# **SPEEDTECH**

# **PUI-2000 Series**

Supported version TOP Design Studio

V4.0 or higher



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We want to thank our customers who use the Touch Operation Panel.

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Describes the devices required for connection, the setting of each device, cables, and configurable systems.

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Describes how to set the TOP communication.

## **4.** External device setting

**3.** TOP communication setting

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Describes how to set up communication for external devices.

## 5. Cable table

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Describes the cable specifications required for connection.

### 6. Supported addresses

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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 "SPEEDTECH" is as follows:

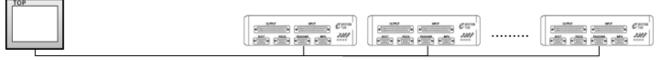
Series	CPU	Link I/F	Communication method	System setting	Cable
	RS422 Port	RS-232	3.1 Settings example 1 (Page 4)	<u>5.1. Cable table 1</u> (Page 11)	
PUI	2000 Series	on CPU unit	RS-422,485	<u>3.2 Settings example 2</u> (Page 6)	<u>5.2. Cable table 2</u> (Page 12)

■ Connection configuration

• 1:1 (one TOP and one external device) connection – configuration which is possible in RS232C/422 communication.

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		C 11.00

• 1:N (one TOP and multiple external devices) connection – configuration which is possible in RS422 communication.





## 2. External device selection

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

Select Device						x
PLC select [C	ОМ2]					
Filter : [All]			$\sim$	5	Search : PU	
					Mo	odel 🔿 Vendor
Vendor OTHERS Manufacture		Model				
OTHERS Manufacture			SPEEDTECH	: PUI-2000 Se	ries	
		1				
				Back	🔷 Next	X Cancel
Select Device						×
PLC Setting[ SPEE		2000 60	rioc 1			×
Select Device PLC Setting[ SPEE Alias Name		2000 Sei	ries ]			×
PLC Setting[ SPEE Alias Name			ries ] 			x
PLC Setting[ SPEE Alias Name Interface	: PLC1					x Comm Manual
PLC Setting[ SPEE Alias Name Interface	: PLC1 : Computer Link : Computer Link		~			
PLC Setting[ SPEE Alias Name Interface Protocol	: PLC1 : Computer Link : Computer Link : First LH HL		~			
PLC Setting[ SPEE Alias Name Interface Protocol String Save Mode	: PLC1 : Computer Link : Computer Link : First LH HL	Chan	v v ge			
PLC Setting[SPEE Alias Name Interface Protocol String Save Mode	: PLC1 : Computer Link : Computer Link : First LH HL : First LH HL CY ND ~ TimeOut	Chan	~			Comm Manual
PLC Setting[SPEE Alias Name Interface Protocol String Save Mode	: PLC1 : Computer Link : Computer Link : First LH HL CY	Chan	v v ge			
PLC Setting[SPEE Alias Name Interface Protocol String Save Mode	: PLC1 : Computer Link : Computer Link : First LH HL : First LH HL CY ND ~ TimeOut	Chan	v v ge			Comm Manual
PLC Setting[ SPEE Alias Name Interface Protocol String Save Mode Use Redundam Operate Condition : Change Condition :	: PLC1 : Computer Link : Computer Link : First LH HL CY ND CIMEOUT	Chan	v v ge			Comm Manual
PLC Setting[SPEI Alias Name Interface Protocol String Save Mode	: PLC1 : Computer Link : Computer Link : First LH HL CY ND Condition 300	Chan 5 ¢	v v ge			Comm Manual
PLC Setting [SPEE Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : Change Condition : Primary Option Timeout Send Wait	: PLC1 : Computer Link : Computer Link : First LH HL CY TimeOut Condition 300	Chan 5	v v ge			Comm Manual
PLC Setting[SPEE Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : Change Condition : Timeout Send Wait Retry	: PLC1 : Computer Link : Computer Link : First LH HL CY TimeOut Condition 300 5 5 5 5 5 5 5 5 5 5 5 5 5	Chan 5 ¢	v v ge			Comm Manual
PLC Setting[SPEE Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : Change Condition : Change Condition : Timeout Send Wait Retry Bus address	PLC1 Computer Link Computer Link First LH HL CV TimeOut S00 S S C Condition	Chan 5 ¢	v v ge			Comm Manual
PLC Setting[SPEE Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : Change Condition : Timeout Send Wait Retry	: PLC1 : Computer Link : Computer Link : First LH HL CY TimeOut Condition 300 5 5 5 5 5 5 5 5 5 5 5 5 5	Chan 5 ¢	v v ge			Comm Manual
PLC Setting[SPEE Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : Change Condition : Change Condition : Timeout Send Wait Retry Bus address	PLC1 Computer Link Computer Link First LH HL CV TimeOut S00 S S C Condition	Chan 5 ¢	<ul><li>✓</li><li>✓</li><li>ge</li></ul>			Comm Manual
PLC Setting[SPEE Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : Change Condition : Change Condition : Timeout Send Wait Retry Bus address	PLC1 Computer Link Computer Link First LH HL CV TimeOut S00 S S C Condition	Chan 5 ¢	<ul><li>✓</li><li>✓</li><li>ge</li></ul>			Comm Manual
PLC Setting[SPEE Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : Change Condition : Change Condition : Timeout Send Wait Retry Bus address	PLC1 Computer Link Computer Link First LH HL CV TimeOut S00 S S C Condition	Chan 5 ¢	<ul><li>✓</li><li>✓</li><li>ge</li></ul>			Comm Manual
PLC Setting[SPEE Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : Change Condition : Change Condition : Timeout Send Wait Retry Bus address	PLC1 Computer Link Computer Link First LH HL CV TimeOut S00 S S C Condition	Chan 5 ¢	<ul><li>✓</li><li>✓</li><li>ge</li></ul>			Comm Manual

Settings		Contents
TOP-R	Model	Check the TOP-R display and process to select the touch model.
External device	Vendor	Select the vendor of the external device to be connected to TOP-R. Select "SPEEDTECH".
	PLC	Select an external device to connect to TOP-R. Select "PUI - 2000 <u>Series"</u> . 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.



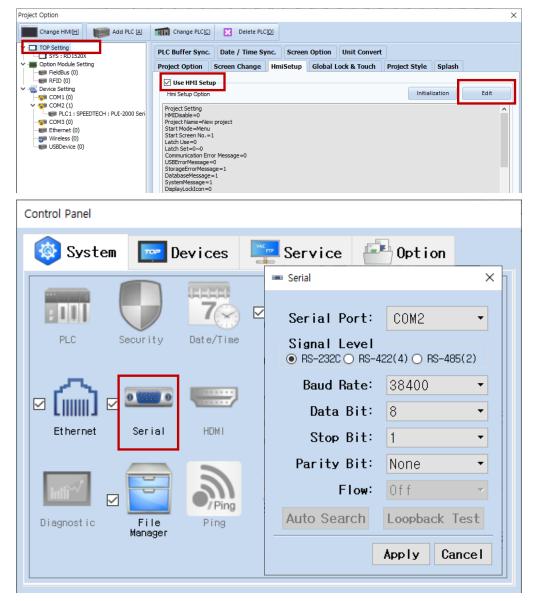
## 3. TOP-R Communication setting

The communication can be set in TOP Design Studio or TOP-R 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-R Design Studio.



Items	TOP-R	External device	Remarks
Signal Level (port)	RS-232C/RS-485	RS-232C/RS-485	
Baud Rate	384	00	
Data Bit	8		
Stop Bit	1		
Parity Bit	NO	NE	

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

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



#### (2) Communication option setting

- [ Project > Project Property > Device Setting > COM > "PLC1 : <u>PUI 2000 Series</u>"]
  - Set the options of the SPEEDTECH communication driver in TOP Design Studio.

Project Option		×
Change HMI[H] Change PLC[C] X Delete PLC[D]		
Change HMILI Change HMILI Cooption Module Setting Field Bus (0) Control (0) Control (0) Control (1) Control (1) Co		nm Manual
	Apply	Close

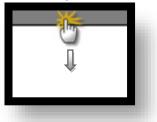
Items	Settings	Remarks
Interface	"Computer Link	Fired
Protocol	Computer Link	Fixed
TimeOut (ms)	Set the time for the TOP-R to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP-R's receiving a response from an external device and	
	sending the next command request.	
Retry	Retry attempts upon communication failure.	



#### 3.2. Communication setting in TOP-R

\* 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-R 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	TOP-R	External device	Remarks
Signal Level (port)	RS-232C/RS-485	RS-232C/RS-485	
Baud Rate	384	00	
Data Bit	8		
Stop Bit	1		
Parity Bit	NOI	NE	

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

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



### (2) Communication option setting

■ [Main Screen > Control Panel > PLC]

$\frown$				
	<del>ن</del> ه	1001	PLC	×
	🔯 System	Driver(COM2)	PLC1(SPEEDTECH : PUI-2000 Series) -	
Run		Interface	Computer Link 💌	
		Protocol	Computer Link 💌	
MNC	PLC	Timeout	300 🗭 msec	
VNC		Send Wait	0 🖨 msec	
Viewer		Retry	5	
	Ethernet	Bus addre	0	
		CRC	4Byte -	
Screen shot	mont			
SIUC	Diagnostic			
	[System]	Diagnostic	Apply	Cancel
	Settings			Remarks

Items	Settings	Remarks
Interface	"Computer Link	Fired
Protocol	Modbus Rtu	Fixed
TimeOut (ms)	Set the time for the TOP-R to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP-R's receiving a response from an external device and	
	sending the next command request.	



#### **3.3 Communication diagnostics**

■ 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-R, 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		ОК	NG	1. Contene configure the	
configuration	Connection cable nan	ne	ОК	NG	1. System configuration	
TOP-R	Version information	ОК	NG			
	Port in use		ОК	NG		
	Driver name	ОК	NG			
	Other detailed setting	IS	ОК	NG		
	Relative prefix	Project setting	ОК	NG		
		Communication diagnostics	ОК	NG	2. External device selection 3. Communication setting	
	Serial Parameter	Transmission Speed	OK	NG		
		Data Bit	ОК	NG		
		Stop Bit	OK	NG		
		Parity Bit	ОК	NG		
External device	CPU name	ОК	NG			
	Communication port	ОК	NG			
	Protocol (mode)	ОК	NG			
	Setup Prefix	ОК	NG			
	Other detailed settings		ОК	NG	4. External device setting	
	Serial Parameter	Transmission Speed	ОК	NG	4. External device setting	
		Data Bit	ОК	NG		
		Stop Bit	ОК	NG		
		Parity Bit	ОК	NG		
	Check address range		ОК	NG	<u>6. Supported addresses</u> (For details, please refer to the PLC vendor's manual.)	



Configure the communication setting of the external device by referring to its user manual.



## 5. Cable table

This chapter introduces a cable diagram for normal communication between the TOP-R and the corresponding device. (The cable diagrams described in this section may differ from the external device vendor's recommendations.)

#### ■ RS-232C (1:1 connection)

COM				PLC		
Pin	Signal	Pin	Cable connection	Signal		
arrangement*Note 1)	name	number		name		
1 5	CD	1				
(° °)	RD	2		SD		
6 9	SD	3		RD		
Based on	DTR	4	P	DTR		
communication	SG	5		SG		
cable connector	DSR	6	•	DSR		
front,	RTS	7	•	RTS		
D-SUB 9 Pin male	CTS	8		CTS		
(male, convex)		9				

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

#### ■ **RS-422** (1:1 connection)

СОМ					PLC	
Pin	Signal	Pin	Cable connection	Signal		
arrangement*Note 1)	name	number		name		
1 5	RDA(+)	1		SDA(+)		
(° °)		2	•	SDB(-)		
6 9		3	•	RDA(+)		
Based on	RDB(-)	4	•   •	RDB(-)		
communication	SG	5		SG		
cable connector	SDA(+)	6	<b>_</b>			
front,		7				
D-SUB 9 Pin male		8				
(male, convex)	SDB(-)	9	•			

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

#### ■ **RS-485** (1:1 connection)

СОМ				PLC
Pin	Signal	Pin	Cable connection	Signal
arrangement*Note 1)	name	number		name
1 5	RDA(+)	1	•	· SDA(+)
$\begin{pmatrix} \circ & \circ \end{pmatrix}$		2	•	· SDB(-)
69		3		RDA(+)
Based on	RDB(-)	4		RDB(-)
communication	SG	5		SG
cable connector	SDA(+)	6		
front,		7		
D-SUB 9 Pin male		8		
(male, convex)	SDB(-)	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.

Device Ado		Address	Netetien	Neme	Deveerlee	
Code	Size	Bit	Word	Notation	Name	Remarks
Ι	16 <sub>BIT</sub>	10.0 – 115.15	WI0 – WI15	%d	Analog input	
А	16 <sub>віт</sub>	A0.0 – A7.15	WA0 – WA7	%d	Analog output	
С	16 <sub>ВІТ</sub>	C0.0 – C0.15	WC0 – WC0	%d	Relay output	
М	16 <sub>BIT</sub>	M0.0 – M2047.15	WM0 – WM2047	%d	Dynamic memory	
R	16 <sub>BIT</sub>	R0.0 – R511.15	WR0 – WR511	%d	Static memory	