CAS Corporation
CAS Indicator CI/NT Series
Serial Driver
Command Type 2

Supported version TOP Design Studio V1.4.11.21 or higher

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

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6. Supported addresses Page 13

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

1. System configuration

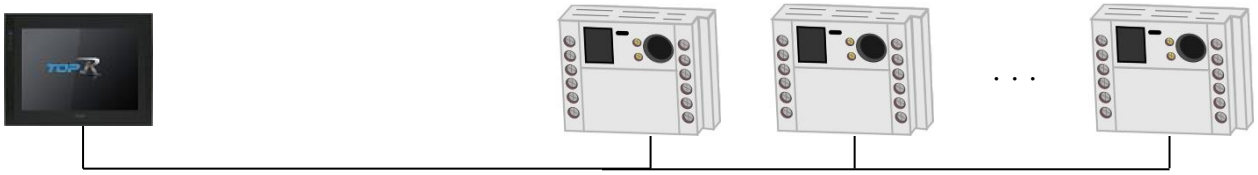
The system configuration of TOP and "CAS Corporation – CAS Indicator CI/NT Series" is as follows:

Series	CPU	Link I/F	Communication method	Communication setting	Cable
CAS Indicator	CI Series NT Series	Built-in port	RS-232C RS-422/485	3. TOP communication setting 4. External device setting	5. Cable table

■ Connectable configuration

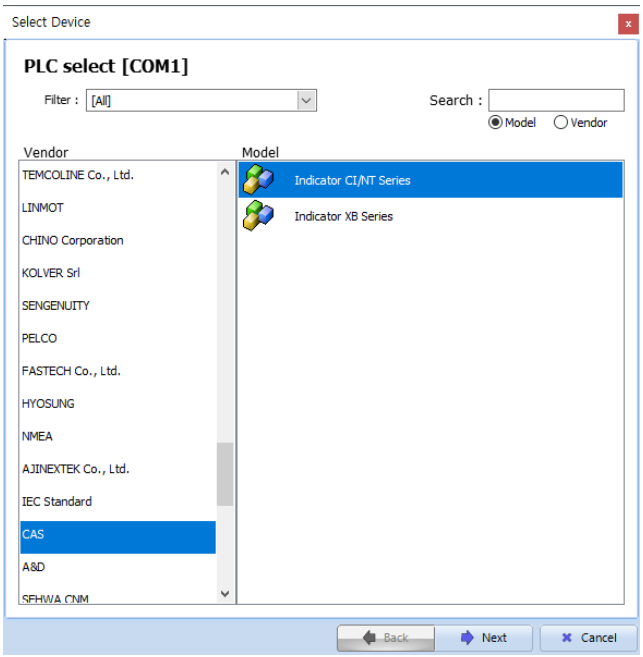
・1:1 connection – RS232C/422/485 communication

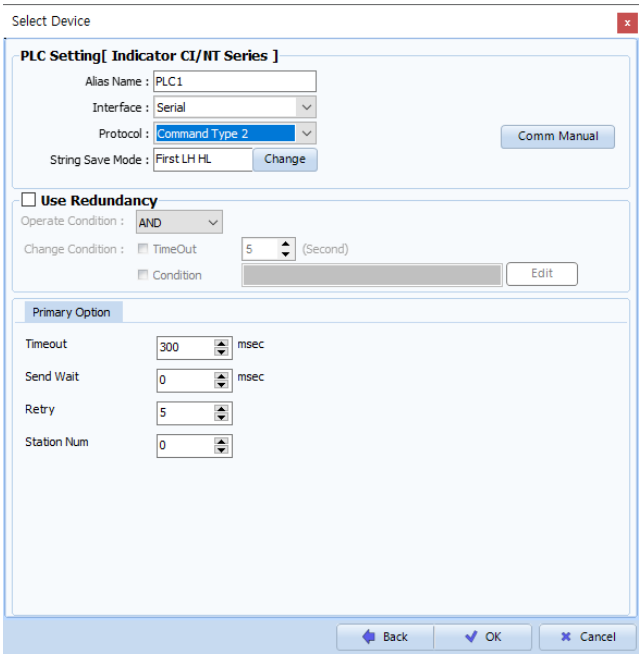
・1:N connection – RS422/ 485 communication



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 "CAS".
	PLC	Select an external device to connect to TOP. **Model** / **Interface** / **Protocol** Indicator CI/NT Series / Serial / Command Type 2 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

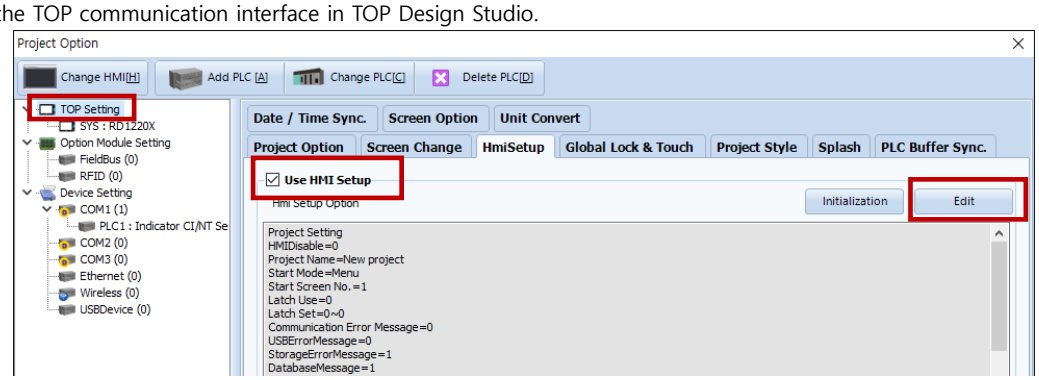
The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

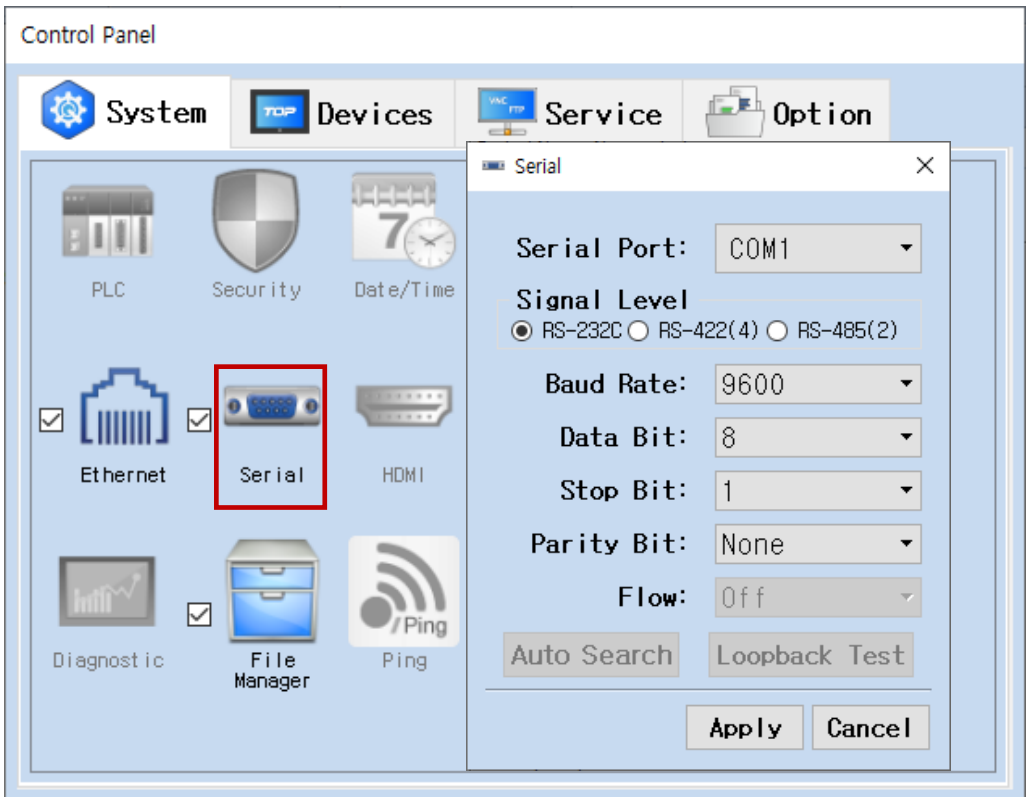
3.1 Communication setting in TOP Design Studio

(1) Communication interface setting

■ [Project > Project Property > TOP Settings] → [HMI Settings > "Use HMI Setup" Check > Edit > Serial]

– Set the TOP communication interface in TOP Design Studio.





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

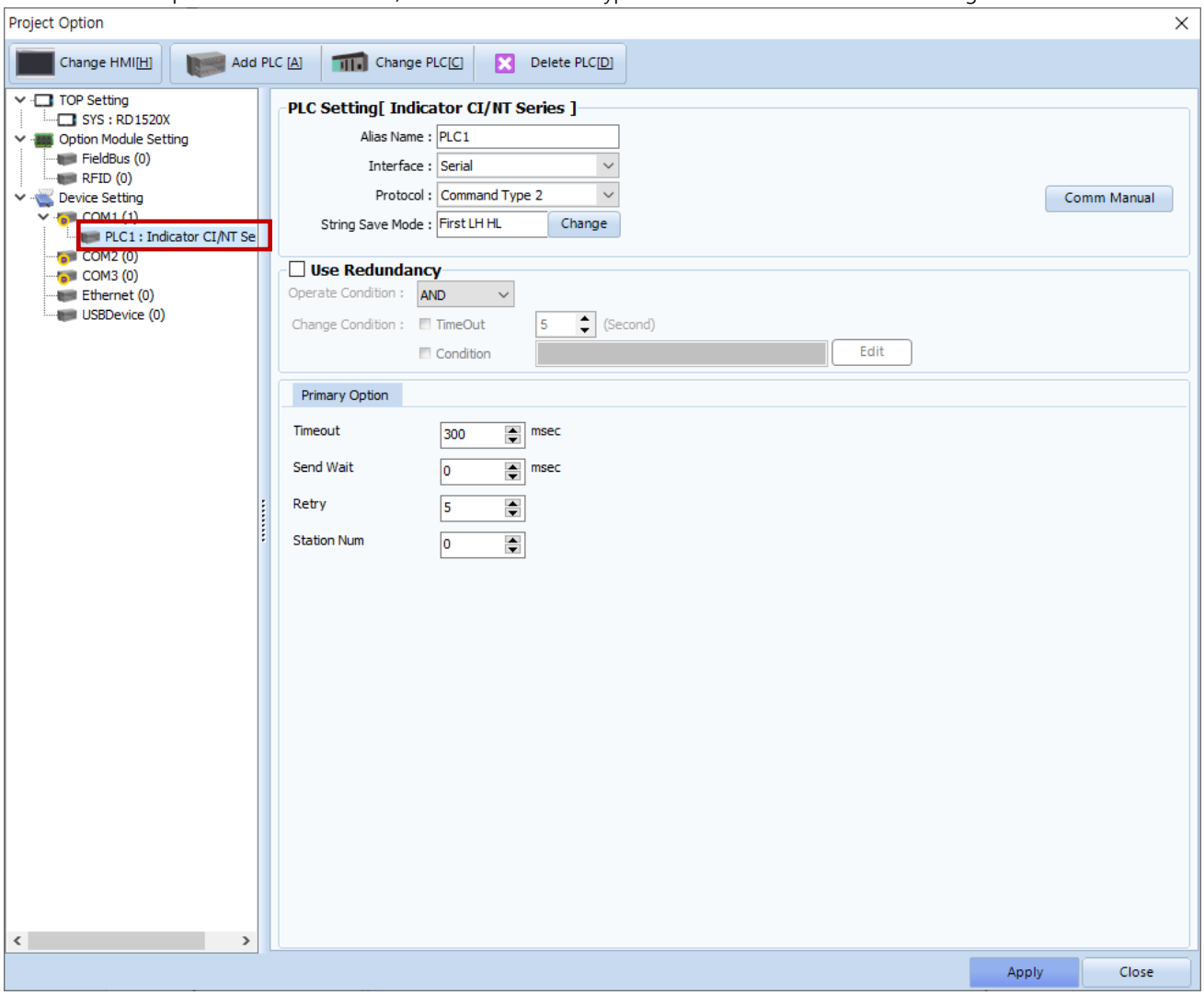
* The above settings are examples recommended by the company.

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 Settings > COM > "Indicator CI/NT Series"]

– Set the options of the Indicator CI/NT Series Command Type 2 communication driver in TOP Design Studio.

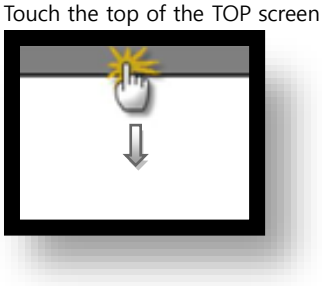


Items	Settings	Remarks
Interface	Configure the communication interface between the TOP and an external device.	Refer to "2. External device selection".
Protocol	Configure the communication protocol between the TOP and an external device.	
TimeOut (ms)	Set the time for the TOP to wait for a response from 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	Configure the amount of redelivery attempts from TOP to external device.	
Station Num	Set the prefix of an external device.	Device ID

3.2. Communication setting in TOP

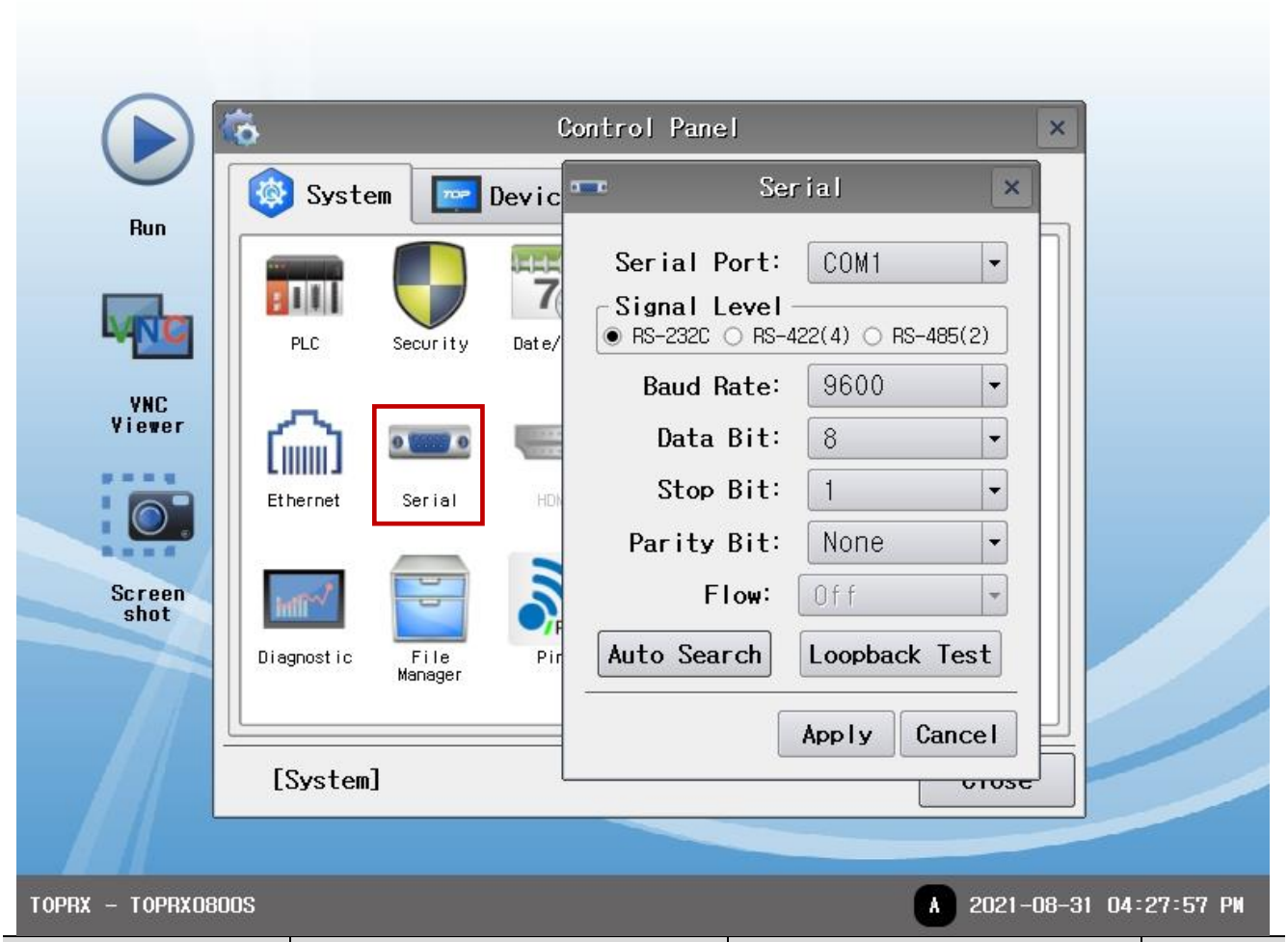
*** This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.**

■ 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 (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]

Items	Settings	Remarks
Interface	Configure the communication interface between the TOP and an external device.	Refer to "2. External device selection".
Protocol	Configure 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	Configure the amount of redelivery attempts from TOP to external device.	
Station Num	Set the prefix of an external device.	Device ID

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 3. TOP communication setting
	Port in use		OK	NG	
	Driver name		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 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 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.)

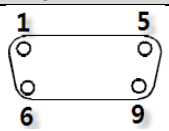
4. External device setting

Refer to the user manual of CAS Corporation's CI/NT Series to identically configure the communication settings of the TOP.

5. Cable table

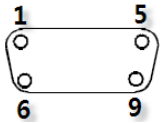
This chapter introduces a cable diagram for normal communication between the TOP and the corresponding device.
(The cable diagram described in this section may differ from the recommendations of "CAS Corporation")

■ RS-232C

TOP				External device		
Pin arrangement*Note 1)	Signal name	Pin number		Pin number	Signal name	Pin arrangement*Note 1)
						
	RD	2		2	TXD	
	SD	3		3	RXD	
	SG	5				
				7	SG	
Based on communication cable connector front, D-SUB 9 Pin male (male, convex)						Based on communication cable connector front, D-SUB 25 Pin male (male, convex)

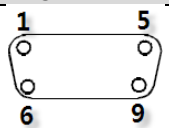
*Note 1) The pin arrangement is as seen from the connecting side of the cable connection connector.

■ RS-422 (1:1 connection)

TOP				External device	
Pin arrangement*Note 1)	Signal name	Pin number		Signal name	
	RDA(+)	1		SDA(+)	
				SDB(-)	
				RDA(+)	
	RDB(-)	4		RDB(-)	
	SG	5		SG	
	SDA(+)	6			
Based on communication cable connector front, D-SUB 9 Pin male (male, convex)	SDB(-)	9			

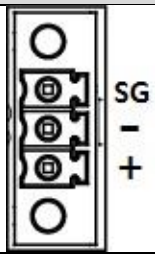
*Note 1) The pin arrangement is as seen from the connecting side of the cable connection connector.

■ RS-485 (1:1 connection)

TOP				External device	
Pin arrangement*Note 1)	Signal name	Pin number		Signal name	
	RDA(+)	1		SDA(+)	
				SDB(-)	
				RDA(+)	
	RDB(-)	4		RDB(-)	
	SG	5		SG	
	SDA(+)	6			
Based on communication 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** (1:1 connection)

TOP			External device	
Pin arrangement	Signal name		Signal name	
	+		SDA(+)	
	-		SDB(-)	
	SG		RDA(+)	
			RDB(-)	
			SG	

■ **RS-422** (1:N connection)

TOP	**External device**	**External device**
Signal name	Signal name	Signal name
RDA(+)	SDA(+)	SDA(+)
RDB(-)	SDB(-)	SDB(-)
SDA(+)	RDA(+)	RDA(+)
SDB(-)	RDB(-)	RDB(-)

■ **RS-485** (1:N connection)

TOP	**External device**	**External device**
Signal name	Signal name	Signal name
RDA(+)	SDA(+)	SDA(+)
RDB(-)	SDB(-)	SDB(-)
SDA(+)	RDA(+)	RDA(+)
SDB(-)	RDB(-)	RDB(-)

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 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
WEIGHT	-	WEIGHT	WEIGHT	R	Weight
WEIGHT_FLOAT	-	-	WEIGHT_FLOAT	R	Weight (Float value)
STS	STS0 ~ STS2	STS	STS	R	Unstable/Stable/Overload* Note 1)
GSNT	GSNT0~GSNT1	GSNT	GSNT	R	Total weight/Net weight *Note 2)
ZERO_KEY	ZERO_KEY	ZERO_KEY	ZERO_KEY	W	Zero Key
TARE_KEY	TARE_KEY	TARE_KEY	TARE_KEY	W	Tare Key
GROSS_KEY	GROSS_KEY	GROSS_KEY	GROSS_KEY	W	Gross Key
NET_KEY	NET_KEY	NET_KEY	NET_KEY	W	Net Key
START_KEY	START_KEY	START_KEY	START_KEY	W	Start Key
STOP_KEY	STOP_KEY	STOP_KEY	STOP_KEY	W	Stop Key
PRINT_KEY	PRINT_KEY	PRINT_KEY	PRINT_KEY	W	Print Key
TOTALPRINT_KEY	TOTALPRINT_KEY	TOTALPRINT_KEY	TOTALPRINT_KEY	W	Total Print Key
ITEM_NO	-	ITEM_NO	ITEM_NO	R/W	Item No.*Note 3)
ONESTEP_WEIGHT _VALUE	-	ONESTEP_WEIGHT _VALUE	ONESTEP_WEIGHT _VALUE	R/W	One Step Weight
SUPPLY_VALUE	-	SUPPLY_VALUE	SUPPLY_VALUE	R/W	Supply Value
SET_VALUE	-	SET_VALUE	SET_VALUE	R/W	Set Value
FALL_VALUE	-	FALL_VALUE	FALL_VALUE	R/W	Fall Value
HIGHLIMIT_VALUE	-	HIGHLIMIT_VALUE	HIGHLIMIT_VALUE	R/W	High Limit Value
LOWLIMIT_VALUE	-	LOWLIMIT_VALUE	LOWLIMIT_VALUE	R/W	Low Limit Value

*Note 1)

Balance status when the following bit is enabled	
STS0	Unstable
STS1	Stable
STS2	Overload

*Note 2)

Balance status when the following bit is enabled	
GSNT0	Gross
GSNT1	Net

*Note 3) If you enter a value outside the item number range of an external device, the external device can initialize to its default value.