

*Note 1) The pin arrangement is as seen from the connecting side of the cable connection connector.



6. Supported addresses

The devices available in TOP are as follows:

The device range (address) may differ depending on the CPU module series/type. The TOP series supports the maximum address range used by the external device series. Please refer to each CPU module user manual and be take caution to not deviate from the address range supported by the device you want to use.

Contents	Bit Address	Word Address	32 Bit	Remarks
М	0.0 – 799.31	0 – 799	0	
Р	0.0 – 799.31	0 – 799	0	
VA	0.0 – 799.31	0 – 799	0	
VB	0.0 – 799.31	0 – 799	0	
VC	0.0 – 799.31	0 – 799	0	
VD	0.0 – 799.31	0 – 799	0	