

DEVA

Electronic Micrometer WB-80C

Serial Driver

Supported version

TOP Design Studio

V1.4.9.44 or higher



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

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

1. System configuration

The system configuration of TOP and "WB-80C" is as follows:

Series	CPU	Link I/F	Communication method	System setting	Cable
Electronic Micrometer	WB-80C	Serial	RS-232C	3. TOP communication setting 4. External device setting	5. Cable table

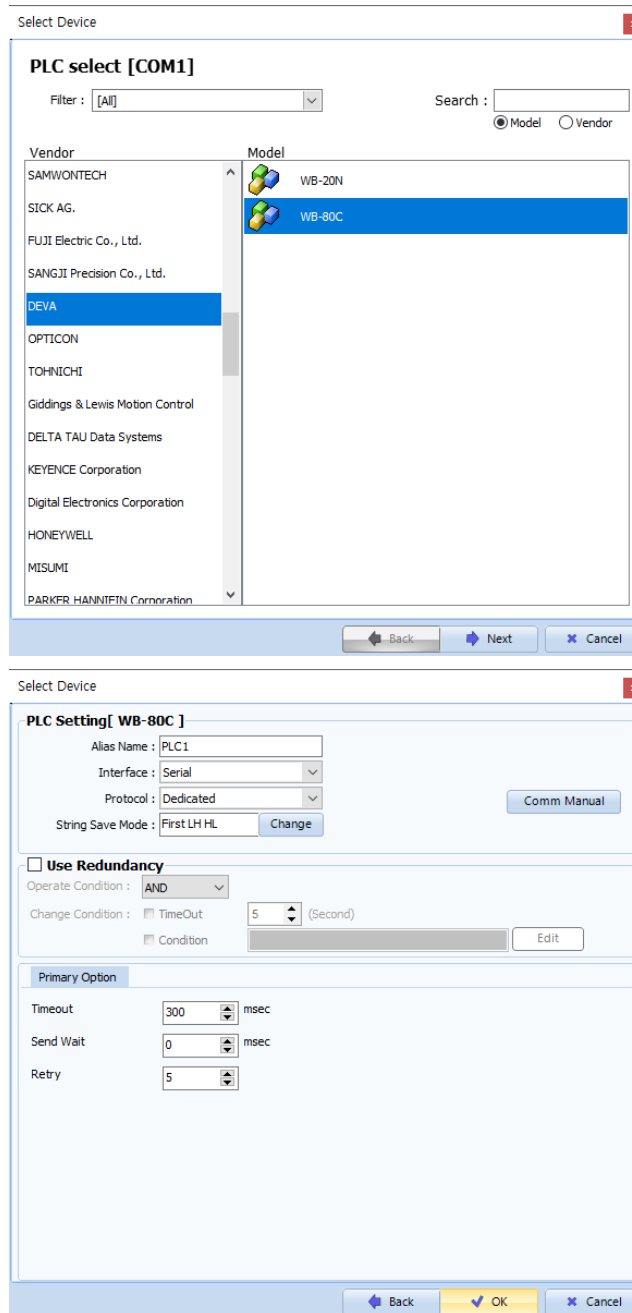
■ Connectable configuration

- 1:1 connection



2. External device selection

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



Settings		Contents					
TOP	Model	Check the display and process of TOP to select the touch model.					
External device	Vendor	Select the vendor of the external device to be connected to TOP. Select "DEVA".					
	PLC	Select the external device to be connected to the TOP. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Model</th> <th>Interface</th> <th>Protocol</th> </tr> </thead> <tbody> <tr> <td>WB-80C</td> <td>Serial</td> <td>Dedicated</td> </tr> </tbody> </table> <p>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.</p>	Model	Interface	Protocol	WB-80C	Serial
Model	Interface	Protocol					
WB-80C	Serial	Dedicated					

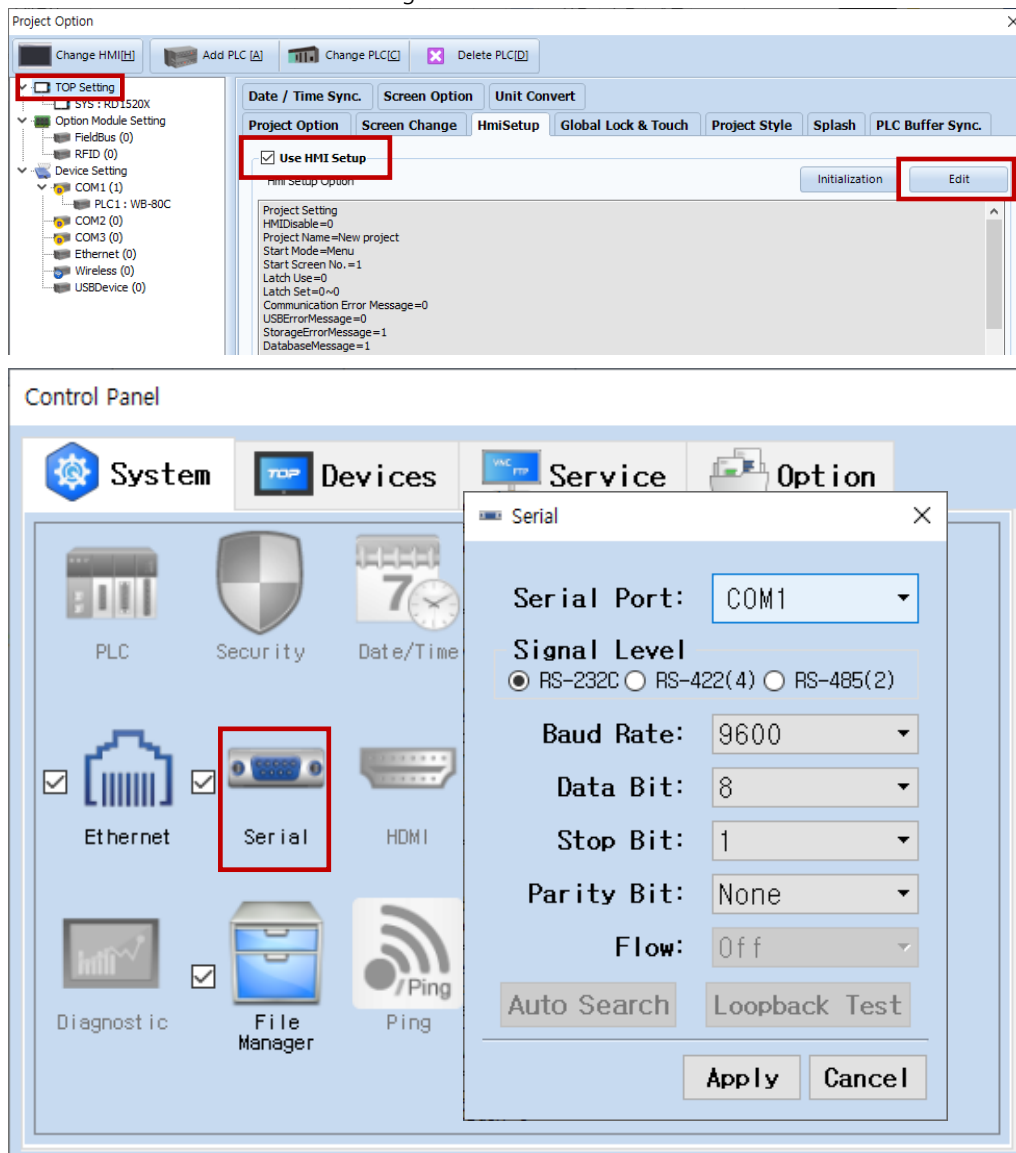
3. TOP communication setting

The communication can be set in TOP Design Studio or TOP system menu.

3.1 Communication setting in TOP Design Studio

(1) Communication interface setting

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

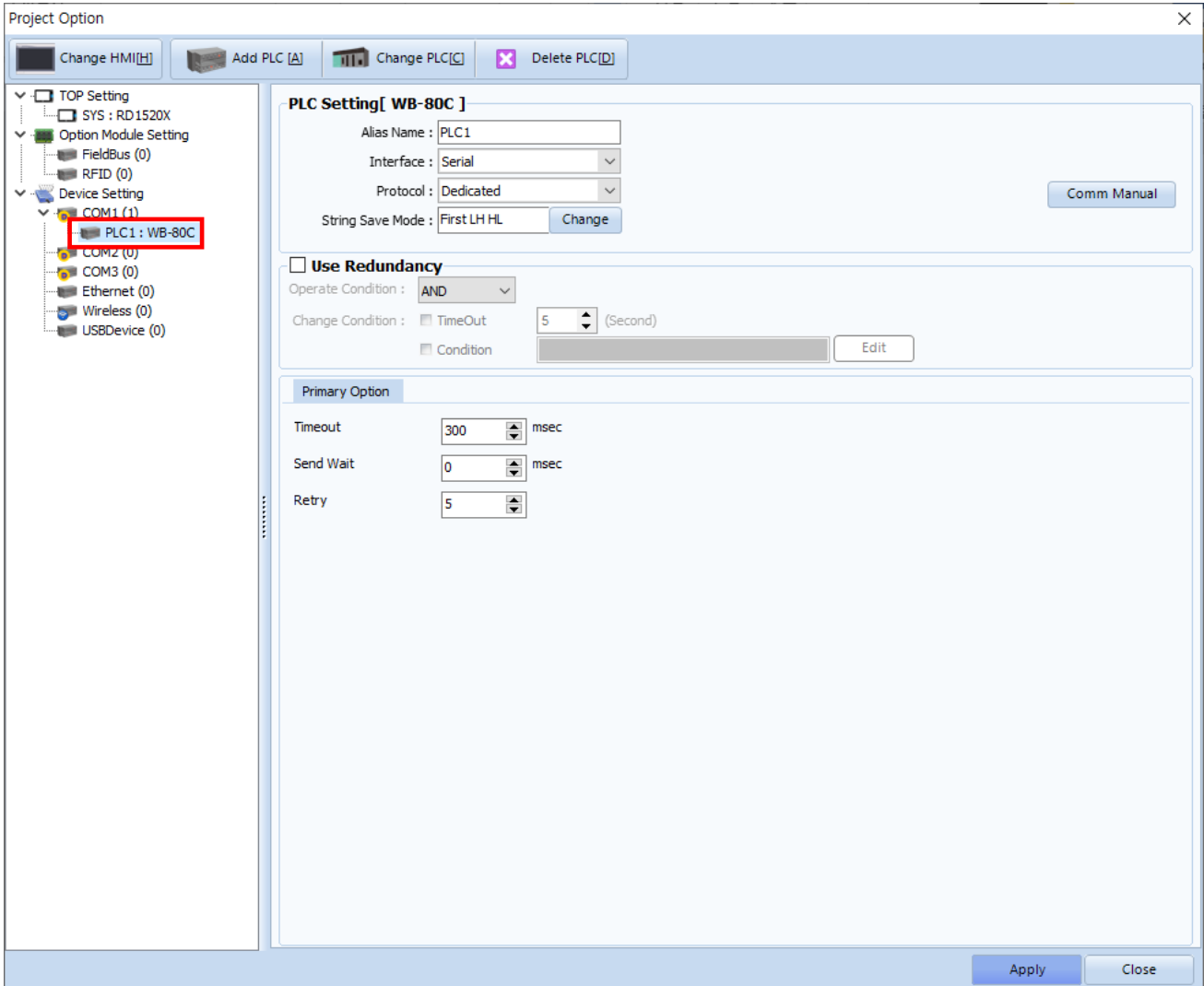


Items	TOP	External device	Remarks
Signal Level	RS-232C	RS-232C	
Baud Rate	9600		
Data Bit	8		
Stop Bit	1		
Parity Bit	None.		

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 : WB-80C]
 - Set the options of the WB-80C communication driver in TOP Design Studio.



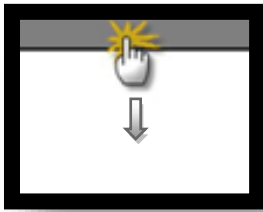
* The above settings are examples recommended by the company.

Items	Settings	Remarks
Interface	Select "Serial".	Refer to "2. External device selection".
Protocol	Select the communication protocol between the TOP and an external device.	
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.	
Retry	Set the number of request retries when the data request result is no response/negative response.	

3.2. Communication setting in TOP

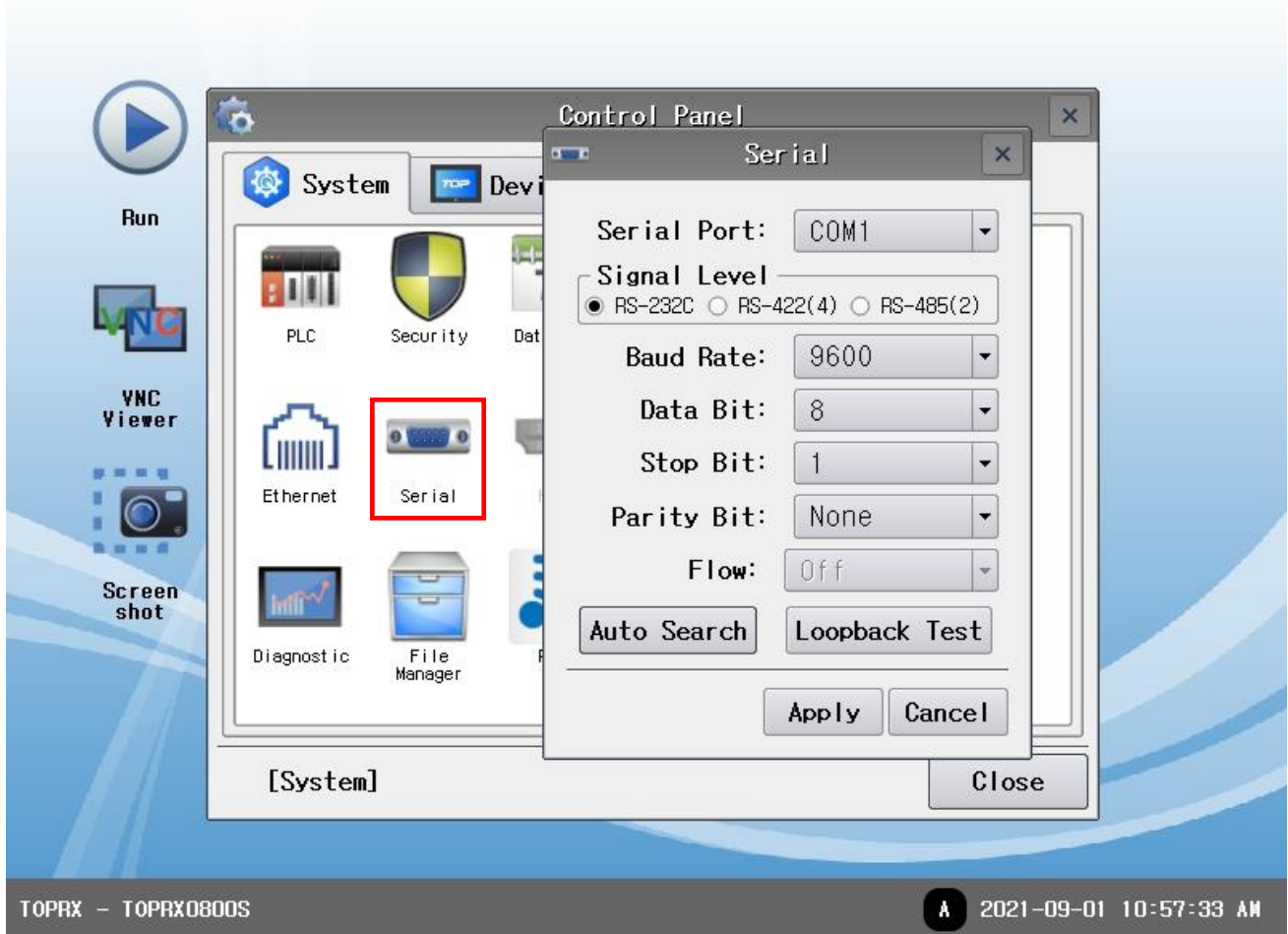
* This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.

- 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

- [Control Panel] → [Serial]



Items	TOP	External device	Remarks
Signal Level	RS-232C	RS-232C	
Baud Rate	9600		
Data Bit	8		
Stop Bit	1		
Parity Bit	None.		

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

■ [Control Panel] → [PLC]



Items	Settings	Remarks
Interface	Select "Serial".	Refer to "2. External device selection".
Protocol	Select the communication protocol between the TOP and an external device.	Refer to "2. External 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.	
Retry	Set the number of request retries when the data request result is no response/negative response.	

3.3 Communication diagnostics

- Check the interface setting status between the TOP and an 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 that the settings of the connected ports in [Control Panel] → [Serial] are the same as the settings of the external device.

- Diagnosis of whether the port communication is normal or not
 - Touch "Communication diagnostics" in [Control Panel] → [PLC].
 - Check whether communication is connected or not.

Communication diagnostics succeeded

Error message Communication setting abnormal
 - Check the cable, TOP, and external device settings. (Refer to 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.

Items	Contents	Check		Remarks	
System configuration	How to connect the system	OK	NG	1. System configuration	
	Cable	OK	NG		
TOP	Version	OK	NG	2. External device selection 3. TOP communication setting	
	Communication port	OK	NG		
	Communication driver and protocol	OK	NG		
	Other detailed settings	OK	NG		
	Relative prefix	Project setting	OK		NG
		Communication diagnostics	OK		NG
	Serial Parameter	Transmission Speed	OK		NG
		Data Bit	OK		NG
Stop Bit		OK	NG		
Parity Bit		OK	NG		
External device	CPU	OK	NG	4. External device setting	
	Communication port	OK	NG		
	Protocol	OK	NG		
	Setup Prefix	OK	NG		
	Other detailed settings	OK	NG		
	Serial Parameter	Transmission Speed	OK		NG
		Data Bit	OK		NG
		Stop Bit	OK		NG
Parity Bit		OK	NG		
Check address range		OK	NG	6. Supported addresses (For details, please refer to the PLC vendor's manual.)	

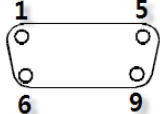
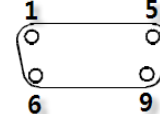
4. External device setting

Set the equivalent communication settings to that of the TOP by referring to the vendor's user manual.

5. Cable table

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

■ RS-232C (1:1 connection)

TOP			Cable connection	External device		
Pin arrangement* Note 1)	Signal name	Pin number		Pin number	Signal name	Pin arrangement* Note 1)
 <p>Based on communication cable connector front, D-SUB 9 Pin male (male, convex)</p>	RD	2			 <p>Based on communication cable connector front, D-SUB 9 Pin male (male, convex)</p>	
	SD	3				
	SG	5				

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

6. Supported addresses

Describes the WB-80C data that can be used by TOP Design Studio

Address	Bit	Word	Description	Remarks
MEASURED_DATA	-	MEASURED_DATA1 ~ MEASURED_DATA8	Measurement	
SET_RESOLVINGPWR	SET_RESOLVINGPWR1 ~ SET_RESOLVINGPWR2	SET_RESOLVINGPWR1 ~ SET_RESOLVINGPWR2	Resolution setting	*Note 1) *Note 2)
SET_ZERO	SET_ZERO1 ~ SET_ZERO8	SET_ZERO1 ~ SET_ZERO8	ZERO setting	*Note 2)
SET_ABS	SET_ABS1 ~ SET_ABS8	SET_ABS1 ~ SET_ABS8	ABS setting	*Note 2)

*Note 1) The number at the end of the address name is irrelevant to the number of channels and distinguishes two different configuration methods.

Configure as SET_RESOLVINGPWR1: +2.047 mm ~ -2.048 mm (1/1000)

Configure as SET_RESOLVINGPWR2: +409.5 um ~ -409.6 um (1/10000)

*Note 2) Address for delivering the configuration change command of the external device. (Write-only address)

※ How to use the command delivery address

This address format is write-only. It can turn the bit ON/OFF or send a command that changes the configuration of the external device regardless of the input value when a random number is entered.

Ex) Registration of a touch object for zero configuration of channel 2

1. After registering touch object, go to [Effects and Operation] > [Conditions] > [Event], and configure to [Touchdown].
2. Select [Bit] and configure the address "SET_ZERO2" to the ON operation.
3. Change the configuration of the external device by pressing the touch object at TOP.

