DEVA
Electronic Micrometer WB-20N
Serial Driver

Supported version   TOP Design Studio   V1.4.9.44 or higher

CONTENTS

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

1. System configuration

The system configuration of TOP and "WB-20N" is as follows:

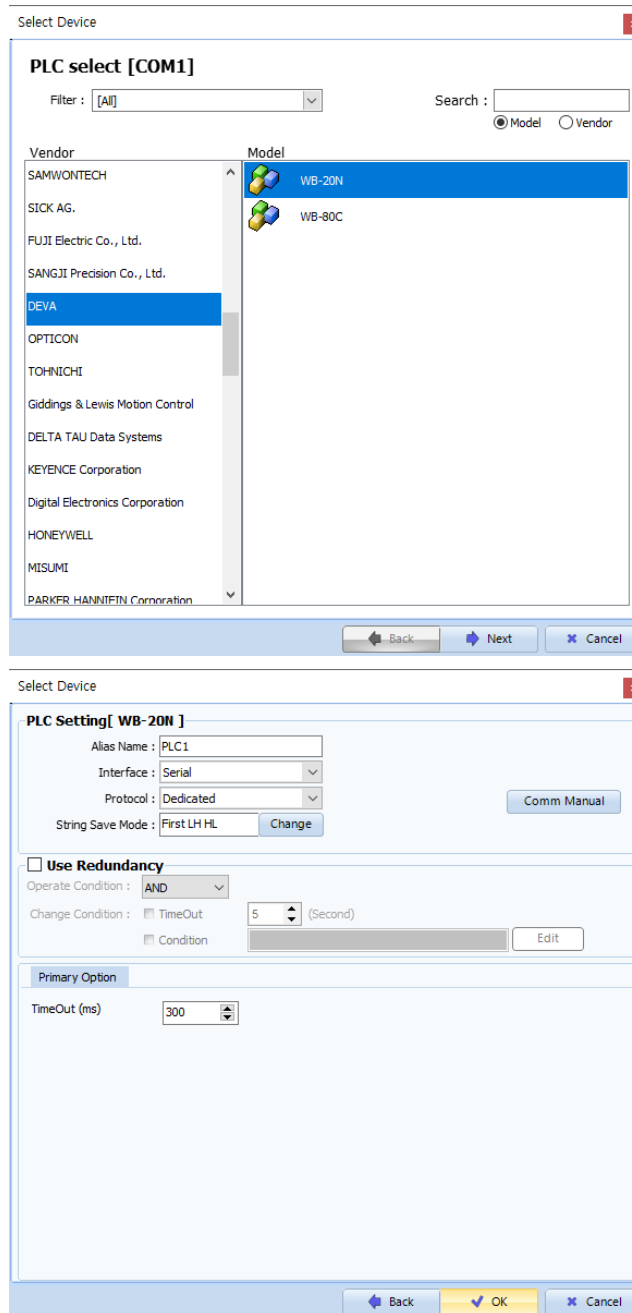| Series	CPU	Link I/F	Communication method	System setting	Cable
Electronic Micrometer	WB-20N	Serial	RS-232C	3. TOP communication setting 4. External device setting	5. Cable table

■ 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.

Model	Interface	Protocol
WB-20N	Serial	Dedicated

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.
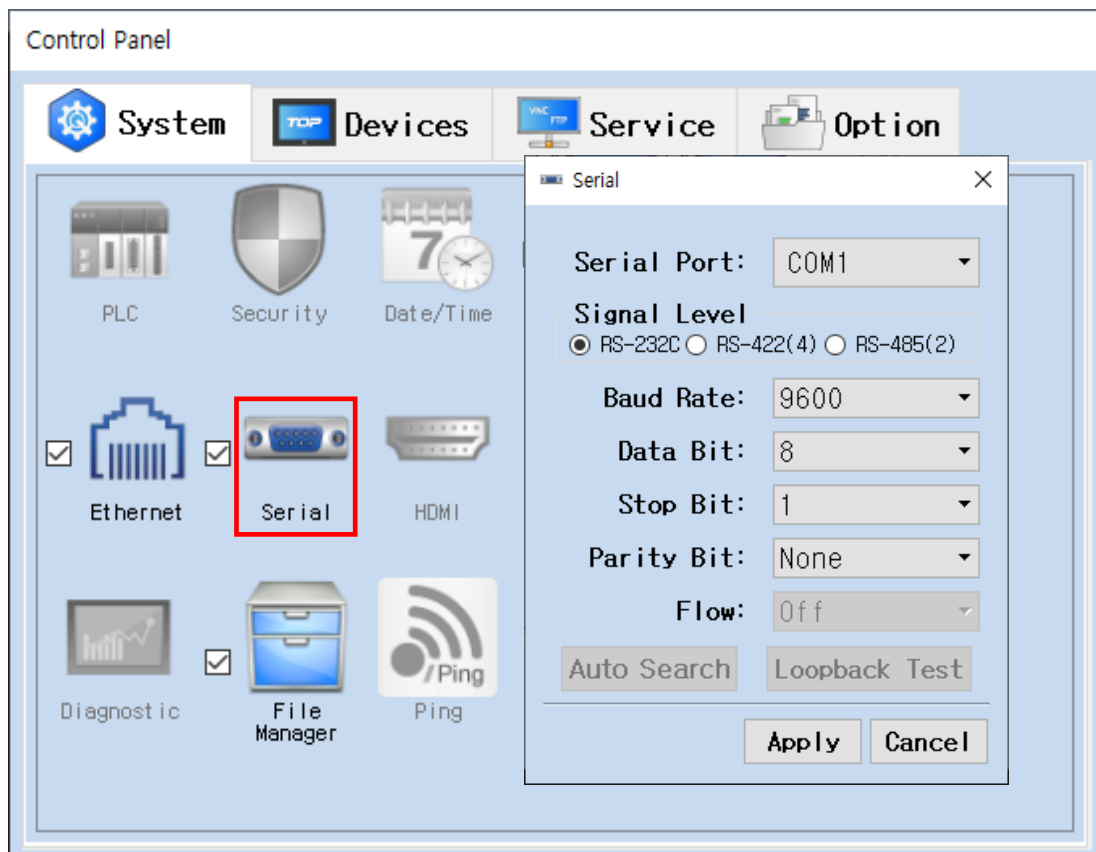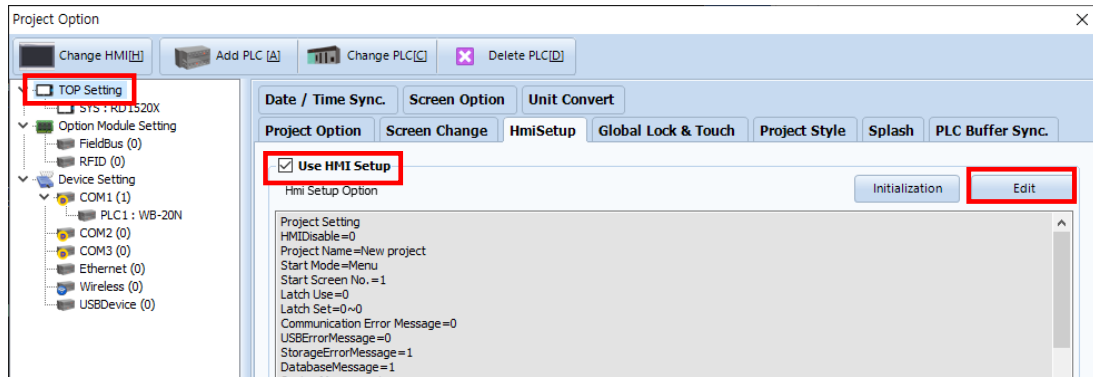
3. TOP communication setting

The communication can be set in TOP Design Studio or TOP 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-20N]

– Set the options of the WB-20N communication driver in TOP Design Studio.
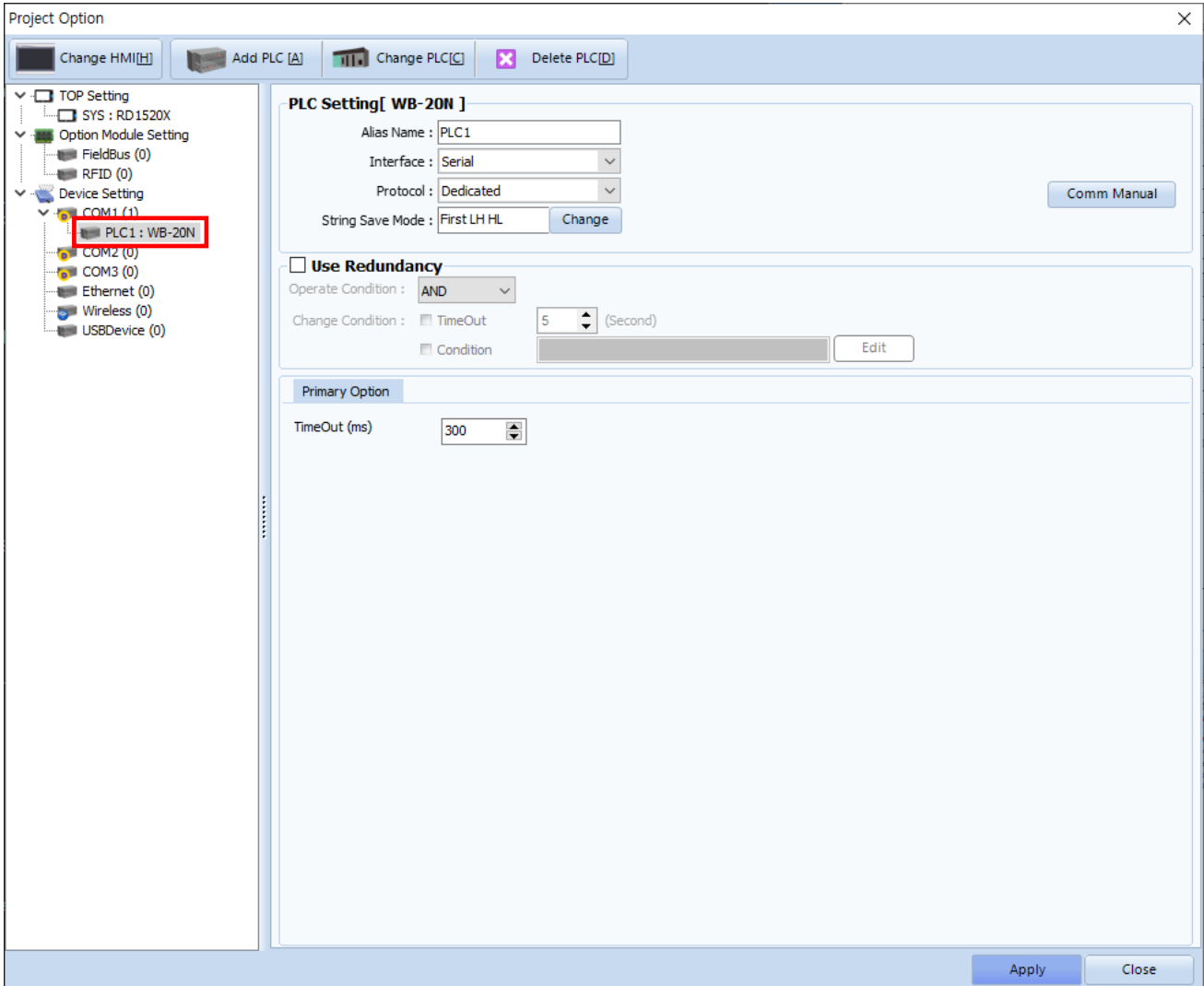
* The above settings are <u>examples</u> recommended by the company.

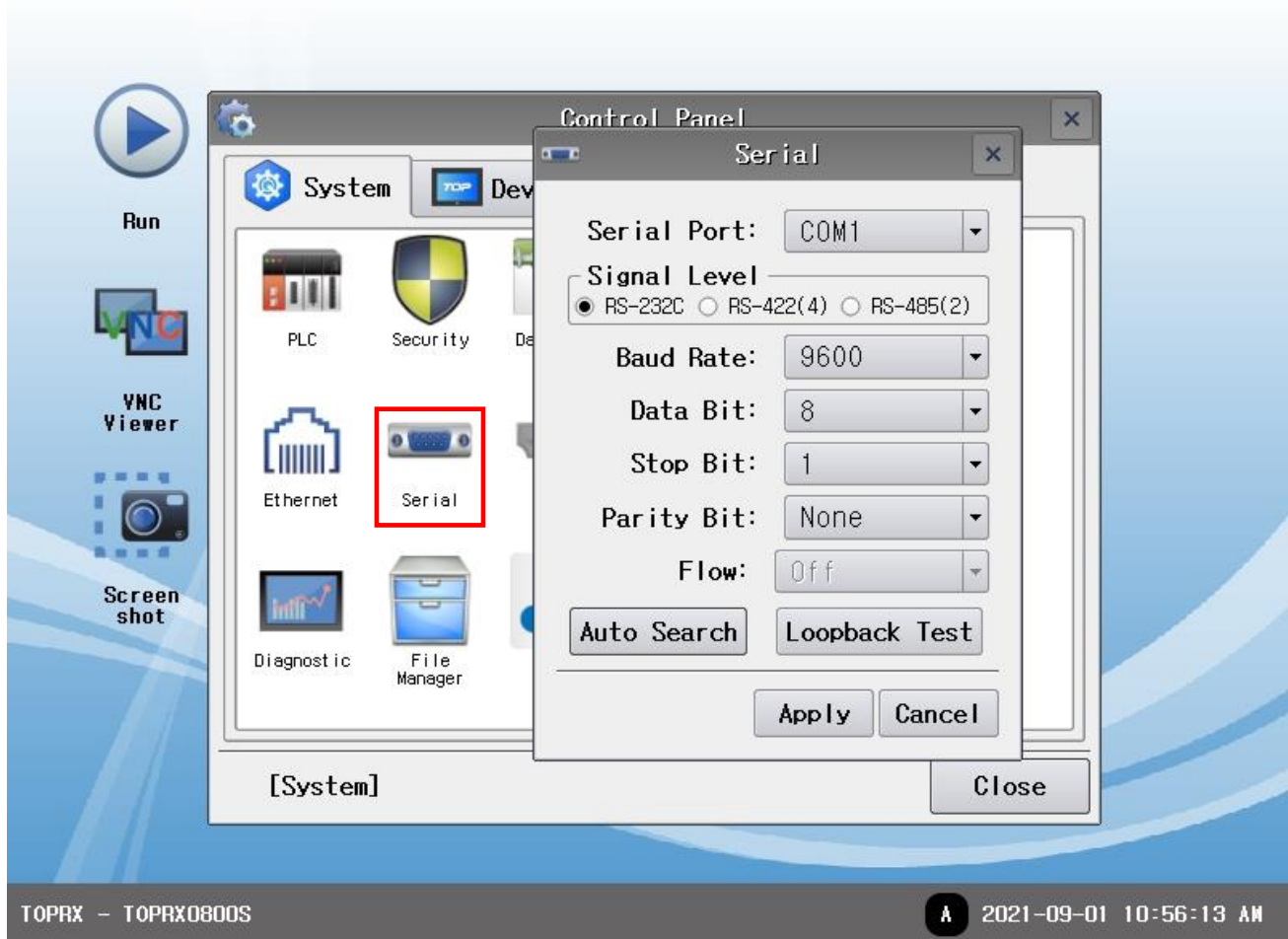| Items	Settings	Remarks
Interface	Select "Serial".	Refer to "2. External device selection".
Protocol	Select the communication protocol between the TOP and an external device.	
TimeOut (ms)	Set the time to wait for data from an external device.	

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.
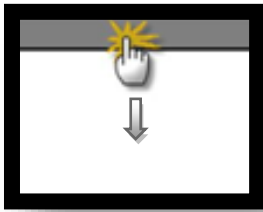
(1) Communication interface setting

■ [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.	
TimeOut (ms)	Set the time to wait for data from an external device.	

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	Communication setting normal
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.

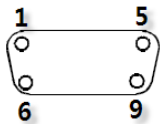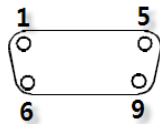| Items	Contents		Check		Remarks
System configuration	How to connect the system		OK	NG	1. System configuration
	Cable		OK	NG	
TOP	Version		OK	NG	
	Communication port		OK	NG	
	Communication driver and protocol		OK	NG	
	Other detailed settings		OK	NG	
	Relative prefix	Project setting	OK	NG	
		Communication diagnostics	OK	NG	2. External device selection 3. TOP communication setting
	Serial Parameter	Transmission Speed	OK	NG	
		Data Bit	OK	NG	
		Stop Bit	OK	NG	
		Parity Bit	OK	NG	
External device	CPU		OK	NG	
	Communication port		OK	NG	
	Protocol		OK	NG	
	Setup Prefix		OK	NG	
	Other detailed settings		OK	NG	
	Serial Parameter	Transmission Speed	OK	NG	4. External device setting
		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)

COM			Cable connection	External device		
Pin arrangement*Note 1)	Signal name	Pin number		Pin number	Signal name	Pin arrangement*Note 1)
1 5 6 9 Based on communication cable connector front, D-SUB 9 Pin male (male, convex)						1 5 6 9 Based on communication cable connector front, D-SUB 9 Pin male (male, convex)
	RD	2		2	SD	
	SD	3		3	RD	
	SG	5		5	SG	

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

6. Supported addresses

Describes the available WB-20N data that can be used with TOP Design Studio.

	Bit	Word	Description	Data type	Remarks
MEASURED_P1	-	MEAUSRED_P1	Channel 1 measurement	Float	
MEAUSRED_P2	-	MEASURED_P2	Channel 2 measurement	Float	
MEASURED_G	-	MEASURED_G	Group operation value	Float	
STATUS_P1	STATUS_P1	-	Channel 1 measurement status	Bit	*Note 1)
STATUS_P2	STATUS_P2	-	Channel 2 measurement status	Bit	*Note 1)
STATUS_G	STATUS_G	-	Group operation status	Bit	*Note 1)

*Note 1) OFF: OK / ON: NG