# **CAS** Corporation

# CAS Indicator CI/NT Series Serial Driver

## Command Type 2

V1.4.11.21 or higher

Supported version TOP Design Studio

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

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Describes how to set up communication for external devices.

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Describe 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 "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	<u>3. TOP</u> communication <u>setting</u> <u>4. External device</u> <u>setting</u>	<u>5. Cable table</u>

■ 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.

elect Device							
PLC select [C	ОМ1]						
Filter : [All]			$\sim$	S	earch :		
		• • I - I			() M	1odel	○ Vendor
Vendor TEMCOLINE Co., Ltd.	,	Model	Indicator CI/NT	Sorias			
LINMOT							
CHINO Corporation			Indicator XB Ser	ies			
KOLVER Srl							
SENGENUITY							
PELCO							
ASTECH Co., Ltd.							
HYOSUNG							
NMEA							
AJINEXTEK Co., Ltd.							
IEC Standard							
	_						
CAS A&D							
SEHWA CNM		·					
elect Device			-	Back	Next		X Cancel
elect Device PLC Setting[ India Alias Name	: PLC1	Series ]		Back	Next		
PLC Setting[ India Alias Name Interface	: PLC1 : Serial			Back	Next		
PLC Setting[ India Alias Name Interface Protocol	: PLC1 : Serial : Command Ty	/pe 2	↓ ↓ ↓ ↓	Back	Next		
PLC Setting[ Indi Alias Name Interface Protocol String Save Mode	: PLC1 : Serial : Command Ty : First LH HL	/pe 2		Back	Next		
PLC Setting[ India Alias Name Interface Protocol	: PLC1 : Serial : Command Ty : First LH HL	/pe 2		Back	Next		
PLC Setting[ Indik Alias Name Interface Protocol String Save Mode Use Redundan Operate Conditon :	: PLC1 : Serial : Command Ty : First LH HL CY	rpe 2		Back	Next		
PLC Setting [ Indik Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : Change Condition :	: PLC1 : Serial : Command Ty : First LH HL CY	rpe 2	v v	Back	Next		n Manual
PLC Setting [ Indik Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : Change Condition :	: PLC1 : Serial : Command Ty : First LH HL CY ND ~ TimeOut	rpe 2	v v	Back	Next	Comr	n Manual
PLC Setting [ Indic Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : [ Change Condition : ]	: PLC1 : Serial : Command T : First LH HL CY ND ~ TimeOut Condition	rpe 2 Chi	v v	Back	Next	Comr	n Manual
PLC Setting [ Indik Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : [ Change Condition : ] Primary Option	: PLC1 : Serial : Command T : First LH HL : TimeOut Condition	pe 2 Chi 5 msec	v v	Back	Next	Comr	n Manual
PLC Setting [ Indik Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : Change Condition : Primary Option Timeout	: PLC1 : Serial : Command TY : First LH HL CY MND ~ 1 TimeOut 1 TimeOut 1 TimeOut	pe 2 Cha 5 msec msec	v v	Back	• Next	Comr	n Manual
PLC Setting [ Indik Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : Change Condition : Primary Option Timeout Send Wait	: PLC1 : Serial : Comment Ti : First LH HL CV TimeOut 1 TimeOut 300 € 5 €	pe 2 Chi 5 msec	v v	Back	Next	Comr	n Manual
PLC Setting [ Indik Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : [ Change Condition : [ [ Primary Option Timeout Send Wait Retry	: PLC1 : Serial : Comment Ti : First LH HL CV TimeOut 1 TimeOut 300 € 5 €	pe 2 Chi 5 msec	v v	Back	Next	Comr	n Manual
PLC Setting [ Indik Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : [ Change Condition : [ [ Primary Option Timeout Send Wait Retry	: PLC1 : Serial : Comment Ti : First LH HL CV TimeOut 1 TimeOut 300 € 5 €	pe 2 Chi 5 msec	v v	Back	Next	Comr	n Manual
PLC Setting [ Indik Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : [ Change Condition : [ [ Primary Option Timeout Send Wait Retry	: PLC1 : Serial : Comment Ti : First LH HL CV TimeOut 1 TimeOut 300 € 5 €	pe 2 Chi 5 msec	v v	Back	Next	Comr	n Manual
PLC Setting [ Indik Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : [ Change Condition : [ [ Primary Option Timeout Send Wait Retry	: PLC1 : Serial : Comment Ti : First LH HL CV TimeOut 1 TimeOut 300 € 5 €	pe 2 Chi 5 msec	v v	Back	Next	Comr	n Manual

Set	tings		Contents			
ТОР	Model	Check the display and proce	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	Model Interface Protocol			
		Indicator CI/NT Series Serial Command Type 2				
		Please check the system co connect is a model whose sy	5	see if the external device you want to		



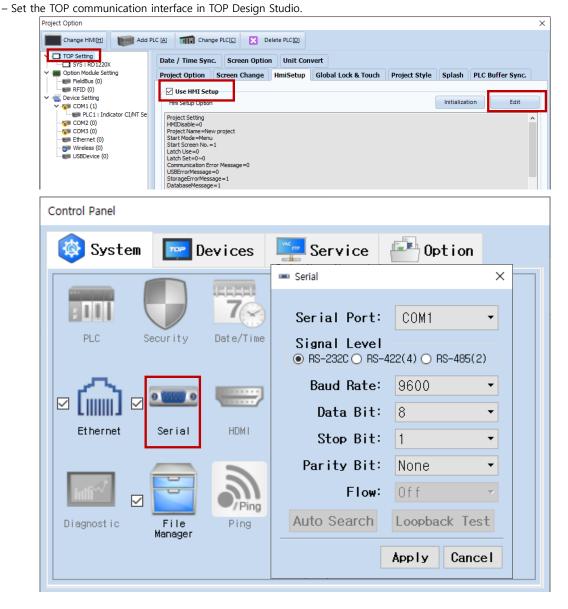
### 3. TOP communication setting

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 ]



Items	ТОР	External device	Remarks	
Signal Level (port)	RS-232C	RS-232C		
Baud Rate	9600			
Data Bit	8			
Stop Bit	1			
Parity Bit	Non	ie.		

\* 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.

Project Option			×
Change HMI[H] Add PLC [A]	Change PLC[C]  Delete PLC[D]		
TOP Setting     SYS : RD 1520X     Option Module Setting     FieldBus (0)     RFID (0)     Option Module Setting     FieldBus (1)     PLC1 : Indicator CI/NT Se     COM1 (1)     Option COM3 (0)     Option USBDevice (0)     Generation     If Indicator CI/NT Se     If Indit Indicator CI/NT Se     If	C Setting[Indicator CI/NT Series]  Alias Name: PLCI Interface: Serial Protocol: Command Type 2 String Save Mode: First LH HL Change  Use Redundancy erate Condition: TimeOut Condition Edit  Primary Option  meout 300 mesc erd Wait 0 mesc erd ation Num 0		mm Manual
< >>			
		Apply	Close

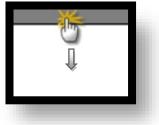
Items	Settings	Remarks
Interface	Configure the communication interface between the TOP and an external device.	Refer to "2. External
Protocol	Configure the communication protocol between the TOP and an external device.	device selection".
TimeOut (ms)	Set the time for the TOP to wait for a response from 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	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 <u>drag</u> it down. Touch "EXIT" in the pop-up window to go to the main screen.



#### (1) Communication interface setting

■ [Main Screen > Control Panel > Serial]

	to To System		iontrol Pane	l Ser	ial 🗳	×	
Run VNC Viewer Screen shot		Security Date/ Security Date/ Serial HD File Pir Manager Pir	Baud R Data Stop Parity	evel- RS-42 ate: Bit: Bit: bit: low: ch	COM1		
Toprx – Toprx080	os				A 2021	1-08-31 04	:27:57
tems		ТОР			External device		Remar
Signal Level (port)		RS-232C			RS-232C		
Baud Rate			960	0			
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 ]

			PLC	×	
VNC Viewer Screen shot	System	Driver(COM1) Interface Protocol Timeout Send Wait Retry Station N	PLC1(Indicator CI/NT Ser Serial Command Type 2 300 msec 5 5 0	ries)	
TOPRX - TOPRX0800S	System]	Diagnostic		Apply Cancel Apply Cancel	) PH

ltems	Settings	Remarks
Interface	Configure the communication interface between the TOP and an external device.	Refer to "2. External
Protocol	Configure the communication protocol between the TOP and an external device.	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	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.

ОК	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.

ltems	Contents		Check		Remarks
System	How to connect the sy	/stem	OK	NG	1. Containing formation
configuration Connection cable nam		e	OK	NG	1. System configuration
ТОР	Version information		OK	NG	
	Port in use		OK	NG	
	Driver name		OK	NG	
	Other detailed setting	S	OK	NG	
	Relative prefix	Project setting	OK	NG	
		Communication diagnostics	ОК	NG	2. External device selection 3. TOP communication setting
	Serial Parameter	Transmission Speed	ОК	NG	
		Data Bit	OK	NG	
		Stop Bit	OK	NG	
		Parity Bit	OK	NG	
External device	CPU name	OK	NG		
	Communication port r	OK	NG		
	Protocol (mode)	OK	NG		
	Setup Prefix	OK	NG		
	Other detailed settings		OK	NG	4. External device estimat
	Serial Parameter	Transmission Speed	ОК	NG	4. External device setting
		Data Bit	OK	NG	
		Stop Bit	OK	NG	
		Parity Bit	OK	NG	
	Check address range				6. Supported addresses
			ОК	NG	(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

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

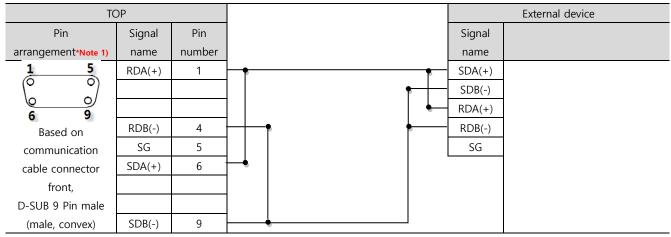
\*Note 1) The pin arrangement is as seen from the connecting side of the cable connection connector.

#### ■ **RS-422** (1:1 connection)

TC	)P				External device
Pin	Signal	Pin		Signal	
arrangement*Note 1)	name	number		name	
1 5	RDA(+)	1		SDA(+)	
$\begin{pmatrix} \circ & \circ \\ \circ & \circ \end{pmatrix}$			•	SDB(-)	
6 9			•	RDA(+)	
Based on	RDB(-)	4	•   •	RDB(-)	
communication	SG	5		SG	
cable connector	SDA(+)	6			
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)



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

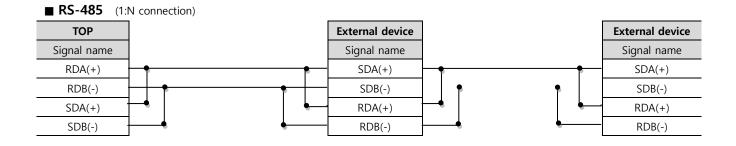


#### ■ **RS-485** (1:1 connection)

ТОР				External device
Din arrangement	Signal		Signal	
Pin arrangement	name		name	
	+		SDA(+)	
	-		SDB(-)	
SG SG	SG	•	RDA(+)	
		•	RDB(-)	
+ الم@٢			SG	
0				

#### ■ RS-422 (1:N connection)

ТОР	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	STSO ~ 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.