# On Off System
# NEOS-HSD
# Serial Driver

Supported version     TOP Design Studio     V1.4.11.26 or higher

## CONTENTS

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

# 1. System configuration

The system configuration of TOP and "On Off System – NEOS-HSD" is as follows:

| Series | CPU | Communication method | System setting | Cable |
|---|---|---|---|---|
| Heat-Smoke Detector | NEOS-HSD | RS-485 | 3. TOP communication setting<br>4. External device setting | 5. Cable table |

■ **Connection configuration**
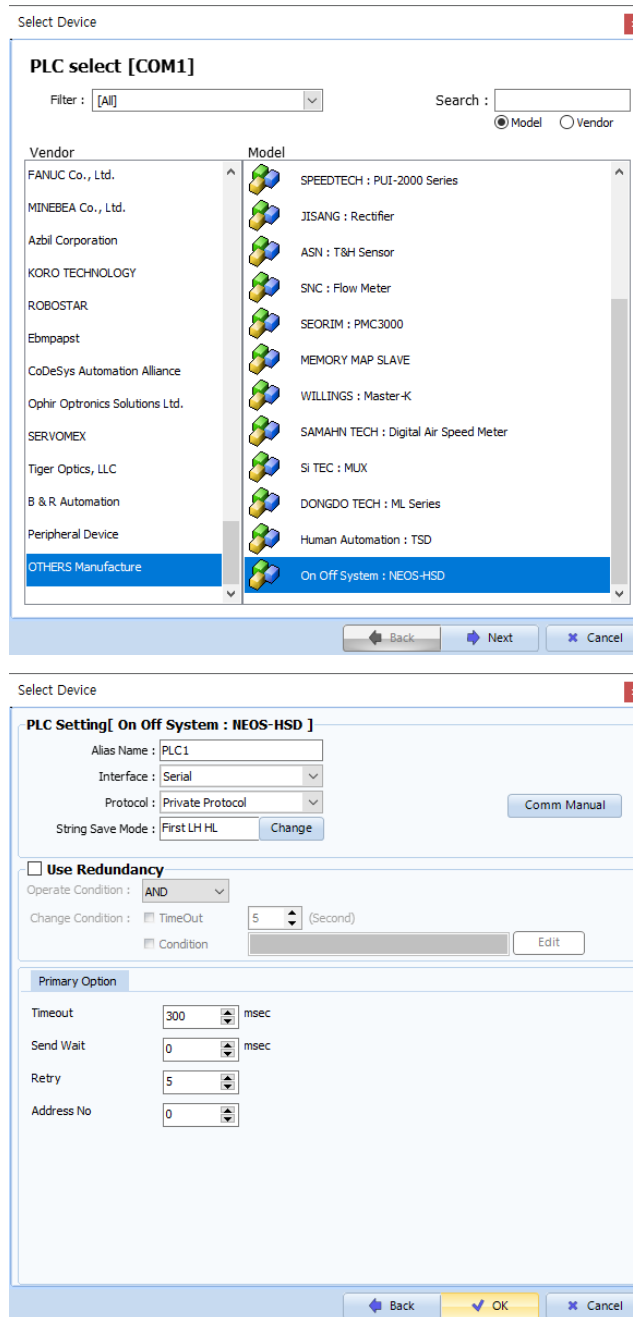
・1:1 connection

・1:N connection

· · ·
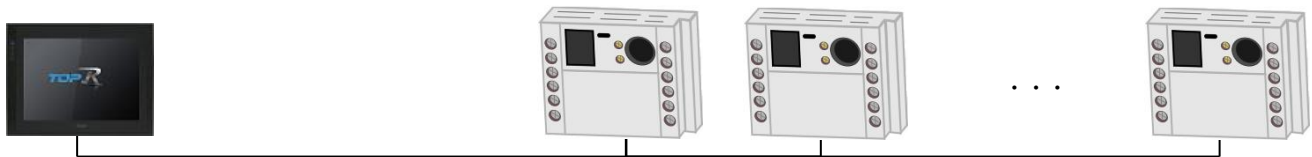
# 2. External device selection

■ 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 "OTHERS Manufacture". |
| | Model | Select the external device to be connected to the TOP. |

| Model | Interface | Protocol |
|---|---|---|
| On Off System : NEOS-HSD | Serial | Private 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.
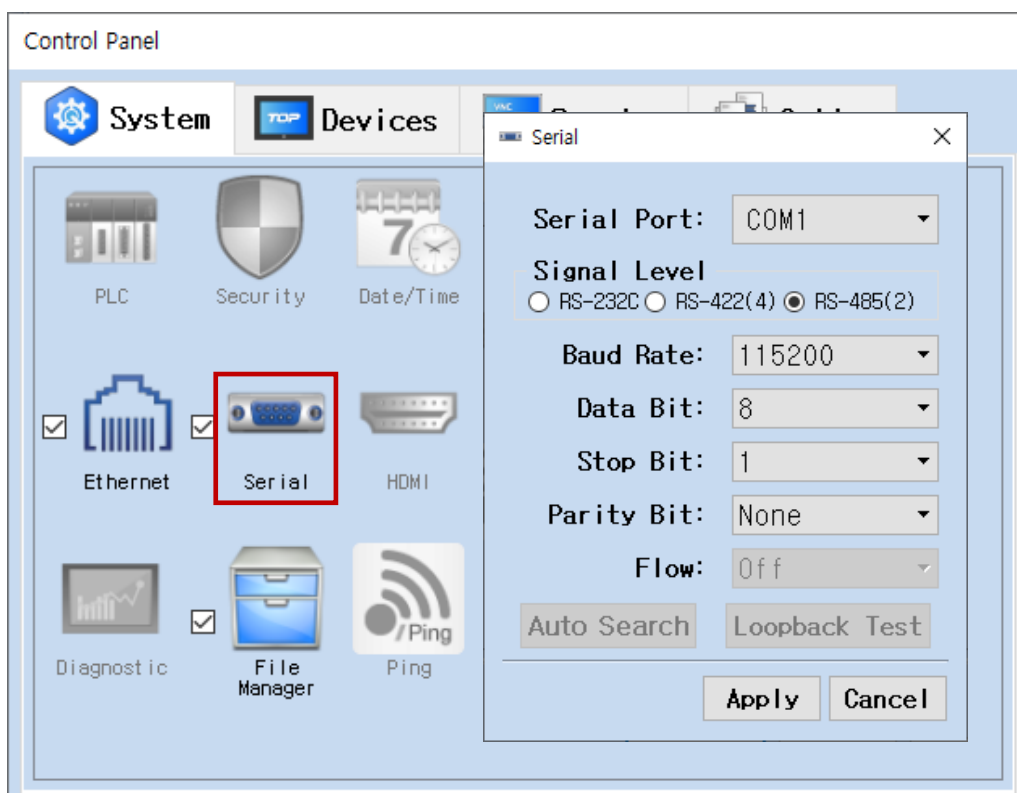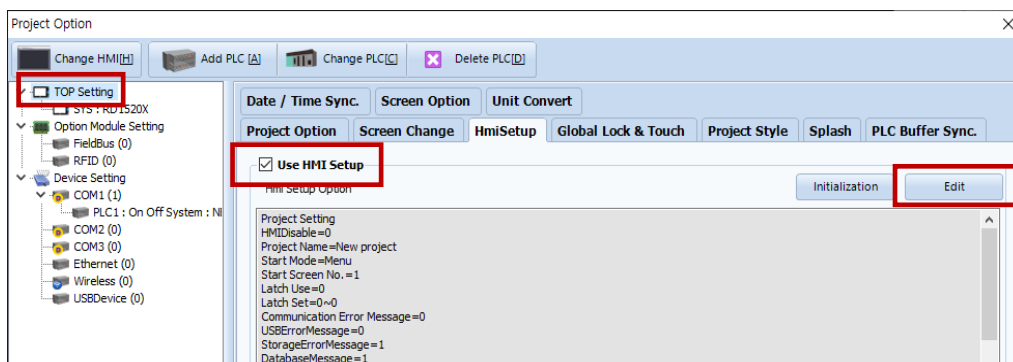
# 3. TOP communication setting

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] → [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-485 | | |
| Baud Rate | 115200 | | |
| Data Bit | 8 | | |
| Stop Bit | 1 | | |
| Parity Bit | None. | | |

\* 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 > COM1 > "PLC1 : On Off System : NEOS-HSD"]

– Set the options of the On Off System : NEOS-HSD communication driver in TOP Design Studio.

**Project Option**

| Items | Settings | Remarks |
|---|---|---|
| Interface | Select "Serial". | Refer to "2. External device selection". |
| Protocol | Select "Private Protocol". | |
| 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 | Configure the amount of redelivery attempts from TOP to external device. | |
| Address No | Set the prefix of 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**

■ [Main Screen > Control Panel > Serial]

| Items | TOP | External device | Remarks |
|---|---|---|---|
| Signal Level | RS-485 | | |
| Baud Rate | 115200 | | |
| Data Bit | 8 | | |
| Stop Bit | 1 | | |
| Parity Bit | None. | | |

\* 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**

■ [Main Screen > Control Panel > PLC]



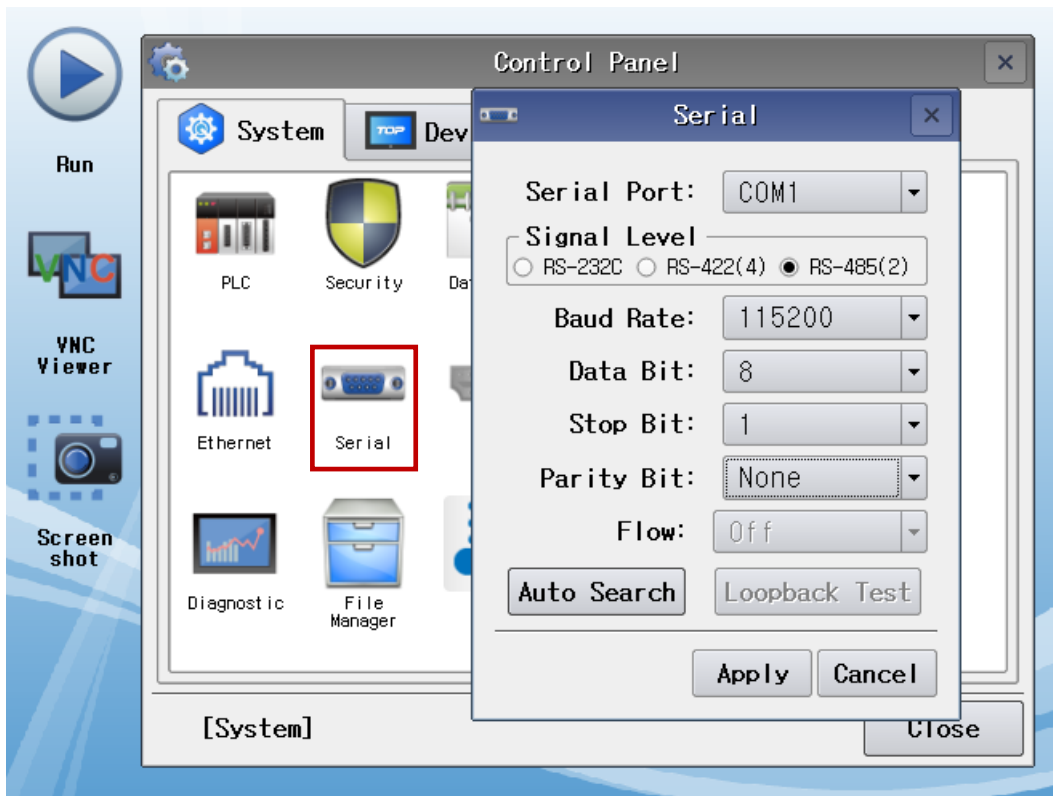| Items | Settings | Remarks |
|---|---|---|
| Interface | Select "Serial". | Refer to "2. External device selection". |
| Protocol | Select "Private Protocol". | |
| TimeOut (ms) | Set the time for the TOP to wait for a response from an external device. | |
| SendWait (ms) | Set the waiting time between TOP's receiving a response from an external device and sending the next command request. | |
| Retry | Configure the amount of redelivery attempts from TOP to external device. | |
| Address No | Set the prefix of 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 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.

| OK | 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.

| Items | Contents | | Check | | Remarks |
|---|---|---|---|---|---|
| System configuration | How to connect the system | | OK | NG | 1. System configuration |
| | Connection cable name | | OK | NG | |
| TOP | Version information | | OK | NG | 2. External device selection |
| | Port in use | | OK | NG | 3. Communication setting |
| | Driver name | | OK | NG | |
| | Other detailed settings | | OK | NG | |
| | Relative prefix | Project setting | OK | NG | |
| | | Communication diagnostics | OK | NG | |
| | Serial port setting | Baud Rate | OK | NG | |
| | | Data Bit | OK | NG | |
| | | Stop Bit | OK | NG | |
| | | Parity Bit | OK | NG | |
| External device | CPU name | | OK | NG | 4. External device setting |
| | Communication port name (module name) | | OK | NG | |
| | Protocol (mode) | | OK | NG | |
| | Setup Prefix | | OK | NG | |
| | Other detailed settings | | OK | NG | |
| | Serial port setting | Baud Rate | OK | NG | |
| | | Data Bit | OK | NG | |
| | | Stop Bit | OK | NG | |
| | | Parity Bit | OK | NG | |
| | Check address range | | OK | NG | 6. Supported addresses |

# 4. External device setting

For more detailed setting method than that described in this example, refer to the On Off System user manual.

※ **Must have the same communication settings as the external device of the TOP. (Reference)**

**Step 1.** Use the DIP switch to configure the prefix (detector address).

- 4 bit address
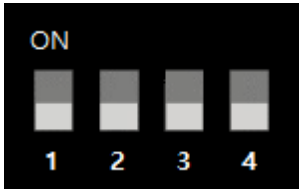
| Switch number | Bit | Value when ON |
|---------------|-----|---------------|
| 1 | Bit 0 | 1 |
| 2 | Bit 1 | 2 |
| 3 | Bit 2 | 4 |
| 4 | Bit 3 | 8 |
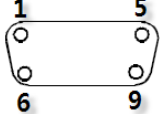
Ex)

| Switch number | Status |
|---------------|--------|
| 1 | OFF |
| 2 | ON |
| 3 | ON |
| 4 | OFF |
| **Address** | **6** |

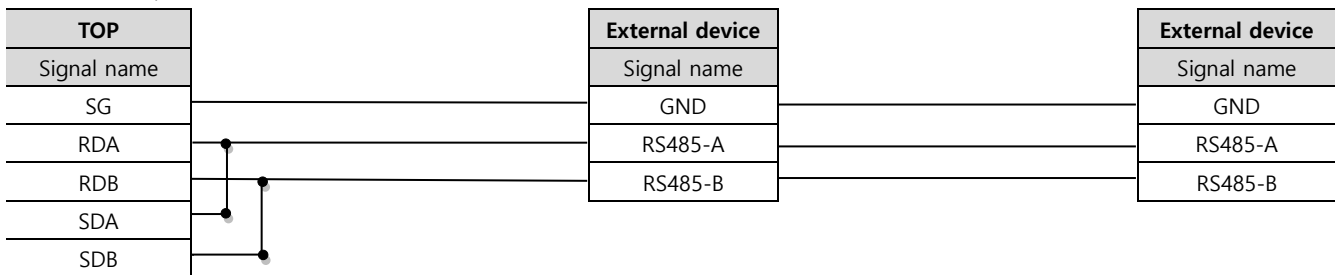# 5. Cable table

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 "NEOS-HSD")

## ■ RS-485

| TOP | | | | External device | | |
|---|---|---|---|---|---|---|
| Pin arrangement*Note 1) | Signal name | Pin number | | Pin number | Signal name | |
| (D-SUB 9 Pin diagram) RDA | RDA | 1 | | 3 | RS485-A | |
| | | | | | | |
| | | | | | | |
| | RDB | 4 | | 1 | RS485-B | |
| Based on | SG | 5 | | 2 | GND | |
| communication | SDA | 6 | | | | |
| cable connector | | | | | | |
| front, | | | | | | |
| D-SUB 9 Pin male | | | | | | |
| (male, convex) | SDB | 9 | | | | |

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

## ■ RS-485 (1:N connection)

| TOP | | External device | | External device |
|---|---|---|---|---|
| Signal name | | Signal name | | Signal name |
| SG | | GND | | GND |
| RDA | | RS485-A | | RS485-A |
| RDB | | RS485-B | | RS485-B |
| SDA | | | | |
| SDB | | | | |

# 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 | Bit address | Word address | Double word address | R/W | Remarks |
|---|---|---|---|---|---|
| RUN_STATE | RUN_STATE | RUN_STATE | - | R | Operation status |
| SMOKE_ALARM | SMOKE_ALARM | SMOKE_ALARM | - | R | Smoke alarm |
| TEMP_WARNING | TEMP_WARNING | TEMP_WARNING | - | R | Temperature warning |
| TEMP_ALARM | TEMP_ALARM | TEMP_ALARM | - | R | Temperature alarm |
| CURRENT_TEMP | - | - | CURRENT_TEMP (FLOAT) | R | Current temperature |
| CURRENT_HUMI | - | - | CURRENT_HUMI (FLOAT) | R | Current humidity |
| TEMP_WARNING_VALUE | - | - | TEMP_WARNING_VALUE (FLOAT) | R/W | Temperature warning Reference value |
| TEMP_WARNING_DVA_VALUE | - | - | TEMP_WARNING_ DVA_VALUE (FLOAT) | R/W | Temperature warning Deviation value |
| TEMP_ALARM_VALUE | - | - | TEMP_ALARM_VALUE (FLOAT) | R/W | Temperature alarm Reference value |
| TEMP_WARNING_CMODE | TEMP_WARNING _CMODE | TEMP_WARNING _CMODE | - | R/W | Temperature warning Maintain usage |
| TEMP_ALARM_CMODE | TEMP_ALARM _CMODE | TEMP_ALARM _CMODE | - | R/W | Temperature alarm Maintain usage |
| ALARM_RESET | ALARM_RESET | ALARM_RESET | - | W | Reset all alarm/warning |
| TEMP_AMODE | TEMP_AMODE | TEMP_AMODE | - | R/W | Enable temperature alarm/warning |