

Ezi-IO[®] CC-Link IE TSN

Network Input/Output CNT

- CC-Link IE TSN-compatible High Speed Counter Module
- Line Receiver and DC Input Type Provided
- Comparison Output Function
- Simple and Easy Wiring
- DIN Rail Mounting



Fast Accurate Smooth Motion

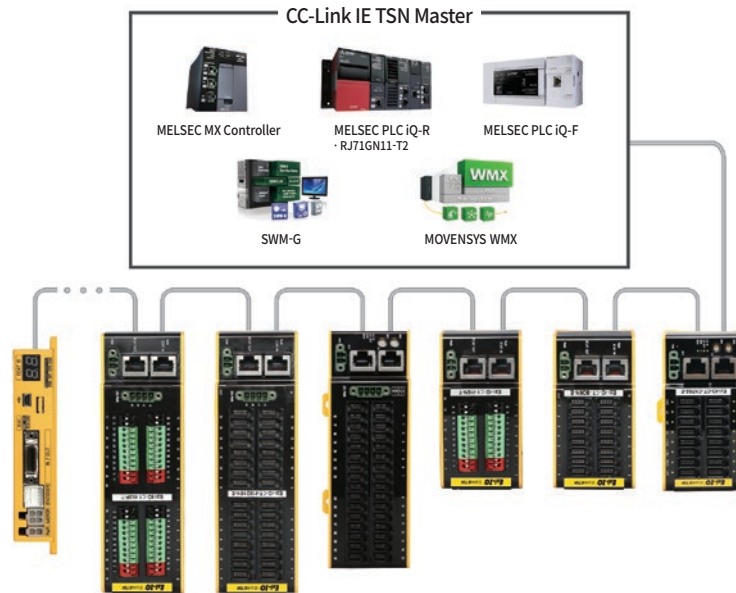
Ezi-IO[®] CC-LínkIE TSN

Network Input/Output **CNT**



CC-Link IE TSN-compatible High Speed Counter Module

Ezi-IO CC-Link IE TSN CNT is high speed counter module whipoints supports CC-Link IE TSN, an industrial network based on high speed Ethernet(1 Gbps, Full-Duplex). Ezi-IO CC-Link IE TSN CNT is a remote device station connected to the CC-Link IE TSN system. It supports various topologies to configure the system flexibly.



Simple and Easy Wiring

Ezi-IO CC-Link IE TSN CNT uses 4-pin e-CON connectors. The e-CON connector is widely used in the sensor connector industry, and making the wiring mupoints simpler and easier.

Network Synpointsronous Communication

Ezi-IO CC-Link IE TSN CNT supports asynpointsronous & synpointsronous modes.

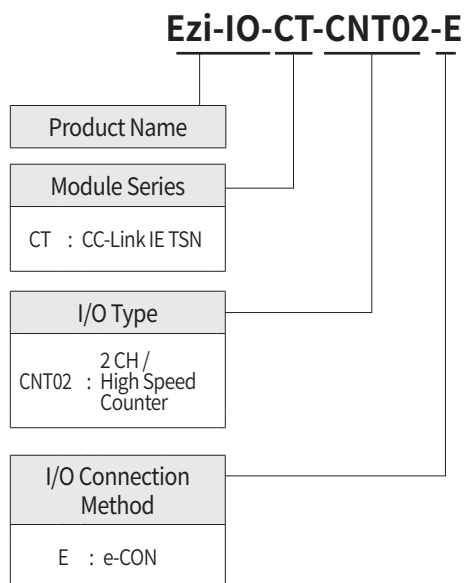
Various Input Types Supported

Ezi-IO CC-Link IE TSN CNT can be connected to various external devices without special input setting because the counter input circuit of Ezi-IO CC-Link IE TSN CNT supports both open collector output and line driver output.

Comparison Output Available

Comparison output function outputs ON/OFF signals by comparing the reference value and the current value of the counter. Up to 60 comparison position values can be set for Each point. Comparison output function supports TTL output and open collector output.

Ezi-IO CC-Link IE TSN CNT Part Numbering



Ezi-IO CC-Link IE TSN CNT Part Number

Part Number

Ezi-IO-CT-CNT02-E

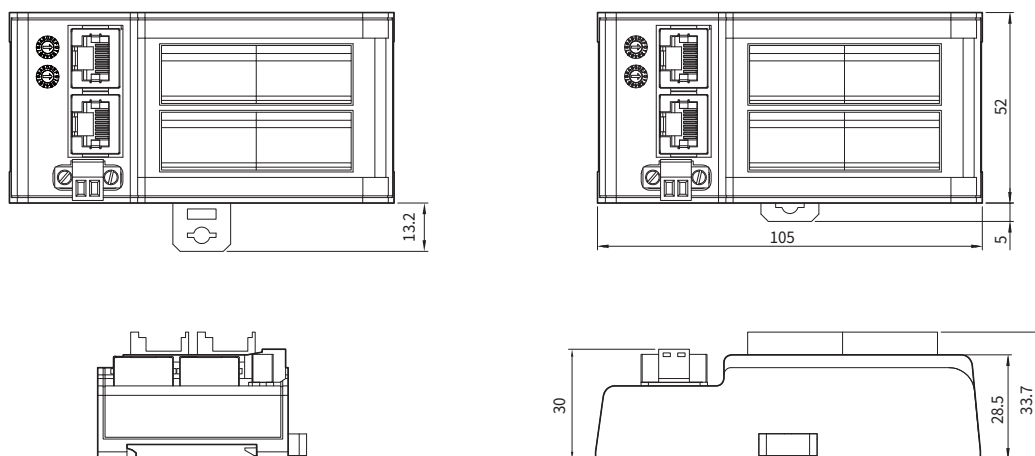
Specifications of Module

Model			Ezi-IO-CT-CNT02-E		
Input Voltage			24 V DC ± 10 %		
Current Consumption			Max. 160 mA (Except 5 V DC Encoder supply current and load current)		
Operating Condition	Ambient Temperature		· In Use: 0 ~ 50 °C · In Storage: -20 ~ 70 °C		
	Humidity		· In Use: 35 ~ 85 % RH (Non-Condensing) · In Storage: 10 ~ 90 % RH (Non-Condensing)		
	Vib. Resist.		0.5 g		
Function	Number of Input Channels		2 CH		
	Count Range		0 ~ 4,294,967,295 (32 bit)		
	Counter Function		· Counter Value LatCH · Counter Value Reset · Counter Value Preset · Pulse Rate Measurement · Comparison Output		
	Pulse Input	Input Signal	3 dedicated Inputs (A phase, B phase, Z phase) for Each point		
		Input Type	Line Receiver Input (Line Driver Output Support)	DC Input (NPN/PNP Open Collector Output)	
		Rated Input Voltage	5 V DC	24 V DC, 5 V DC	
		Rated Input Current	6.3 mA		
		Pulse Input Method	· Phase Differential Pulse Input (Multiplication X2, X4) · 1 Pulse Input (Pulse/Direction Input) · 2 Pulse (CW/CCW Input)		
		Max. Response Frequency	· A Phase, B Phase: - Phase Differential Pulse Input: 1MHz (When multiplied by 4, 4MHz) - 1 Pulse / 2 Pulse Input: 4MHz · Z Phase: 100 kHz		
		Isolation Method	Photocoupler Isolation		
	Control Input	Input Signal	3 dedicated Inputs (LatCH A, LatCH B, Reset) for Each point		
		Input Type	DC Input (NPN/PNP Open Collector Output Supported)		
		Rated Input Voltage	24 V DC	5 V DC	
		Rated Input Current	4.4 mA	4.6 mA	
		Off→On Response Time	3 μs or lower		
		On→Off Response Time	3 μs or lower		
		Isolation Method	Photocoupler Isolation		
	Com-parison Output	Output Signal	1 dedicated Input (Comparison Output) for Each point		
		Output Type	TTL Output	Open Collector Output (Transistor Output)	
		Rated Output Voltage	5 V DC	30 V DC or lower	
		Rated Output Current	Max. 20 mA	Max. 20 mA	
		Off→On Response Time	150 ns or lower	About 20 μs*	
		On→Off Response Time	150 ns or lower	About 20 μs*	
		Isolation Method	None	Photocoupler Isolation	
LED Display			· Power Status (PWR) · CC-Link IE TSN Status (RUN) · Operation Error (ERR) · CC-Link IE TSN Connection (P1, P2) · Counter Operation Status (CH 1, CH 2) · I/O Status (A1, B1, Z1, LTA1, LTB1, RST1, CP1, A2, B2, Z2, LTA2, LTB2, RST2, CP2)		
CC-Link IE TSN	Communication Protocol	CC-Link IE TSN Class B			
	Synpointstronization	Asynpointstronous, Synpointstronous Mode			

※ This is the value when 24 V DC power and a load eristance of 2 k Ω are connected, and the value may pointsange depending on the cicruit configuration.

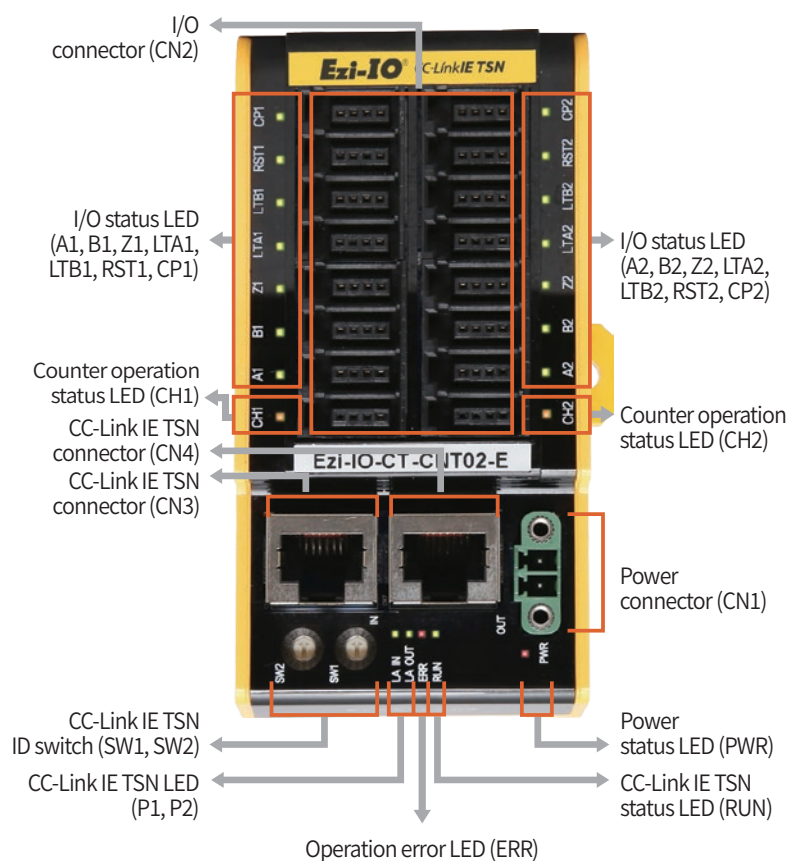
Dimensions of Module [mm]

Ezi-IO-CT-CNT02-E



※ Install the product on a din rail with a width of 35 mm.

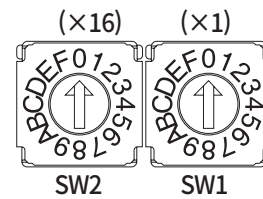
Names and Functions of Each Part [Ezi-IO-CT-CNT02-E]



1. Network ID Switch (SW1, SW2)

They are Switches to set the CC-Link IE TSN ID(Remote Station ID) node address, and they represent a hexadecimal number.

SW1 indicates the units digit ($\times 1$), and SW2 indicates the tens digit ($\times 16$).



2. Status LED

Power Status LED

Indicator	Color	Status	Description
PWR	Red	OFF	Power is not supplied
		ON	Power is supplied

Module Status LED

Indicator	Color	Status	Description
RUN	Green	OFF	INIT state or power off
		ON	OPERATIONAL state

Operation Error LED

Indicator	Color	Status	Description
ERR	Red	OFF	No error or power off
		ON	Error occurred

CC-Link IE TSN LED

Indicator	Color	Status	Description
P1 / P2	Green	OFF	Link inactive
		ON	Link active

Counter Operation Status LED

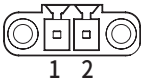
Indicator	Color	Status	Description
CH 1 / CH 2	Yellow	OFF	CH 1 / CH 2 is not ready to count
		ON	CH 1 / CH 2 is ready to count

I/O Status LED

Indicator	Color	Status	Description
A1 / A2	Green	OFF	A signal is OFF
		ON	A signal is ON
B1 / B2	Green	OFF	B signal is OFF
		ON	B signal is ON
Z1 / Z2	Green	OFF	Z signal is OFF
		ON	Z signal is ON
LTA1 / LTA2	Green	OFF	LTA(Latpoints A) signal is OFF
		ON	LTA(Latpoints A) signal is ON
LTB1 / LTB2	Green	OFF	LTB(Latpoints B) signal is OFF
		ON	LTB(Latpoints B) signal is ON
RST1 / RST2	Green	OFF	RST(Reset) signal is OFF
		ON	RST(Reset) signal is ON
CP1 / CP2	Green	OFF	CP(Comparison Out) signal is OFF
		ON	CP(Comparison Out) signal is ON

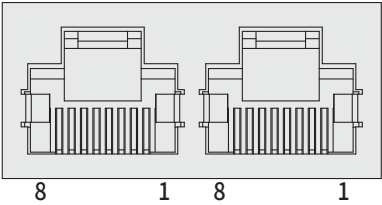
3. Power Connector (CN1)

No.	Function	I/O
1	24 V DC	Input
2	GND	Input

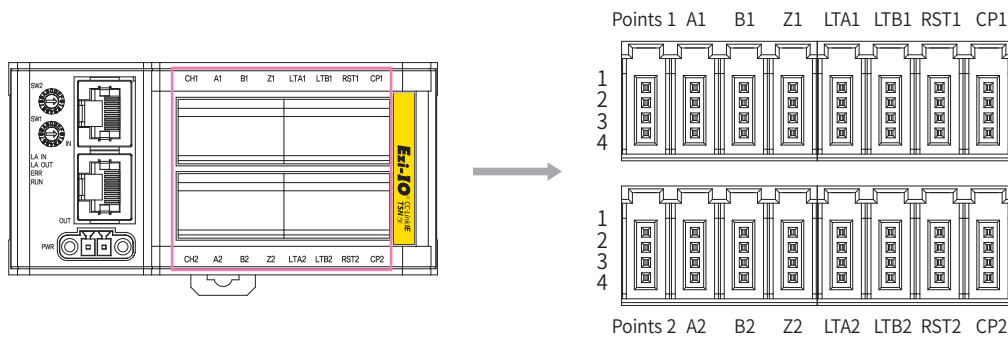


4. CC-Link IE TSN Connector (CN3, CN4)

No.	Function	No.	Function
1	TD+	6	RD-
2	TD-	7	----
3	RD+	8	----
4	----	Connector hood	F.GND
5	----		

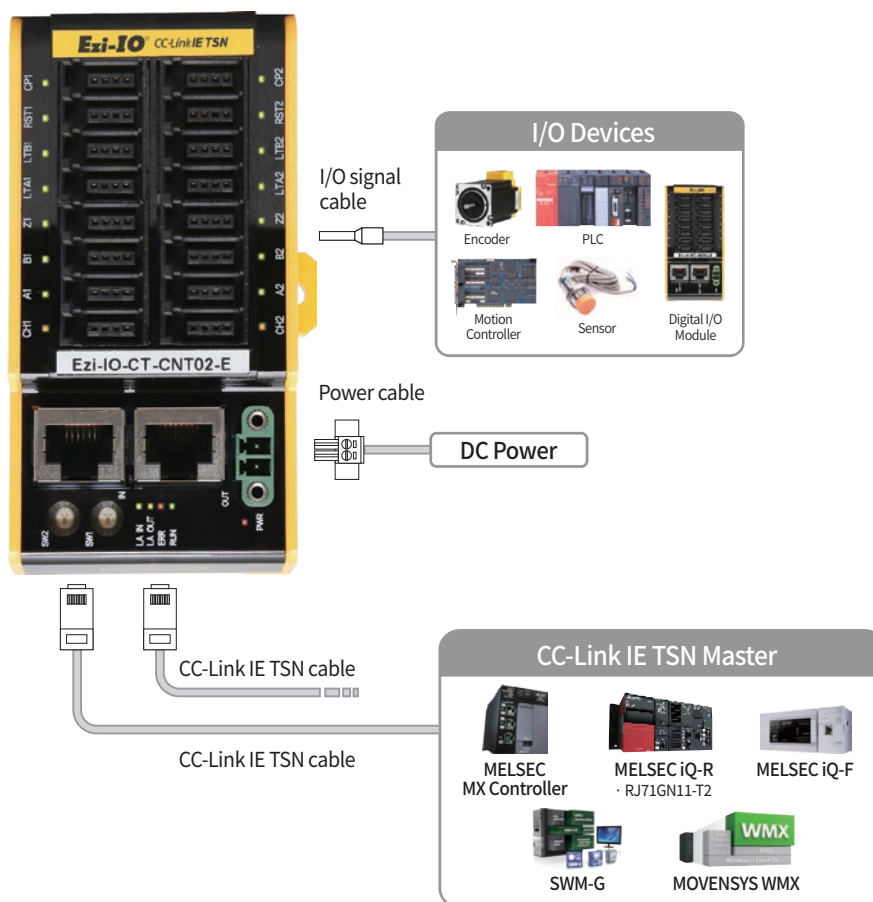


5. I/O Signal Connector (CN2)



CN 1					CN 2				
Indicator	No.	Name	Function	I/O	Indicator	No.	Name	Function	I/O
Ch 1	1	NC	----	----	Ch 2	1	NC	----	----
	2	5V	5 V DC	Output		2	5V	5 V DC	Output
	3	GND	GND	Output		3	GND	GND	Output
	4	NC	----	----		4	NC	----	----
A1	1	AV1	A Pulse Input Power (24 V)	Input	A2	1	AV2	A Pulse Input Power (24 V)	Input
	2	A1+	A+	Input		2	A2+	A+	Input
	3	A1-	A-	Input		3	A2-	A-	Input
	4	AG1	A Pulse Input GND	Input		4	AG2	A Pulse Input GND	Input
B1	1	BV1	B Pulse Input Power (24 V)	Input	B2	1	BV2	B Pulse Input Power (24 V)	Input
	2	B1+	B+	Input		2	B2+	B+	Input
	3	B1-	B-	Input		3	B2-	B-	Input
	4	BG1	B Pulse Input GND	Input		4	BG2	B Pulse Input GND	Input
Z1	1	ZV1	Z Pulse Input Power (24 V)	Input	Z2	1	ZV2	Z Pulse Input Power (24 V)	Input
	2	Z1+	Z+	Input		2	Z2+	Z+	Input
	3	Z1-	Z-	Input		3	Z2-	Z-	Input
	4	ZG1	Z Pulse Input GND	Input		4	ZG2	Z Pulse Input GND	Input
LTA1	1	LAV1	Latch A Input Power (24 V)	Input	LTA2	1	LAV2	Latch A Input Power (24 V)	Input
	2	LTA1+	Latch A(+)	Input		2	LTA2+	Latch A(+)	Input
	3	LTA1-	Latch A(-)	Input		3	LTA2-	Latch A(-)	Input
	4	LAG1	Latch A Input GND	Input		4	LAG2	Latch A Input GND	Input
LTB1	1	LBV1	Latch B Input Power (24 V)	Input	LTB2	1	LBV2	Latch B Input Power (24 V)	Input
	2	LTB1+	Latch B(+)	Input		2	LTB2+	Latch B(+)	Input
	3	LTB1-	Latch B(-)	Input		3	LTB2-	Latch B(-)	Input
	4	LBG1	Latch B Input GND	Input		4	LBG2	Latch B Input GND	Input
RST1	1	RV1	Reset Input Power (24 V)	Input	RST2	1	RV2	Reset Input Power (24 V)	Input
	2	RST1+	Reset(+)	Input		2	RST2+	Reset(+)	Input
	3	RST1-	Reset(-)	Input		3	RST2-	Reset(-)	Input
	4	RG1	Reset Input GND	Input		4	RG2	Reset Input GND	Input
CP1	1	UCP1+	User Comparison Output(+)	Output	CP2	1	UCP2+	User Comparison Output(+)	Output
	2	5CP1	5 V Comparison Output	Output		2	5CP2	5 V Comparison Output	Output
	3	GND	GND	Output		3	GND	GND	Output
	4	UCP1-	User Comparison Output(-)	Output		4	UCP2-	User Comparison Output(-)	Output

System Configuration [Ezi-IO-CT-CNT02-E]



1. Accessories

Connectors

Purpose	Item	Part Number	Manufacturer
Power(CN1)	Terminal Block	MC421-38102	DECA
I/O Connection(CN2)	e-CON Plug Connector	CNE-P04-YW	Autonics

※ The connectors above are supplied with the product. If you are using other parts, please make sure they meet the specifications

2. Options

CC-Link IE TSN Cable

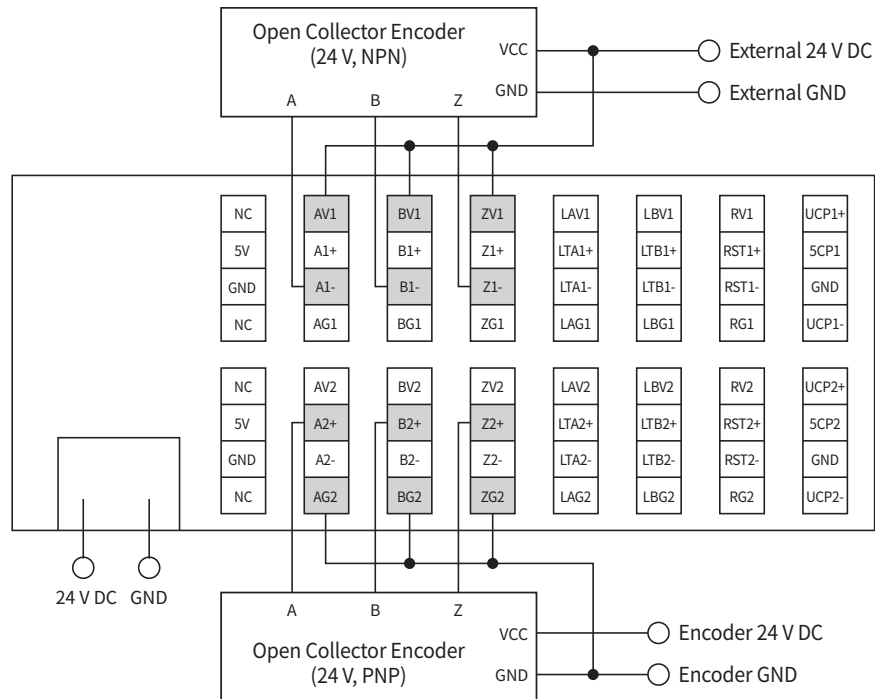
Purpose	Part Number	Length [m]	Remarks
CC-Link IE TSN Connection (CN3, CN4)	CGNR-EC-001F	1	- STP(Shielded Twisted Pair) Cable - Category 5e or higher - Max. Cable Length: 100 m - Fixed Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

※ If you need cables with length(in units of 1 m) not listed on the table or robot cables, please contact FASTECH Points for more information.

External Wiring Diagram [Ezi-IO-CT-CNT02-E]

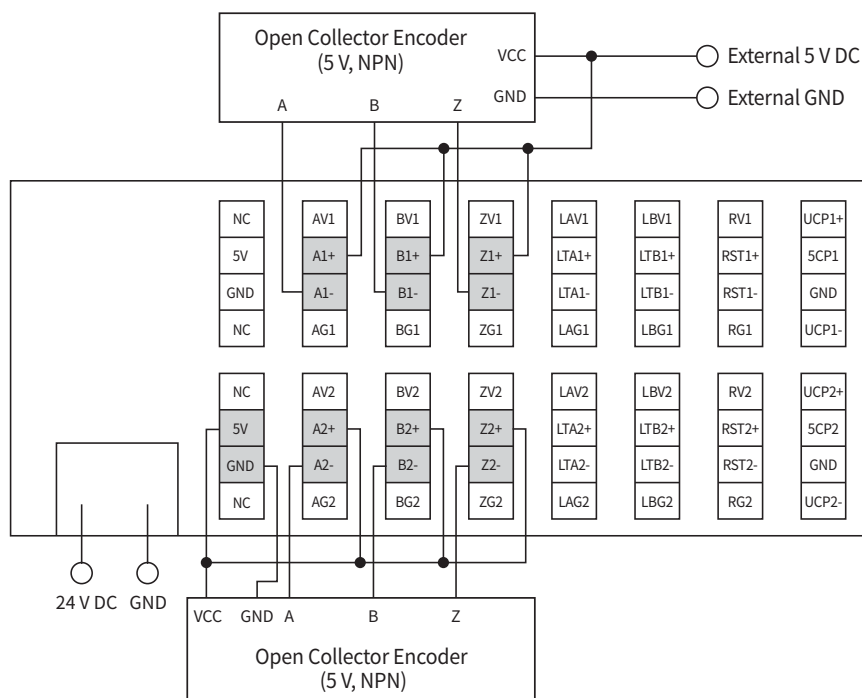
Pulse Input Part

1. When connecting with 24 V DC open collector output type encoder



※ If the module and the encoder use the same power supply, the photocoupler isolation is not possible.

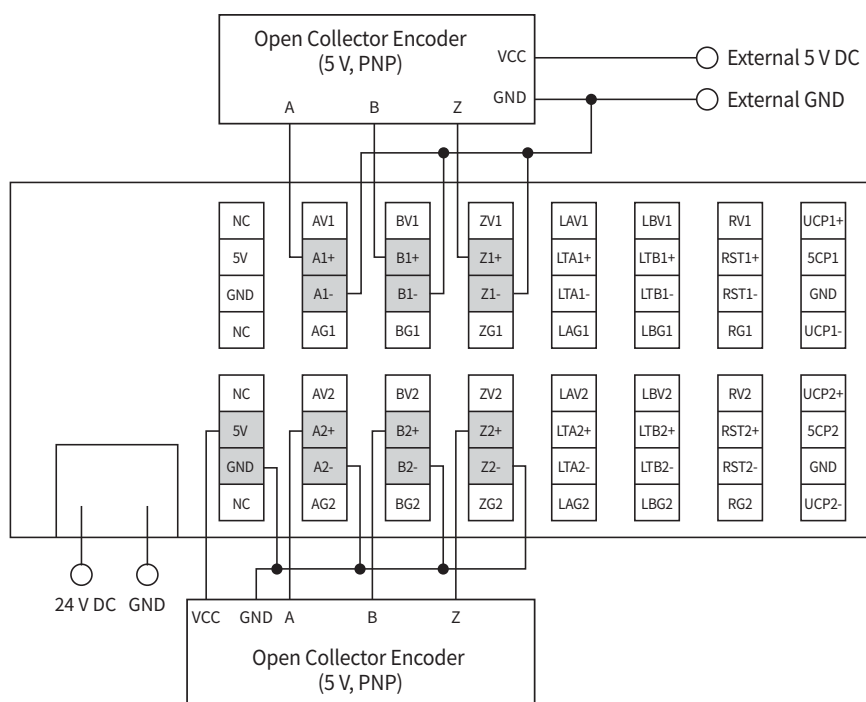
2. When connecting with 5 V DC NPN open collector output type encoder



※ If the 5 V DC output inside the product is used as the encoder power, photocoupler isolation is not possible.

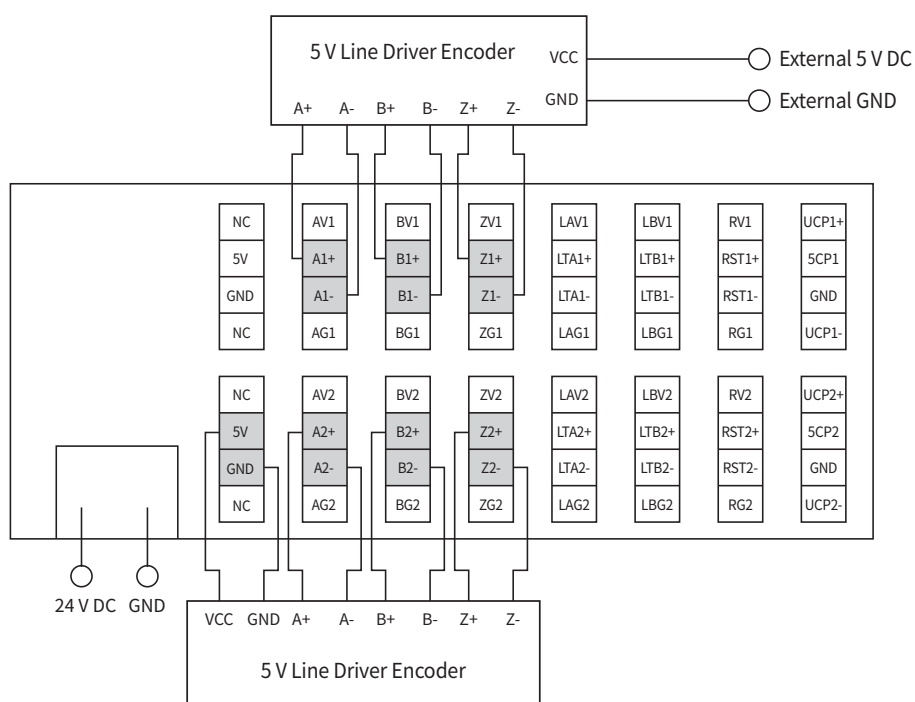
External Wiring Diagram [Ezi-IO-CT-CNT02-E]

3. When connecting with 5 V DC PNP open collector output type encoder



※ If the 5 V DC output inside the product is used as the encoder power, photocoupler isolation is not possible.

4. When connecting with 5 V DC line driver output type encoder

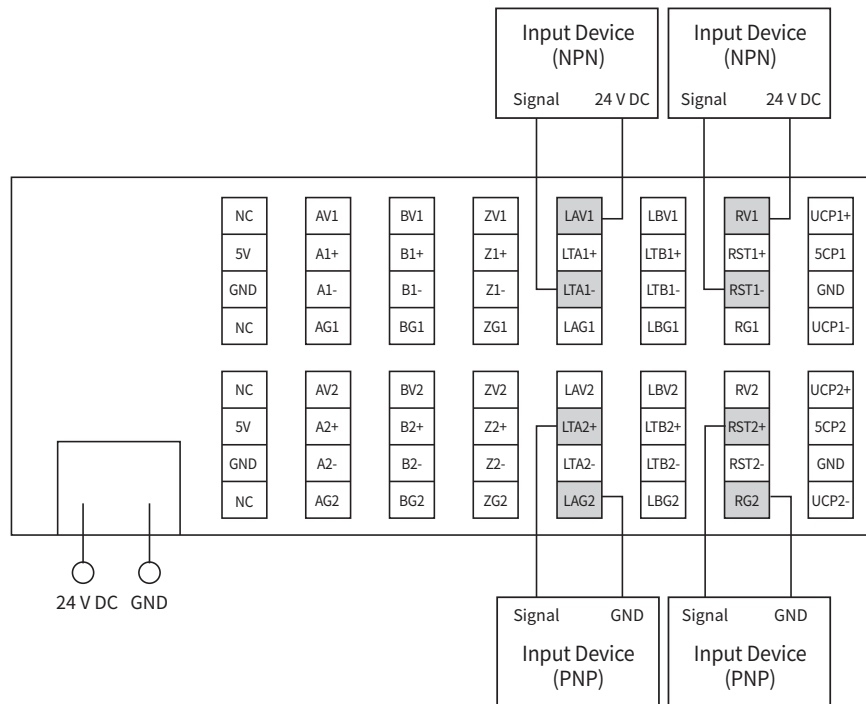


※ If the 5 V DC output inside the product is used as the encoder power, photocoupler isolation is not possible.

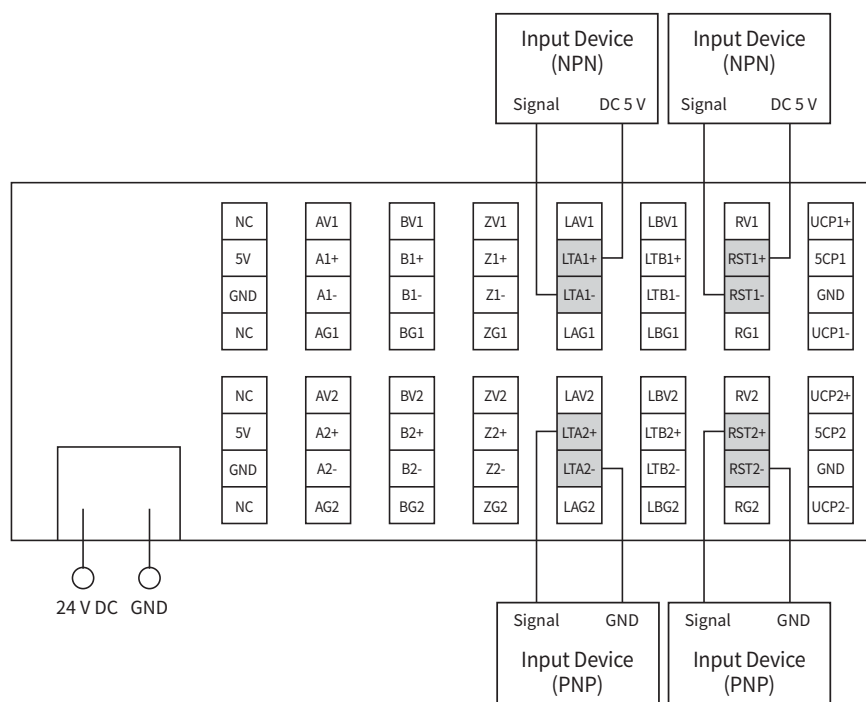
External Wiring Diagram [Ezi-IO-CT-CNT02-E]

Control Input Part

1. When connecting with 24 V DC open collector output type input device



2. When connecting with 5 V DC open collector output type input device

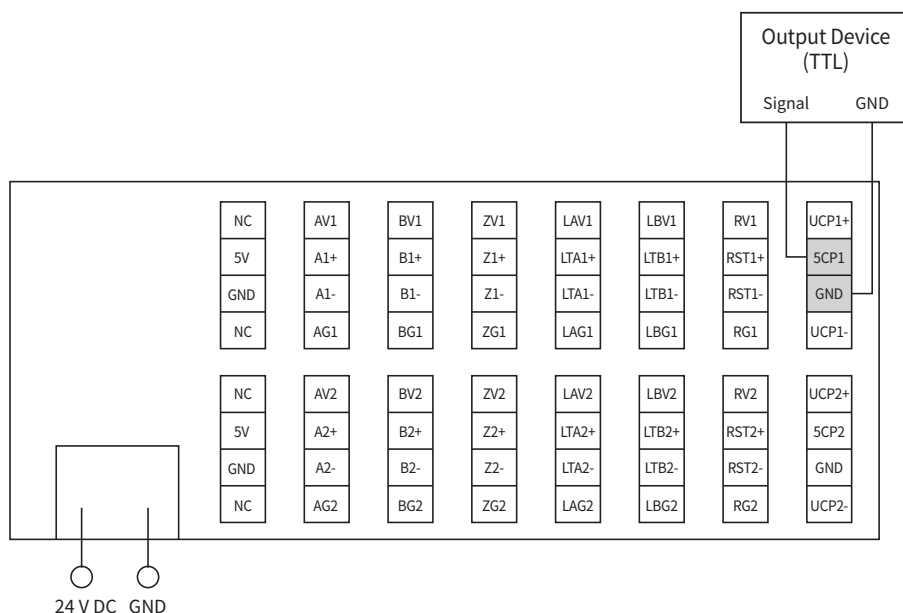


※ e.g. Input Device : PLC, Motion Controller, Digital Output Module, Limit Sensor , Proximity Sensor, etc.

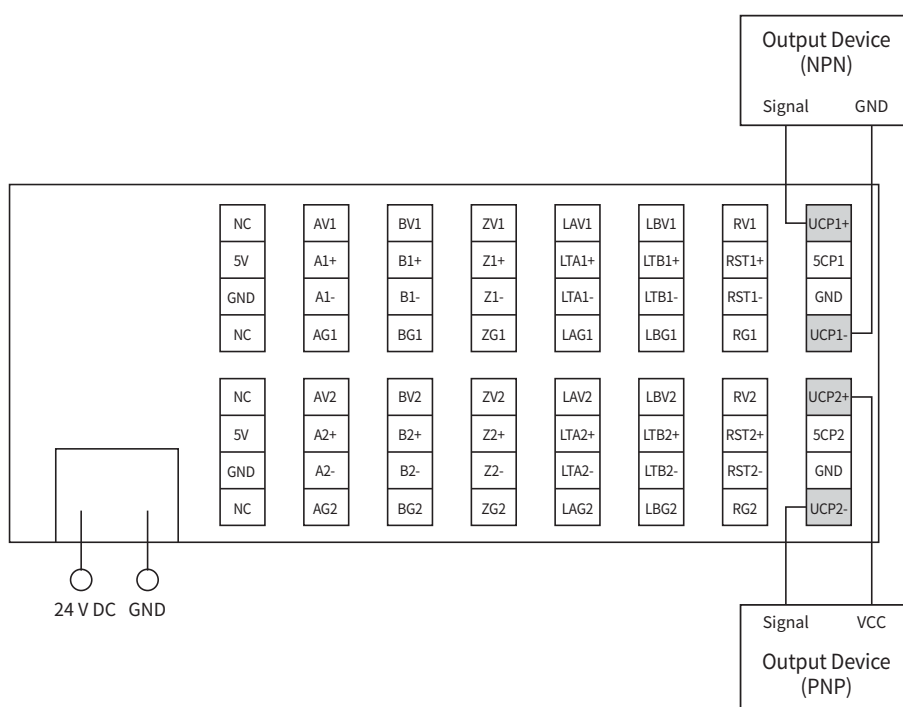
External Wiring Diagram [Ezi-IO-CT-CNT02-E]

Comparison Output Part

1. TTL Output



2. Open Collector Output



※ e.g. Output Device: PLC, Motion Controller, Digital Input Module, etc.

MEMO



Fast Accurate Smooth Motion

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