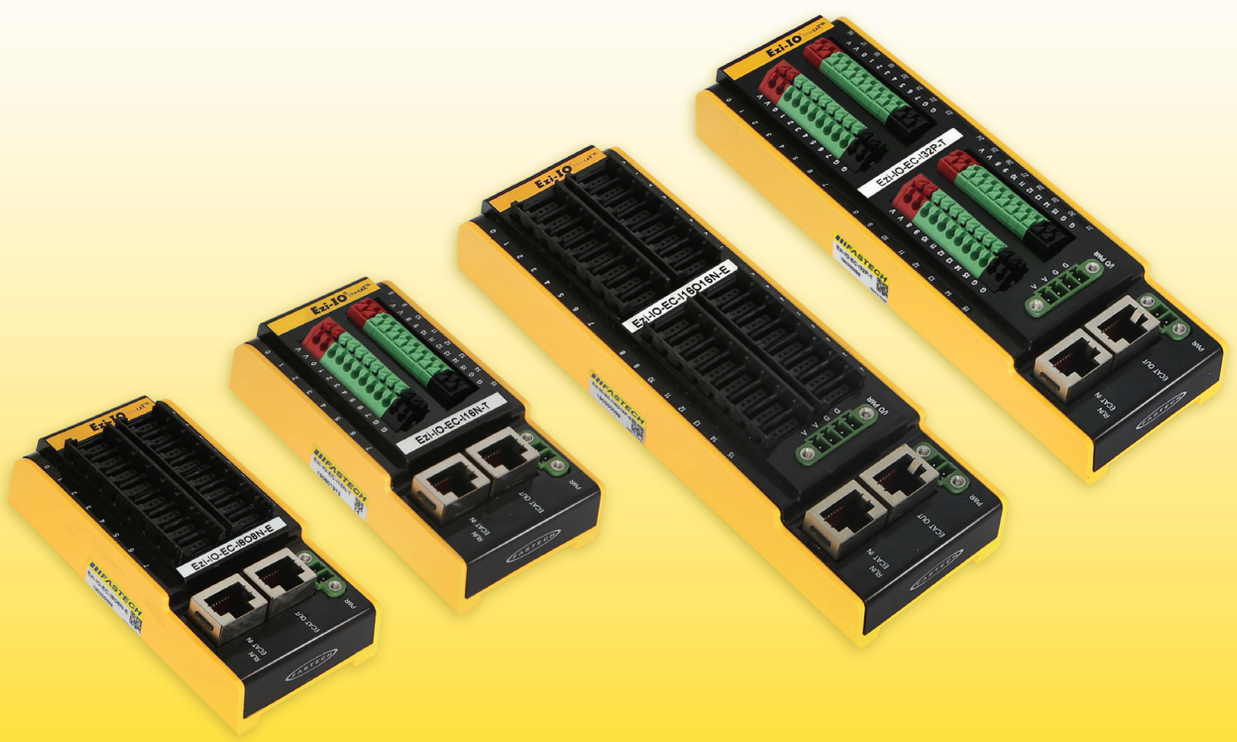
Ezi-IO®

Input/Output Module

- EtherCAT Based Digital I/O Module
- All EtherCAT Synchronization Modes Supported
- CiA 401 Profile Supported
- Simple and Easy Wiring

EtherCAT®

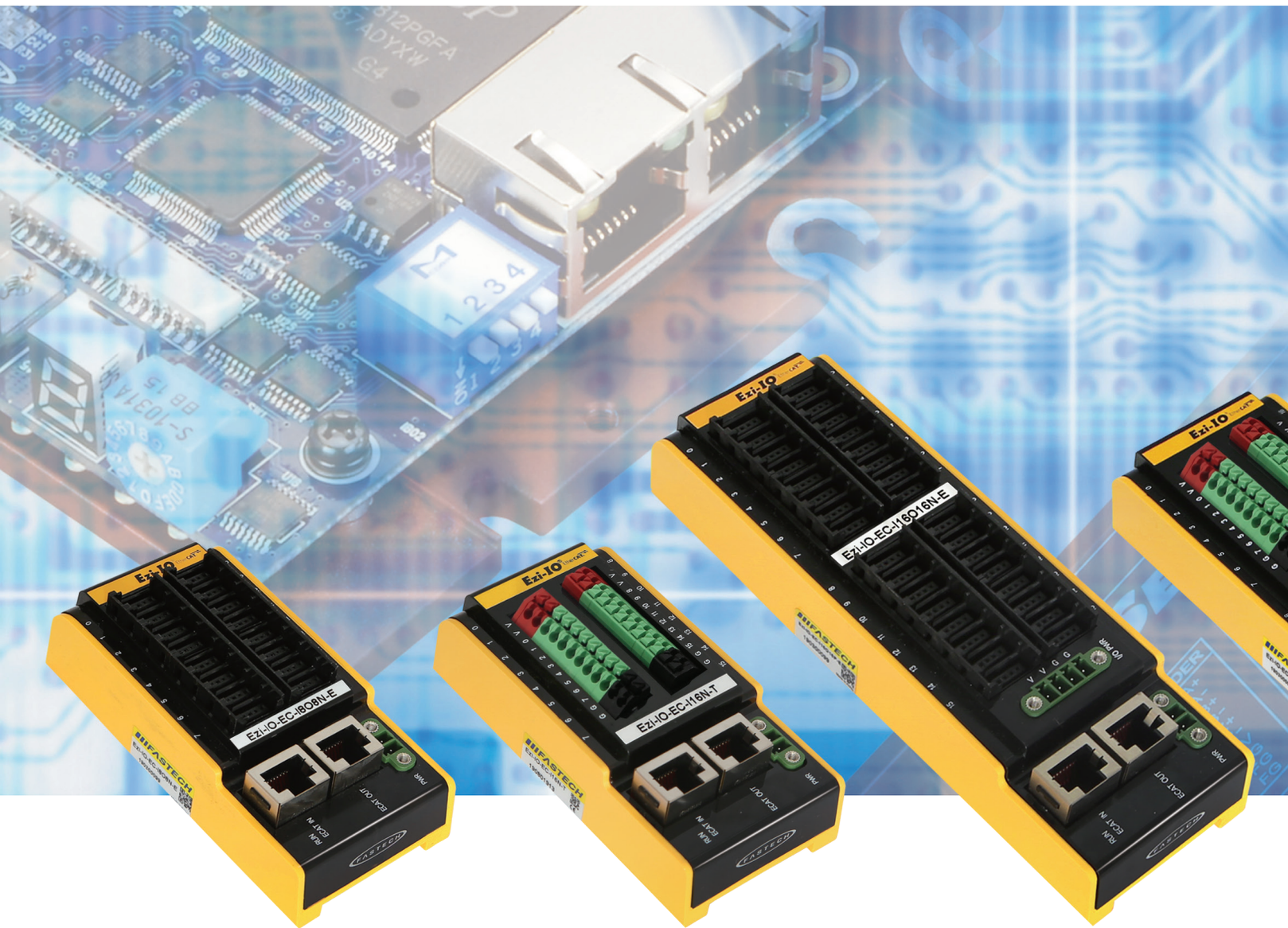
DIO



CE

FASTECH

Fast, Accurate, Smooth Motion



FASTECH

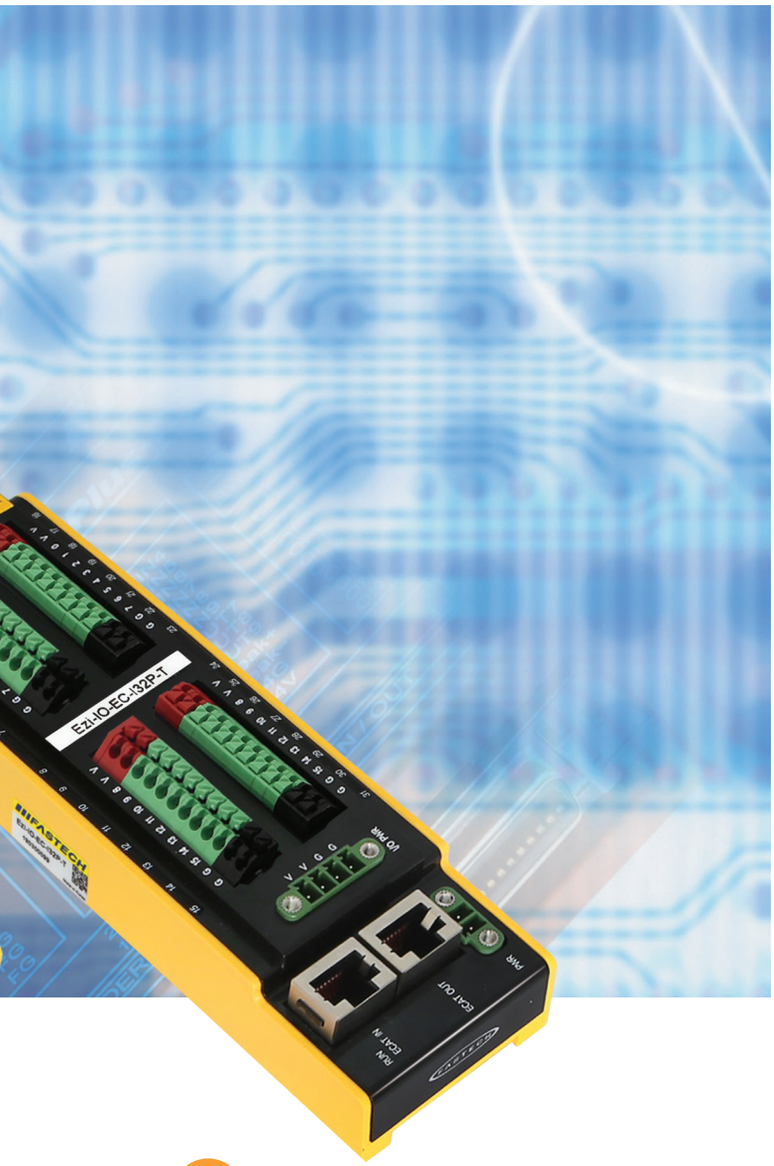
Fast, Accurate, Smooth Motion

Ezi-IO®

Input/Output Module

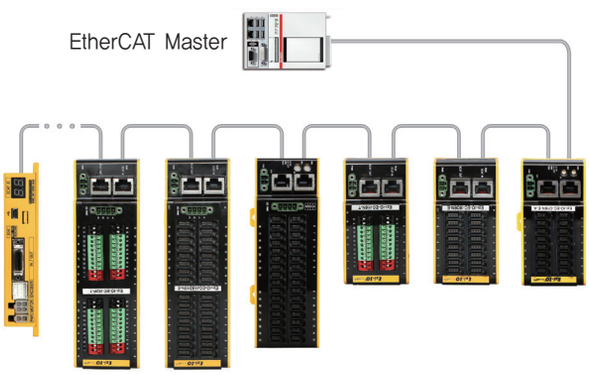
EtherCAT®

DIO



1 EtherCAT Based Digital I/O Module

Ezi-IO EtherCAT DIO is a digital I/O module which supports EtherCAT, a fieldbus based on high speed Ethernet (100Mbps, Full-Duplex). Ezi-IO EtherCAT DIO is an EtherCAT Slave module which supports CoE(-CAN Application layer over EtherCAT). It supports CiA 401 profile, and can be connected to the EtherCAT master without topology limitation.



2 Simple and Easy Wiring

Ezi-IO EtherCAT DIO provides e-CON connector type and push-in terminal block type products, so you can select them according to the needs.
The e-CON connector is widely used in the sensor connector industry, and the push-in type terminal block can be easily connected to various devices using ferrule terminals, making the wiring much simpler and easier.

3 EtherCAT Synchronization Modes

Ezi-IO EtherCAT DIO supports all EtherCAT synchronization modes. You can select from Free Run, SM Event, DC SYNC Event synchronization mode according to the purpose of use. (Only for Option A Type)

4 Various I/O module

Ezi-IO EtherCAT DIO provides 16CH and 32CH modules. There are 16CH DC input module, 16CH transistor output module, and 8CH DC input/8CH transistor output mixed module for 16CH type products.
In addition, therer are 32CH DC input module, 32CH transistor output module, 16CH DC input/16CH transistor output mixed module for 32CH type products. Also, Ezi-IO EtherCAT DIO provides NPN/PNP compatible modules to support various I/O devices.

● Ezi-IO EtherCAT DIO Part Numbering

Ezi-IO-EC-I16N-E-A

Product Name

Module Series
EC : EtherCAT

Option
A : Address Selectable

I/O Connection Method
E : e-CON
T : Terminal Block

I/O Type*1
I16N : 16CH DC Input, NPN
I16P : 16CH DC Input, PNP
O16N : 16CH Transistor Output, NPN
O16P : 16CH Transistor Output, PNP
I8O8N : 8CH DC Input / 8CH Transistor Output, NPN
I8O8P : 8CH DC Input / 8CH Transistor Output, PNP
I32N : 32CH DC Input, NPN
I32P : 32CH DC Input, PNP
O32N : 32CH Transistor Output, NPN
O32P : 32CH Transistor Output, PNP
I16O16N : 16CH DC Input / 16CH Transistor Output, NPN
I16O16P : 16CH DC Input / 16CH Transistor Output, PNP

*1: NPN and PNP are classified as follows according to I/O type.

DC Input	NPN	Positive Common Type
	PNP	Negative Common Type
Transistor Output	NPN	Sink Output
	PNP	Source Output

● Ezi-IO EtherCAT DIO Part Number

Part Number	Remarks
Ezi-IO-EC-I16N-E	16CH e-CON Type
Ezi-IO-EC-I16P-E	
Ezi-IO-EC-O16N-E	
Ezi-IO-EC-O16P-E	
Ezi-IO-EC-I8O8N-E	
Ezi-IO-EC-I8O8P-E	
Ezi-IO-EC-I16N-T	16CH Terminal Block Type
Ezi-IO-EC-I16P-T	
Ezi-IO-EC-O16N-T	
Ezi-IO-EC-O16P-T	
Ezi-IO-EC-I8O8N-T	
Ezi-IO-EC-I8O8P-T	
Ezi-IO-EC-I16N-E-A	16CH Option A Type (e-CON Type only)
Ezi-IO-EC-I16P-E-A	
Ezi-IO-EC-O16N-E-A	
Ezi-IO-EC-O16P-E-A	
Ezi-IO-EC-I8O8N-E-A	
Ezi-IO-EC-I8O8P-E-A	

Part Number	Remarks
Ezi-IO-EC-I32N-E	32CH e-CON Type
Ezi-IO-EC-I32P-E	
Ezi-IO-EC-O32N-E	
Ezi-IO-EC-O32P-E	
Ezi-IO-EC-I16O16N-E	
Ezi-IO-EC-I16O16P-E	
Ezi-IO-EC-I32N-T	32CH Terminal Block Type
Ezi-IO-EC-I32P-T	
Ezi-IO-EC-O32N-T	
Ezi-IO-EC-O32P-T	
Ezi-IO-EC-I16O16N-T	
Ezi-IO-EC-I16O16P-T	
Ezi-IO-EC-I32N-E-A	32CH Option A Type (e-CON Type only)
Ezi-IO-EC-I32P-E-A	
Ezi-IO-EC-O32N-E-A	
Ezi-IO-EC-O32P-E-A	
Ezi-IO-EC-I16O16N-E-A	
Ezi-IO-EC-I16O16P-E-A	

● Specifications of Module

Model			Ezi-IO-EC-I16□-■	Ezi-IO-EC-O16□-■	Ezi-IO-EC-I8O8□-■
Input Voltage			DC24V±10%		
Current Consumption			Max. 150mA (Except load current)		
Operating Condition	Ambient Temperature		· In Use: 0~50℃ · In Storage: -20~70℃		
	Humidity		· In Use: 35~85% RH (Non-Condensing) · In Storage: 10~90% RH (Non-Condensing)		
	Vib. Resist.		0.5g		
Function	Input	Number of Input Channels	16CH	–	8CH
		Rated Input Voltage	DC24V		DC24V
		Rated Input Current	5mA/CH		5mA/CH
		Isolation Method	None		None
		Common Method	16CH/COM		8CH/COM
		Off→On Response Time	10μs or lower		10μs or lower
		On→Off Response Time	70μs or lower		70μs or lower
	Output	Number of Output Channels	–	16CH	8CH
		Rated Output Voltage		DC24V	DC24V
		Rated Output Current		0.2A/CH	0.2A/CH
		Isolation Method		None	None
		Common Method		16CH/COM	8CH/COM
		Off→On Response Time		4μs or lower	4μs or lower
		On→Off Response Time		190μs or lower	190μs or lower
LED Display			· Power Status(PWR) · EtherCAT Status(RUN) · EtherCAT Connection(ECAT IN, ECAT OUT) · I/O Status(0~15)		· Power Status(PWR) · EtherCAT Status(RUN) · EtherCAT Connection (ECAT IN, ECAT OUT) · I/O Status(0~7/0~7)
EtherCAT	Synchronization		Free RUN, SM Event		
	Bus Interface		2×RJ45 Connector		
	Cable		STP (Shielded Twisted Pair) Cable, Category 5e or higher / Max. 100m		

* □: NPN / PNP Type
■: e-CON / Terminal Block Type

● Specifications of Module

Model			Ezi-IO-EC-I16□-E-A	Ezi-IO-EC-O16□-E-A	Ezi-IO-EC-I8O8□-E-A
Input Voltage			DC24V±10%		
Current Consumption			Max. 200mA (Except load current)		
Operating Condition	Ambient Temperature		· In Use: 0~50℃ · In Storage: -20~70℃		
	Humidity		· In Use: 35~85% RH (Non-Condensing) · In Storage: 10~90% RH (Non-Condensing)		
	Vib. Resist.		0.5g		
Function	Input	Number of Input Channels	16CH	–	8CH
		Rated Input Voltage	DC24V		DC24V
		Rated Input Current	5mA/CH		5mA/CH
		Isolation Method	None		None
		Common Method	16CH/COM		8CH/COM
		Input Filter	Max. 40ms (Filter Resolution : 200μs)		Max. 40ms (Filter Resolution : 200μs)
		Off→On Response Time	30μs or lower		30μs or lower
		On→Off Response Time	90μs or lower		90μs or lower
	Output	Number of Output Channels	–	16CH	8CH
		Rated Output Voltage		DC24V	DC24V
		Rated Output Current		0.5A/CH (3A/COM)	0.5A/CH (2A/COM)
		Isolation Method		None	None
		Common Method		16CH/COM	8CH/COM
		Off→On Response Time		20μs or lower	20μs or lower
		On→Off Response Time		210μs or lower	210μs or lower
LED Display			· Power Status(PWR) · EtherCAT Status(RUN) · Operation Error(ERR) · EtherCAT Connection(LA IN, LA OUT) · I/O Status(0~15)		· Power Status(PWR) · EtherCAT Status(RUN) · Operation Error(ERR) · EtherCAT Connection (LA IN, LA OUT) · I/O Status(0~7/0~7)
EtherCAT	Protocol		CoE (CiA 401 I/O Profile), FoE (Firmware Download)		
	Synchronization		Free Run, SM Event, DC SYNC Event		
	Bus Interface		2×RJ45 Connector		
	Cable		STP (Shielded Twisted Pair) Cable, Category 5e or higher / Max. 100m		

* □: NPN / PNP Type

● Specifications of Module

Model			Ezi-IO-EC-I32□-■	Ezi-IO-EC-O32□-■	Ezi-IO-EC-I16O16□-■
Input Voltage			DC24V±10%		
Current Consumption			· Control Power : Max. 140mA · I/O Power : Max. 110mA (Except Load Current)	· Control Power : Max. 200mA · I/O Power : Max. 70mA (Except Load Current)	· Control Power : Max. 170mA · I/O Power : Max. 90mA (Except Load Current)
Operating Condition	Ambient Temperature		· In Use: 0~50℃ · In Storage: -20~70℃		
	Humidity		· In Use: 35~85% RH (Non-Condensing) · In Storage: 10~90% RH (Non-Condensing)		
	Vib. Resist.		0.5g		
Function	Input	Number of Input Channels	32CH	–	16CH
		Rated Input Voltage	DC24V		DC24V
		Rated Input Current	5mA/CH		5mA/CH
		Isolation Method	Photocoupler Isolation		Photocoupler Isolation
		Common Method	16CH/COM		16CH/COM
		Off→On Response Time	10μs or lower		10μs or lower
		On→Off Response Time	70μs or lower		70μs or lower
	Output	Number of Output Channels	–	32CH	16CH
		Rated Output Voltage		DC24V	DC24V
		Rated Output Current		0.2A/CH	0.2A/CH
		Isolation Method		Photocoupler Isolation	Photocoupler Isolation
		Common Method		16CH/COM	16CH/COM
		Off→On Response Time		4μs or lower	4μs or lower
		On→Off Response Time		190μs or lower	190μs or lower
LED Display			· Power Status(PWR) · EtherCAT Status(RUN) · EtherCAT Connection(ECAT IN, ECAT OUT) · I/O Status(0~31)		· Power Status(PWR) · EtherCAT Status(RUN) · EtherCAT Connection (ECAT IN, ECAT OUT) · I/O Status(0~15/0~15)
EtherCAT	Synchronization		Free RUN, SM Event		
	Bus Interface		2×RJ45 Connector		
	Cable		STP (Shielded Twisted Pair) Cable, Category 5e or higher / Max. 100m		

* □: NPN / PNP Type
■: e-CON / Terminal Block Type

● Specifications of Module

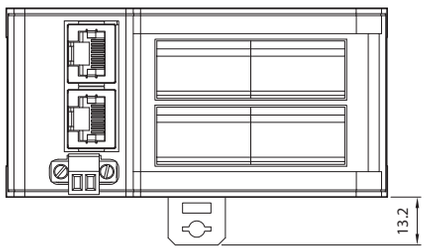
Model			Ezi-IO-EC-I32□-E-A	Ezi-IO-EC-O32□-E-A	Ezi-IO-EC-I16O16□-E-A
Input Voltage			DC24V±10%		
Current Consumption			· Control Power : Max. 180mA · I/O Power : Max. 110mA (Except Load Current)	· Control Power : Max. 240mA · I/O Power : Max. 70mA (Except Load Current)	· Control Power : Max. 220mA · I/O Power : Max. 90mA (Except Load Current)
Operating Condition	Ambient Temperature		· In Use: 0~50℃ · In Storage: -20~70℃		
	Humidity		· In Use: 35~85% RH (Non-Condensing) · In Storage: 10~90% RH (Non-Condensing)		
	Vib. Resist.		0.5g		
Function	Input	Number of Input Channels	32CH	–	16CH
		Rated Input Voltage	DC24V		DC24V
		Rated Input Current	5mA/CH		5mA/CH
		Isolation Method	Photocoupler Isolation		Photocoupler Isolation
		Common Method	16CH/COM		16CH/COM
		Input Filter	Max. 40ms (Filter Resolution : 200μs)		Max. 40ms (Filter Resolution : 200μs)
		Off→On Response Time	30μs or lower		30μs or lower
		On→Off Response Time	90μs or lower		90μs or lower
	Output	Number of Output Channels	–	32CH	16CH
		Rated Output Voltage		DC24V	DC24V
		Rated Output Current		0.5A/CH (3A/COM)	0.5A/CH (3A/COM)
		Isolation Method		Photocoupler Isolation	Photocoupler Isolation
		Common Method		16CH/COM	16CH/COM
		Off→On Response Time		20μs or lower	20μs or lower
		On→Off Response Time		210μs or lower	210μs or lower
LED Display			· Power Status(PWR) · EtherCAT Status(RUN) · Operation Error(ERR) · EtherCAT Connection(LA IN, LA OUT) · I/O Status(0~31)		· Power Status(PWR) · EtherCAT Status(RUN) · Operation Error(ERR) · EtherCAT Connection (LA IN, LA OUT) · I/O Status(0~15/0~15)
EtherCAT	Protocol		CoE (CiA 401 I/O Profile), FoE (Firmware Download)		
	Synchronization		Free Run, SM Event, DC SYNC Event		
	Bus Interface		2×RJ45 Connector		
	Cable		STP (Shielded Twisted Pair) Cable, Category 5e or higher / Max. 100m		

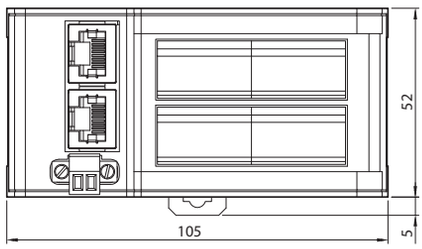
* □: NPN / PNP Type

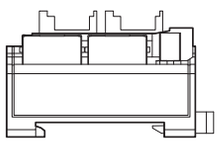
● Dimensions of Module [mm]

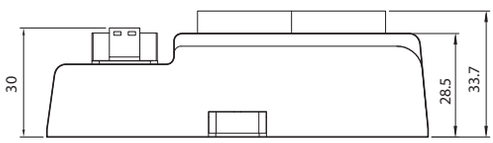
◆ 16CH e-CON Type

- Model : Ezi-IO-EC-I16□-E, Ezi-IO-EC-O16□-E, Ezi-IO-EC-I808□-E



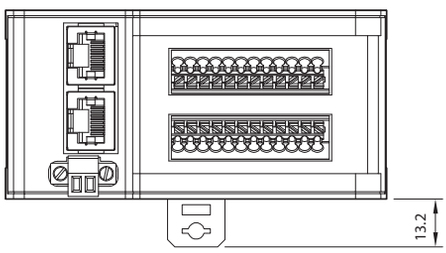


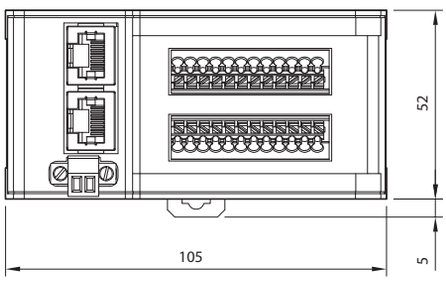


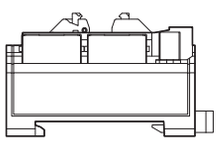


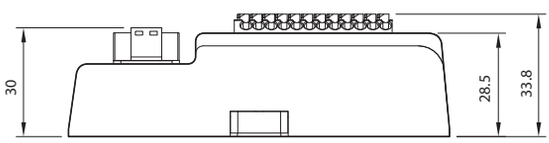
◆ 16CH Terminal Block Type

- Model : Ezi-IO-EC-I16□-T, Ezi-IO-EC-O16□-T, Ezi-IO-EC-I808□-T



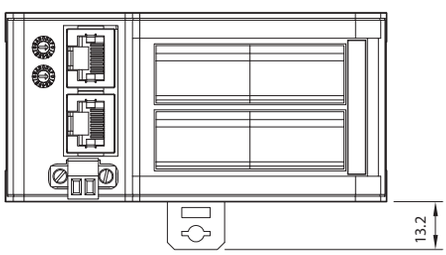


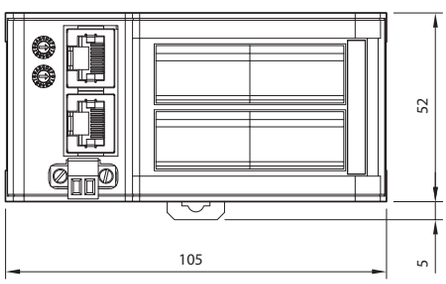


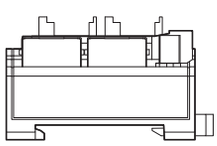


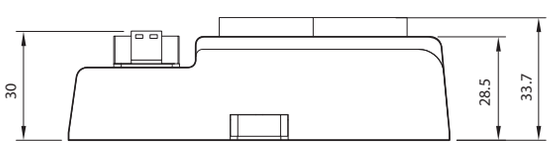
◆ 16CH Option A Type

- Model : Ezi-IO-EC-I16□-E-A, Ezi-IO-EC-O16□-E-A, Ezi-IO-EC-I808□-E-A







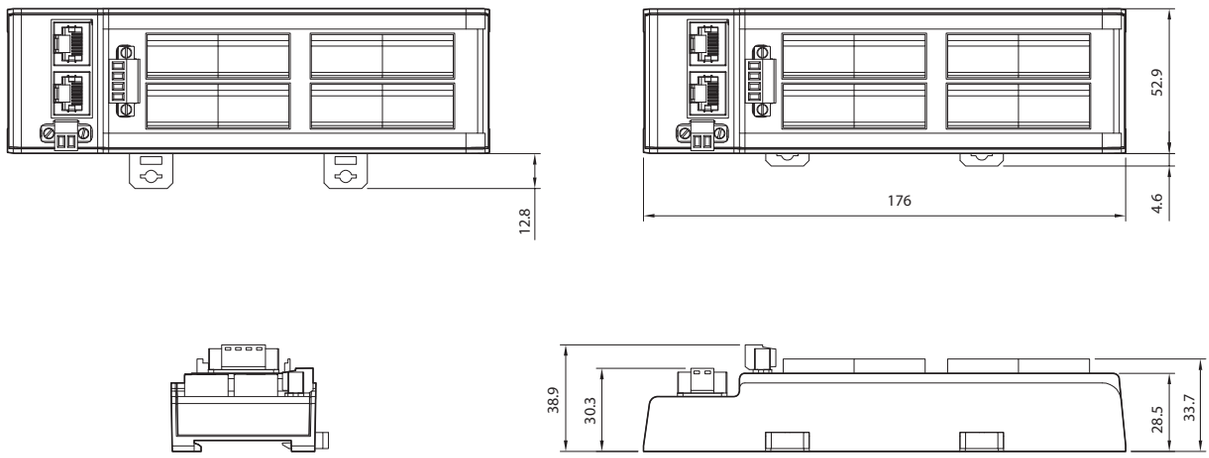


* □ : NPN / PNP Type
* Install the product on a din rail with a width of 35 mm.

● Dimensions of Module [mm]

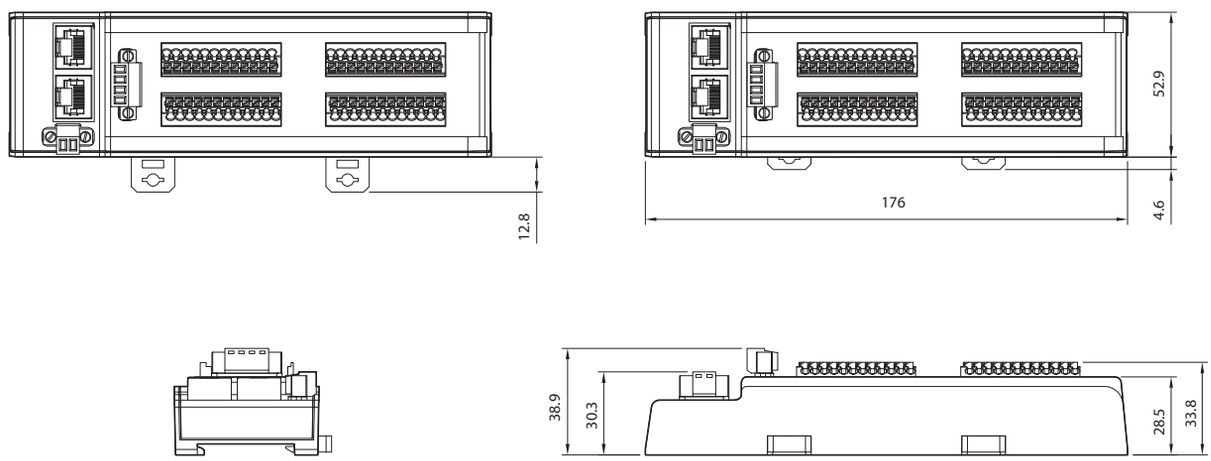
◆ 32CH e-CON Type

- Model : Ezi-IO-EC-I32□-E, Ezi-IO-EC-O32□-E, Ezi-IO-EC-I16O16□-E



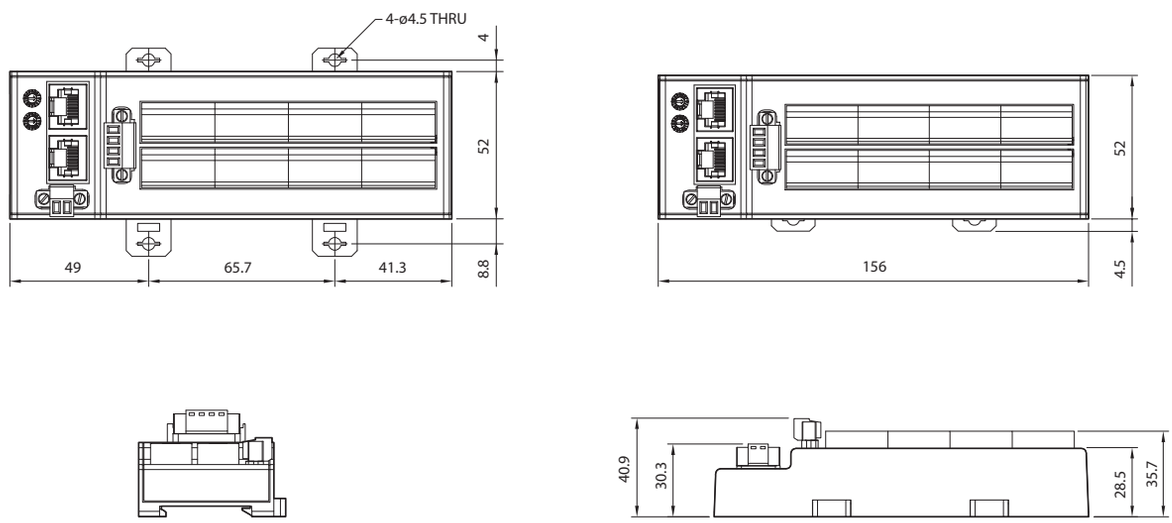
◆ 32CH Terminal Block Type

- Model : Ezi-IO-EC-I32□-T, Ezi-IO-EC-O32□-T, Ezi-IO-EC-I16O16□-T



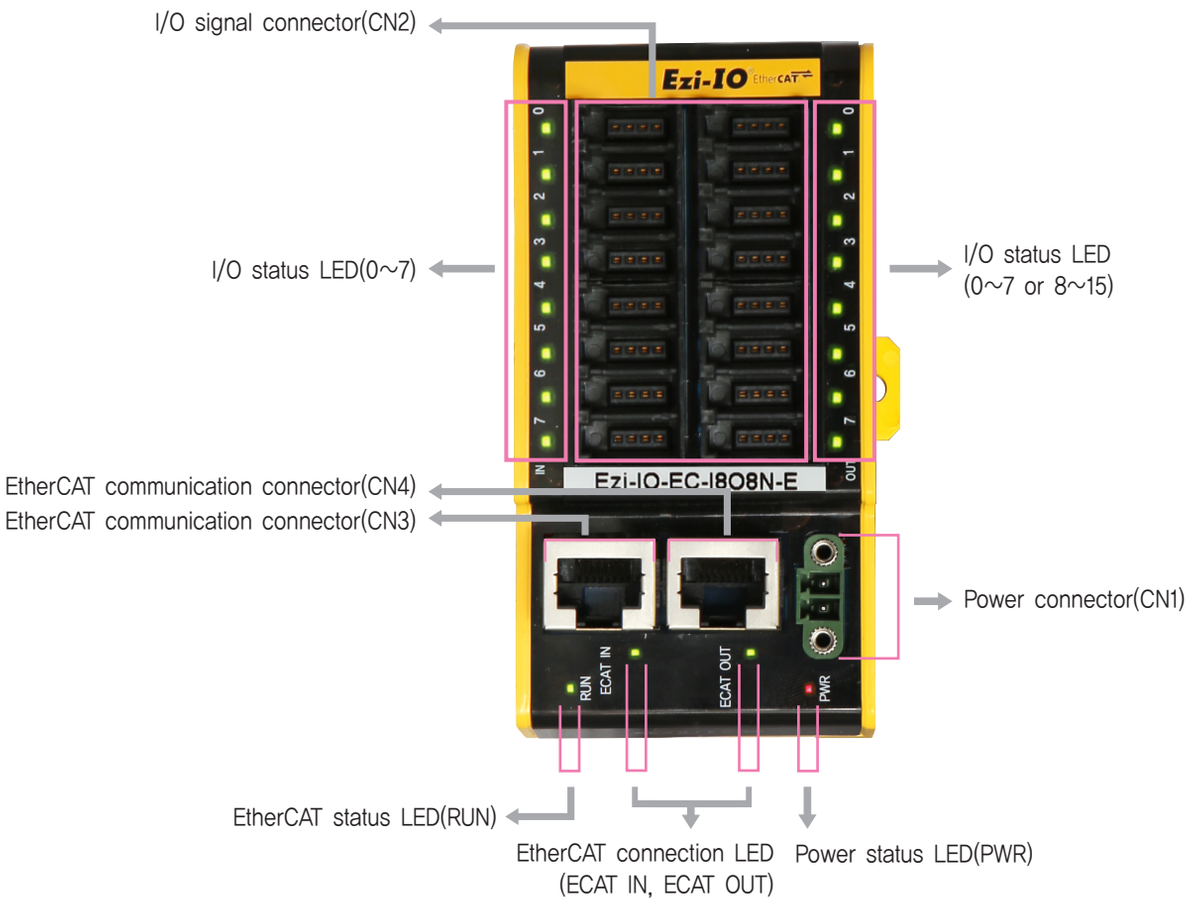
◆ 32CH Option A Type

- Model : Ezi-IO-EC-I32□-E-A, Ezi-IO-EC-O32□-E-A, Ezi-IO-EC-I16O16□-E-A



* □ : NPN / PNP Type
* Install the product on a din rail with a width of 35 mm.

● Settings and Operation [16CH e-CON Type]



1. Status LED

- Power Status LED

Name	Color	Status	Description
PWR	Red	OFF	Power is OFF
		ON	Power is ON

- EtherCAT Status LED

Name	Color	Status	Description
RUN	Green	OFF	State INIT or Power OFF
		Blinking	State PRE-OPERATIONAL
		Single Flash	State SAFE-OPERATIONAL
		ON	State OPERATIONAL
		Flickering	State BOOTSTRAP

- EtherCAT Connection LED

Name	Color	Status	Description
ECAT IN / ECAT OUT	Green	OFF	Link not Established
		ON	Link Established
		Flickering	Link Established and in Operation

• I/O Status LED

Name*	Color	Status	Description
0~15 0~7 / 0~7	Green	OFF	Input Module : Input is OFF Output Module : Output is OFF
		ON	Input Module : Input is ON Output Module : Output is ON

* For Ezi-IO-EC-I8O8N-E and Ezi-IO-EC-I8O8P-E modules, the name is written as 0~7 / 0~7 .

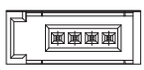
2. Power Connector(CN1)

No.	Function	I/O
1	DC24V	Input
2	GND	Input

1 2

3. I/O Signal Connector(CN2)

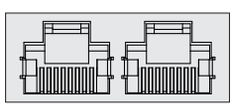
No.	Function	I/O
1	DC24V	Output
2	NC	----
3	GND	Output
4	SIGNAL	I/O



1 2 3 4

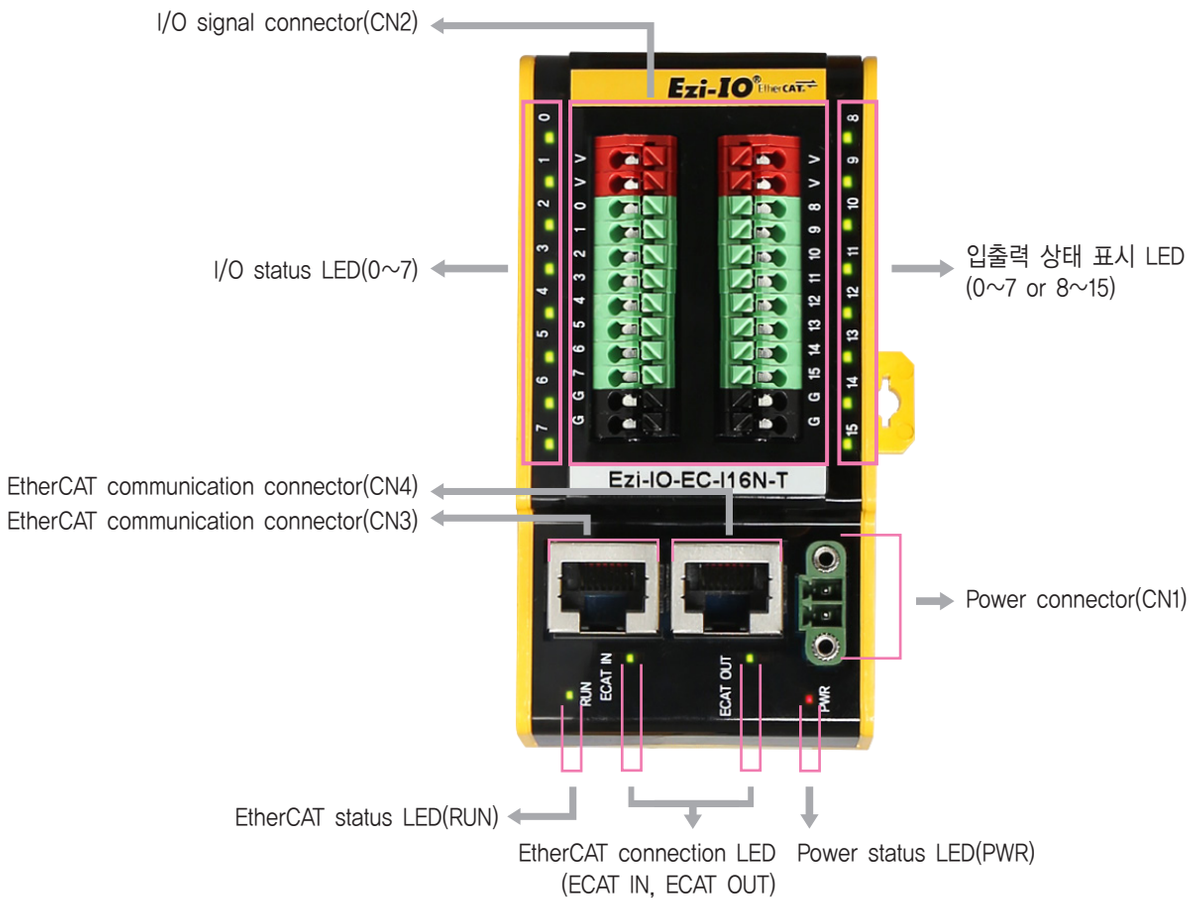
4. EtherCAT Communication Connection(CN3, CN4)

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



8 1 8 1

● Settings and Operation [16CH Terminal Block Type]



1. Status LED

- Power Status LED

Name	Color	Status	Description
PWR	Red	OFF	Power is OFF
		ON	Power is ON

- EtherCAT Status LED

Name	Color	Status	Description
RUN	Green	OFF	State INIT or Power OFF
		Blinking	State PRE-OPERATIONAL
		Single Flash	State SAFE-OPERATIONAL
		ON	State OPERATIONAL
		Flickering	State BOOTSTRAP

- EtherCAT Connection LED

Name	Color	Status	Description
ECAT IN / ECAT OUT	Green	OFF	Link not Established
		ON	Link Established
		Flickering	Link Established and in Operation

• I/O Status LED

Name*	Color	Status	Description
0~15 0~7 / 0~7	Green	OFF	Input Module : Input is OFF Output Module : Output is OFF
		ON	Input Module : Input is ON Output Module : Output is ON

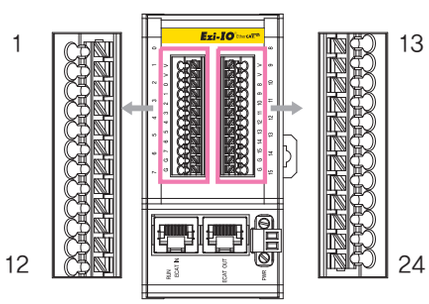
* For Ezi-IO-EC-I8O8N-T and Ezi-IO-EC-I8O8P-T modules, the name is written as 0~7 / 0~7 .

2. Power Connector(CN1)

No.	Function	I/O
1	DC24V	Input
2	GND	Input

3. I/O Signal Connector(CN2)

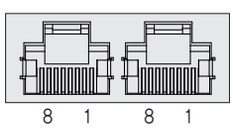
No.	Name*	Function	I/O
1	V	DC24V	Output
2	V	DC24V	Output
3	0	SIGNAL	I/O
4	1	SIGNAL	I/O
5	2	SIGNAL	I/O
6	3	SIGNAL	I/O
7	4	SIGNAL	I/O
8	5	SIGNAL	I/O
9	6	SIGNAL	I/O
10	7	SIGNAL	I/O
11	G	GND	Output
12	G	GND	Output
13	V	DC24V	Output
14	V	DC24V	Output
15	8(0)	SIGNAL	I/O
16	9(1)	SIGNAL	I/O
17	10(2)	SIGNAL	I/O
18	11(3)	SIGNAL	I/O
19	12(4)	SIGNAL	I/O
20	13(5)	SIGNAL	I/O
21	14(6)	SIGNAL	I/O
22	15(7)	SIGNAL	I/O
23	G	GND	Output
24	G	GND	Output



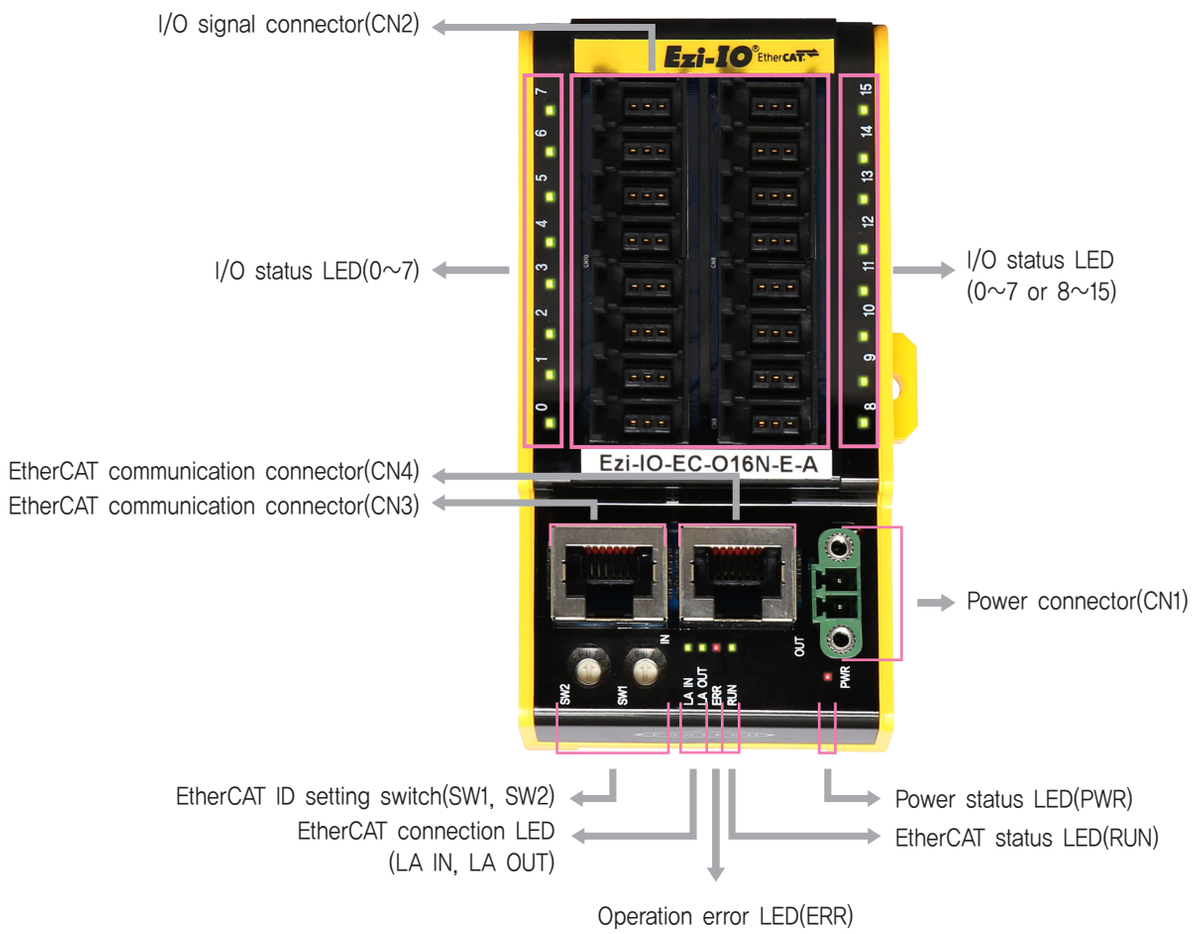
* For Ezi-IO-EC-I8O8N-T and Ezi-IO-EC-I8O8P-T modules, the name is written as 0~7 / 0~7 .

4. EtherCAT Communication Connection(CN3, CN4)

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

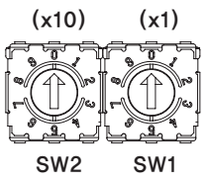


● Settings and Operation [16CH Option A Type]



1. Switch Setting

- EtherCAT ID Setting Switch (SW1, SW2)



They are switches to set the EtherCAT ID (ECAT Device ID) node address, and they represent a decimal number.
SW1 indicates the units digit (×1), and SW2 indicates the tens digit (×10).

2. Status LED

- Power Status LED

Name	Color	Status	Description
PWR	Red	OFF	Power is OFF
		ON	Power is ON

• EtherCAT Status LED

Name	Color	Status	Description
RUN	Green	OFF	State INIT or Power OFF
		Blinking	State PRE-OPERATIONAL
		Single Flash	State SAFE-OPERATIONAL
		ON	State OPERATIONAL
		Flickering	State BOOTSTRAP

• Operation Error LED

Name	Color	Status	Description
ERR	Red	OFF	No Error or Power OFF
		Blinking	Invalid Configuration
		Single Flash	Local Error
		Double Flash	Watchdog Time Out

• EtherCAT Connection LED

Name	Color	Status	Description
LA IN / LA OUT	Green	OFF	Link not Established
		ON	Link Established
		Flickering	Link Established and in Operation

• I/O Status LED

Name*	Color	Status	Description
0~15 0~7 / 0~7	Green	OFF	Input Module : Input is OFF Output Module : Output is OFF
		ON	Input Module : Input is ON Output Module : Output is ON

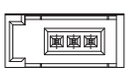
* For Ezi-IO-EC-I8O8N-E-A and Ezi-IO-EC-I8O8P-E-A modules, the name is written as 0~7 / 0~7 .

3. Power Connector(CN1)

No.	Function	I/O
1	DC24V	Input
2	GND	Input

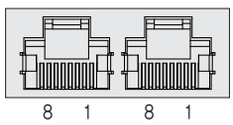
4. I/O Signal Connector(CN2)

No.	Function	I/O
1	DC24V	Output
2	SIGNAL	I/O
3	GND	Output

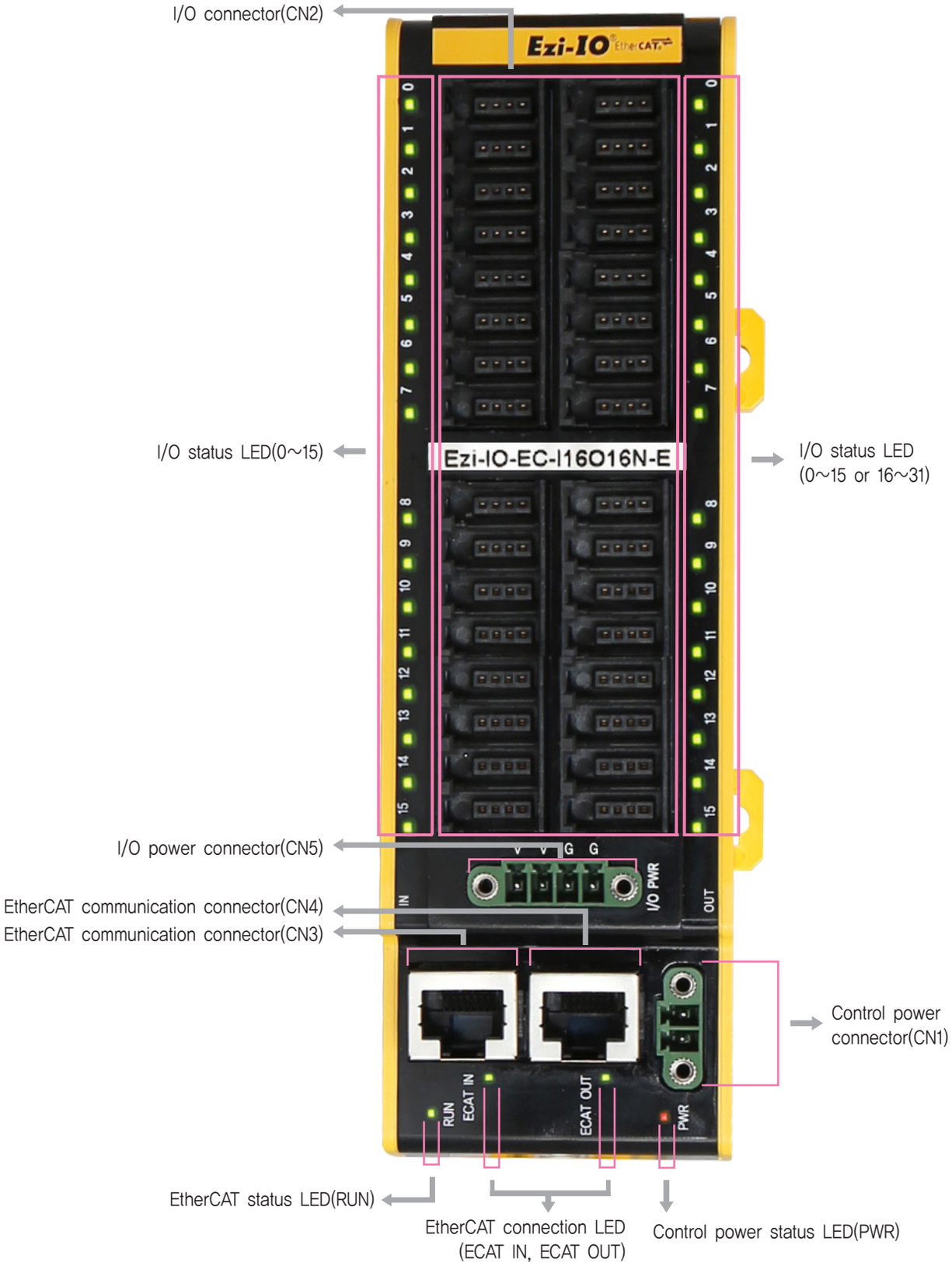


5. EtherCAT Communication Connection(CN3, CN4)

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



● Settings and Operation [32CH e-CON Type]



1. Status LED

• Power Status LED

Name	Color	Status	Description
PWR	Red	OFF	Power is OFF
		ON	Power is ON

• EtherCAT Status LED

Name	Color	Status	Description
RUN	Green	OFF	State INIT or Power OFF
		Blinking	State PRE-OPERATIONAL
		Single Flash	State SAFE-OPERATIONAL
		ON	State OPERATIONAL
		Flickering	State BOOTSTRAP

• EtherCAT Connection LED

Name	Color	Status	Description
ECAT IN / ECAT OUT	Green	OFF	Link not Established
		ON	Link Established
		Flickering	Link Established and in Operation

• I/O Status LED

Name*	Color	Status	Description
0~31 0~15 / 0~15	Green	OFF	Input Module : Input is OFF Output Module : Output is OFF
		ON	Input Module : Input is ON Output Module : Output is ON

* For Ezi-IO-EC-I16O16N-E and Ezi-IO-EC-I16O16P-E modules, the name is written as 0~15 / 0~15 .

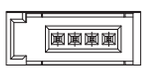
2. Control Power Connector (CN1)

No.	Function	I/O
1	DC24V	Input
2	GND	Input

1 2

3. I/O Signal Connector(CN2)

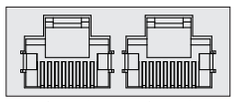
No.	Function	I/O
1	EXT_DC24V	Output
2	NC	----
3	EXT_GND	Output
4	SIGNAL	I/O



1 2 3 4

4. EtherCAT Communication Connection(CN3, CN4)

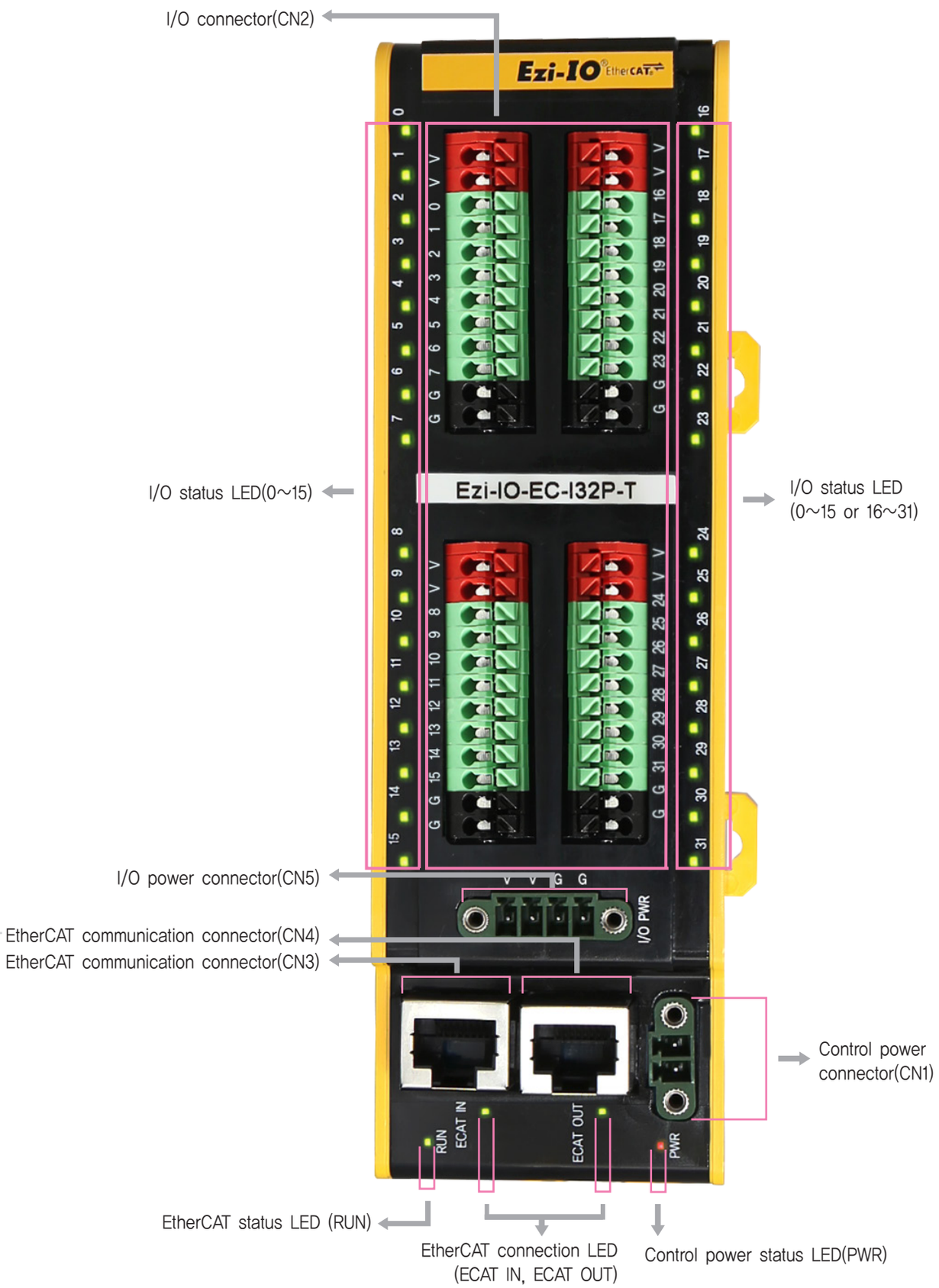
No.	Function
1	TD+
2	TD−
3	RD+
4	----
5	----
6	RD−
7	----
8	----
Connector Hood	F.GND



5. I/O Power Connector (CN5)

No.	Function	I/O
1	EXT_DC24V	Input
2	EXT_DC24V	Input
3	EXT_GND	Input
4	EXT_GND	Input

● Settings and Operation [32CH Terminal Block Type]



1. Status LED

- Power Status LED

Name	Color	Status	Description
PWR	Red	OFF	Power is OFF
		ON	Power is ON

- EtherCAT Status LED

Name	Color	Status	Description
RUN	Green	OFF	State INIT or Power OFF
		Blinking	State PRE-OPERATIONAL
		Single Flash	State SAFE-OPERATIONAL
		ON	State OPERATIONAL
		Flickering	State BOOTSTRAP

- EtherCAT Connection LED

Name	Color	Status	Description
ECAT IN / ECAT OUT	Green	OFF	Link not Established
		ON	Link Established
		Flickering	Link Established and in Operation

- I/O Status LED

Name*	Color	Status	Description
0~31 0~15 / 0~15	Green	OFF	Input Module : Input is OFF Output Module : Output is OFF
		ON	Input Module : Input is ON Output Module : Output is ON

* For Ezi-IO-EC-I16O16N-T and Ezi-IO-EC-I16O16P-T modules, the name is written as 0~15 / 0~15 .

2. Control Power Connector (CN1)

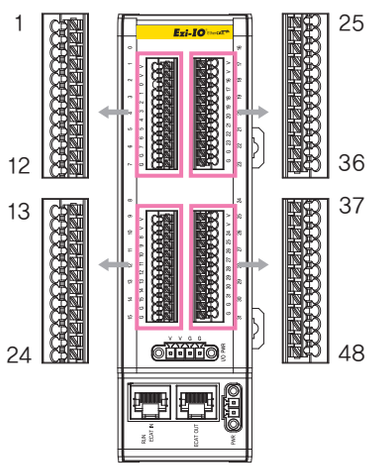
No.	Function	I/O
1	DC24V	Input
2	GND	Input

3. I/O Signal Connector(CN2)

No.	Name*	Function	I/O
1	V	EXT_DC24V	Output
2	V	EXT_DC24V	Output
3	0	SIGNAL	I/O
4	1	SIGNAL	I/O
5	2	SIGNAL	I/O
6	3	SIGNAL	I/O
7	4	SIGNAL	I/O
8	5	SIGNAL	I/O
9	6	SIGNAL	I/O
10	7	SIGNAL	I/O
11	G	EXT_GND	Output
12	G	EXT_GND	Output
13	V	EXT_DC24V	Output
14	V	EXT_DC24V	Output
15	8	SIGNAL	I/O
16	9	SIGNAL	I/O
17	10	SIGNAL	I/O
18	11	SIGNAL	I/O
19	12	SIGNAL	I/O
20	13	SIGNAL	I/O
21	14	SIGNAL	I/O
22	15	SIGNAL	I/O
23	G	EXT_GND	Output
24	G	EXT_GND	Output

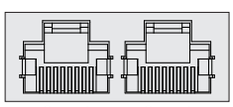
No.	Name*	Function	I/O
25	V	EXT_DC24V	Output
26	V	EXT_DC24V	Output
27	16(0)	SIGNAL	I/O
28	17(1)	SIGNAL	I/O
29	18(2)	SIGNAL	I/O
30	19(3)	SIGNAL	I/O
31	20(4)	SIGNAL	I/O
32	21(5)	SIGNAL	I/O
33	22(6)	SIGNAL	I/O
34	23(7)	SIGNAL	I/O
35	G	EXT_GND	Output
36	G	EXT_GND	Output
37	V	EXT_DC24V	Output
38	V	EXT_DC24V	Output
39	24(8)	SIGNAL	I/O
40	25(9)	SIGNAL	I/O
41	26(10)	SIGNAL	I/O
42	27(11)	SIGNAL	I/O
43	28(12)	SIGNAL	I/O
44	29(13)	SIGNAL	I/O
45	30(14)	SIGNAL	I/O
46	31(15)	SIGNAL	I/O
47	G	EXT_GND	Output
48	G	EXT_GND	Output

* For Ezi-IO-EC-I16O16N-T and Ezi-IO-EC-I16O16P-T modules, the name is written as 0~15 / 0~15 .



4. EtherCAT Communication Connection(CN3, CN4)

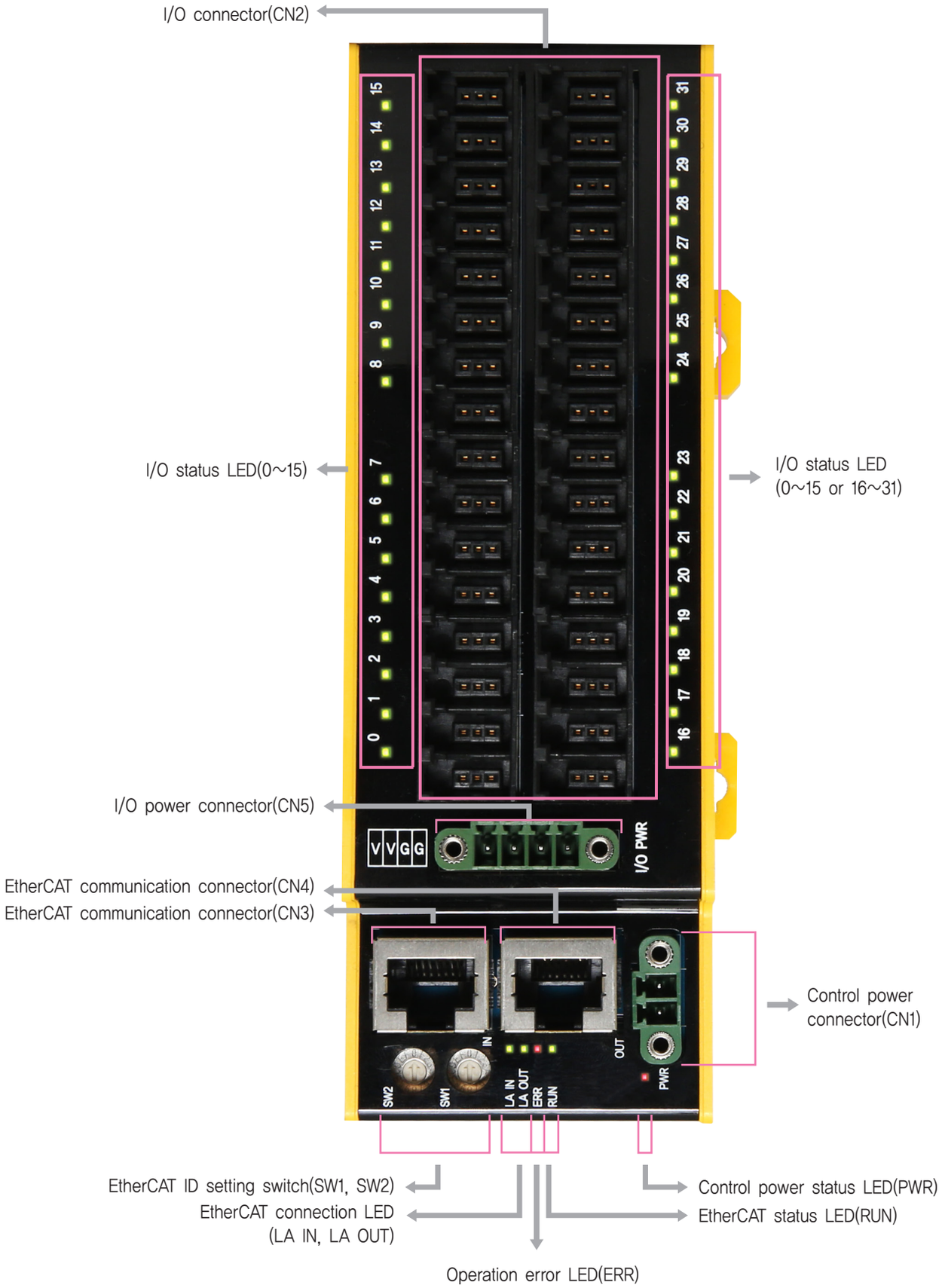
No.	Function
1	TD+
2	TD-
3	RD+
4	----
5	----
6	RD-
7	----
8	----
Connector Hood	F.GND



5. I/O Power Connector (CN5)

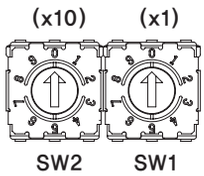
No.	Function	I/O
1	EXT_DC24V	Input
2	EXT_DC24V	Input
3	EXT_GND	Input
4	EXT_GND	Input

● Settings and Operation [32CH Option A Type]



1. Switch Setting

• EtherCAT ID Setting Switch (SW1, SW2)



They are switches to set the EtherCAT ID (ECAT Device ID) node address, and they represent a decimal number.
SW1 indicates the units digit (×1), and SW2 indicates the tens digit (×10).

2. Status LED

• Power status LED

Name	Color	Status	Description
PWR	Red	OFF	Power is OFF
		ON	Power is ON

• EtherCAT Status LED

Name	Color	Status	Description
RUN	Green	OFF	State INIT or Power OFF
		Blinking	State PRE-OPERATIONAL
		Single Flash	State SAFE-OPERATIONAL
		ON	State OPERATIONAL
		Flickering	State BOOTSTRAP

• Operation Error LED

Name	Color	Status	Description
ERR	Red	OFF	No Error or Power OFF
		Blinking	Invalid Configuration
		Single Flash	Local Error
		Double Flash	Watchdog Time Out

• EtherCAT Connection LED

Name	Color	Status	Description
LA IN / LA OUT	Green	OFF	Link not Established
		ON	Link Established
		Flickering	Link Established and in Operation

• I/O Status LED

Name*	Color	Status	Description
0~31 0~15 / 0~15	Green	OFF	Input Module : Input is OFF Output Module : Output is OFF
		ON	Input Module : Input is ON Output Module : Output is ON

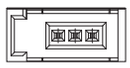
* For Ezi-IO-EC-I16O16N-E-A and Ezi-IO-EC-I16O16P-E-A modules, the name is written as 0~15 / 0~15 .

3. Control Power Connector(CN1)

No.	Function	I/O
1	DC24V	Input
2	GND	Input

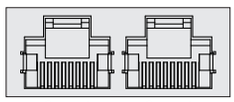
4. I/O Signal Connector(CN2)

No.	Function	I/O
1	EXT_DC24V	Output
2	SIGNAL	I/O
3	EXT_GND	Output



5. EtherCAT Communication Connection(CN3, CN4)

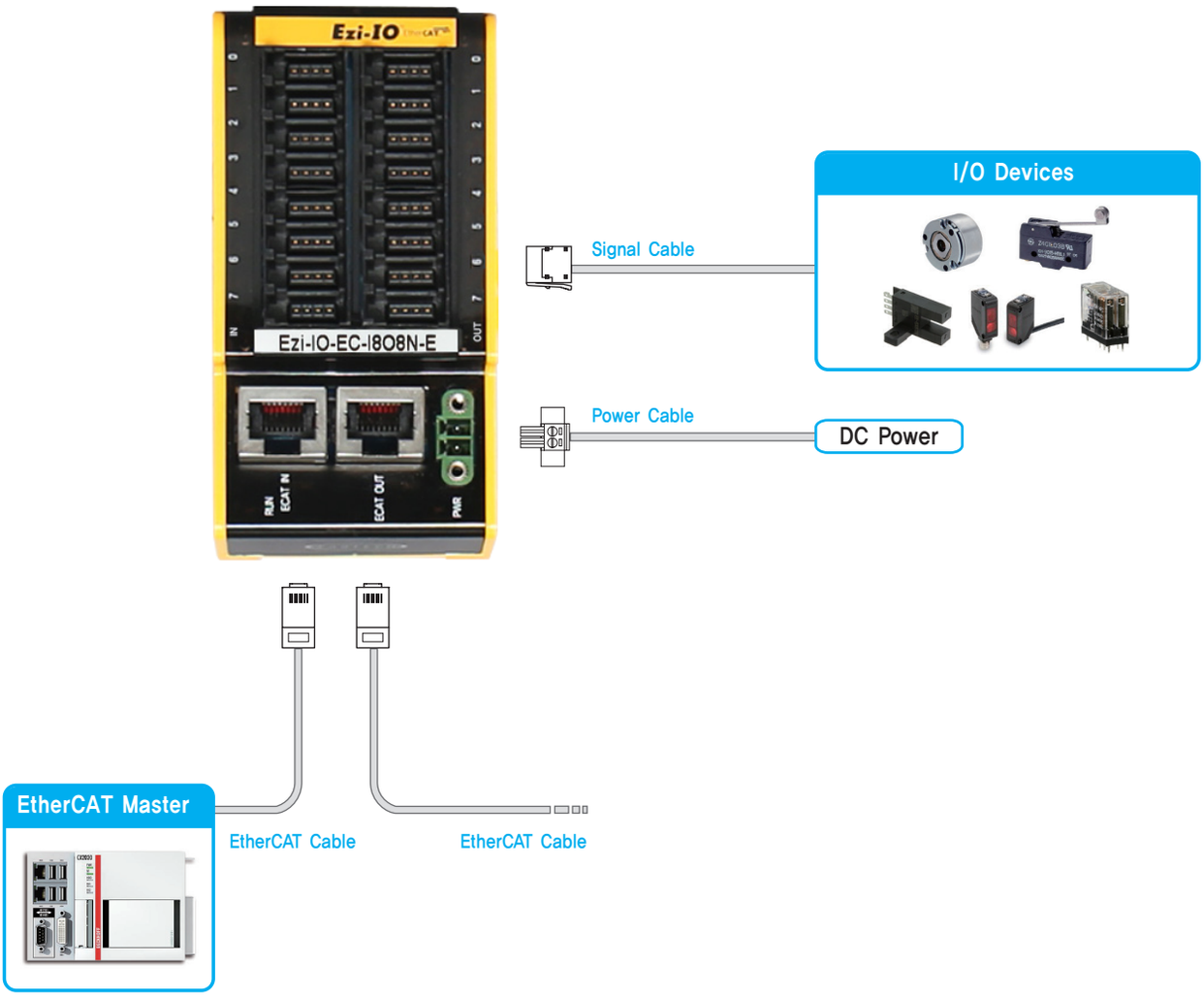
No.	Function
1	TD+
2	TD–
3	RD+
4	-----
5	-----
6	RD–
7	-----
8	-----
Connector Hood	F.GND



6. I/O Power Connector (CN5)

No.	Function	I/O
1	EXT_DC24V	Input
2	EXT_DC24V	Input
3	EXT_GND	Input
4	EXT_GND	Input

System Configuration [16CH e-CON Type]



1. Accessories

● Connectors

Purpose	Item	Part Number	Manufacturer
Power (CN1)	Terminal Block	MC421-38102	DECA
Signal (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.

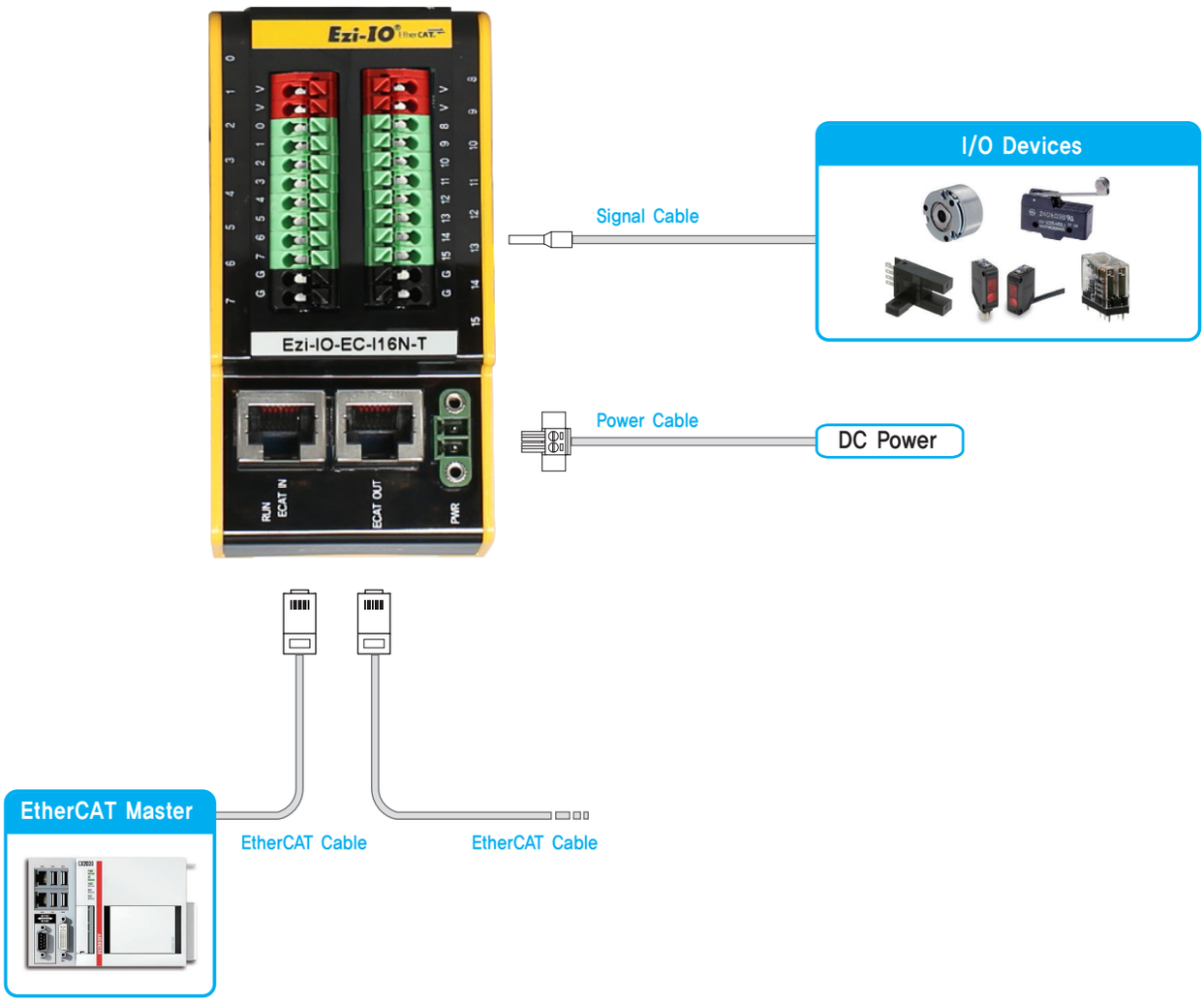
2. Options

● EtherCAT Cable

Purpose	Part Number	Length [m]	Remarks
EtherCAT Connection (CN3, CN4)	CGNR-EC-001F	1	· STP(Shielded Twisted Pair) Cable · Category 5e or higher · Maximum Length: 100m · Normal Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

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

● System Configuration [16CH Terminal Block Type]



1. Accessories

● Connectors

Purpose	Item	Part Number	Manufacturer
Power (CN1)	Terminal Block	MC421-38102	DECA

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

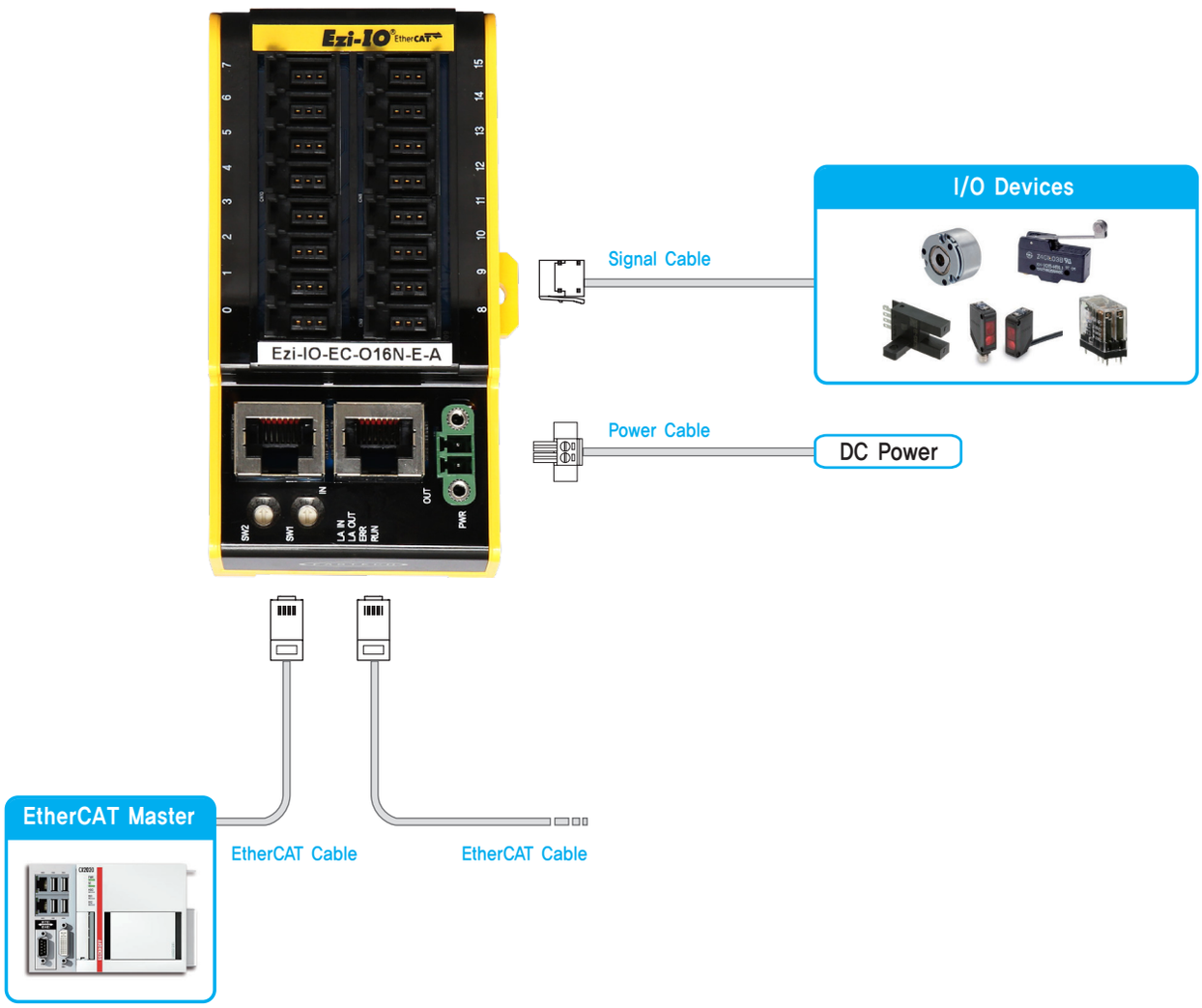
2. Options

● EtherCAT Cable

Purpose	Part Number	Length [m]	Remarks
EtherCAT Connection (CN3, CN4)	CGNR-EC-001F	1	· STP(Shielded Twisted Pair) Cable · Category 5e or higher · Maximum Length: 100m · Normal Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

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

System Configuration [16CH Option A Type]



1. Accessories

● Connectors

Purpose	Item	Part Number	Manufacturer
Power (CN1)	Terminal Block	MC421-38102	DECA
Signal (CN2)	e-CON Plug Connector	CNE-P03-YW	Autonics

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

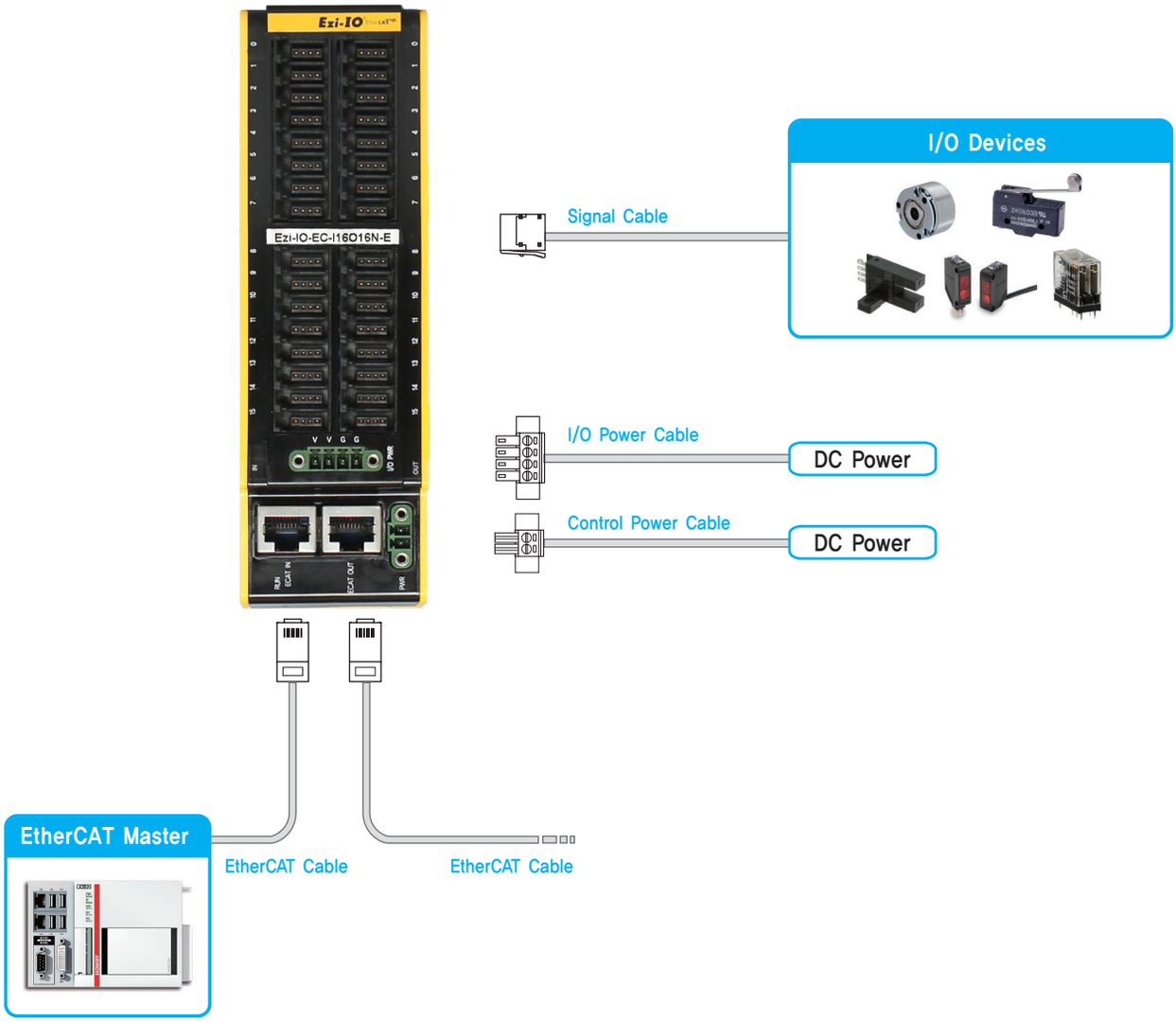
2. Options

● EtherCAT Cable

Purpose	Part Number	Length [m]	Remarks
EtherCAT Connection (CN3, CN4)	CGNR-EC-001F	1	· STP(Shielded Twisted Pair) Cable · Category 5e or higher · Maximum Length: 100m · Normal Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

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

● System Configuration [32CH e-CON Type]



1. Accessories

● Connectors

Purpose	Item	Part Number	Manufacturer
Control Power (CN1)	Terminal Block	MC421-38102	DECA
I/O Power (CN5)	Terminal Block	MC421-38104	DECA
Signal (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.

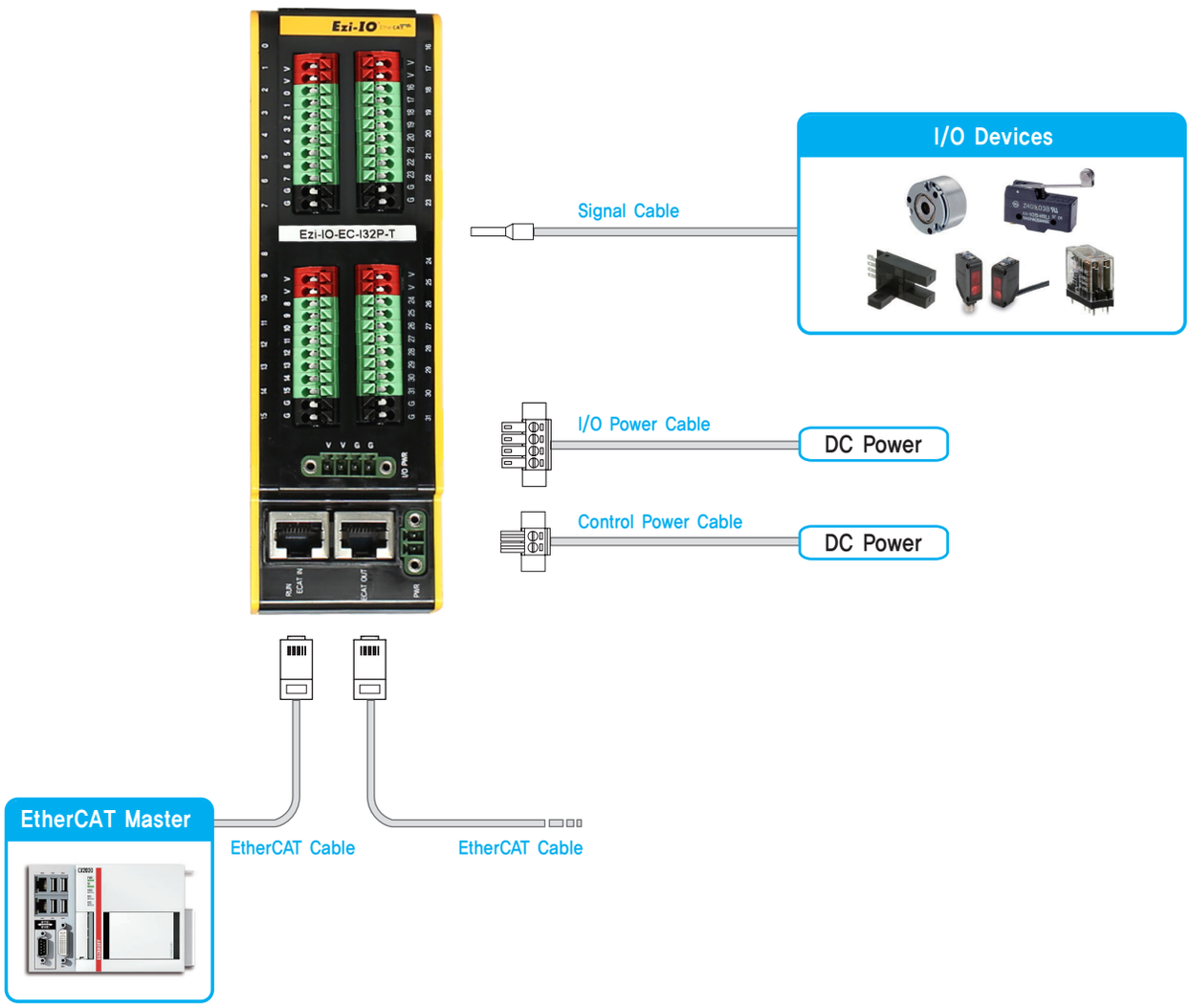
2. Options

● EtherCAT Cable

Purpose	Part Number	Length [m]	Remarks
EtherCAT Connection (CN3, CN4)	CGNR-EC-001F	1	· STP(Shielded Twisted Pair) Cable · Category 5e or higher · Maximum Length: 100m · Normal Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

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

System Configuration [32CH Terminal Block Type]



1. Accessories

- Connectors

Purpose	Item	Part Number	Manufacturer
Control Power (CN1)	Terminal Block	MC421-38102	DECA
I/O Power (CN5)	Terminal Block	MC421-38104	DECA

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

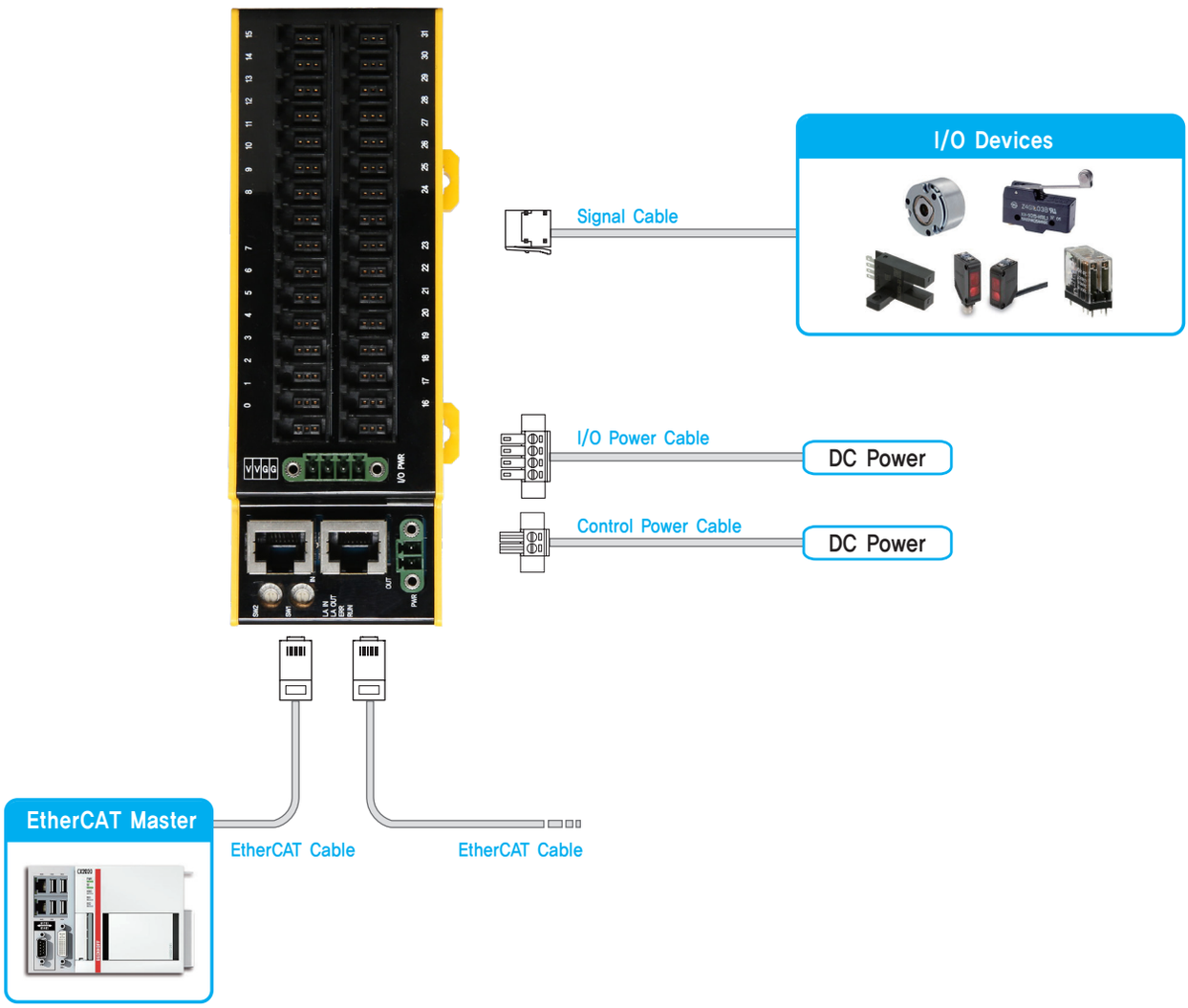
2. Options

- EtherCAT Cable

Purpose	Part Number	Length [m]	Remarks
EtherCAT Connection (CN3, CN4)	CGNR-EC-001F	1	· STP(Shielded Twisted Pair) Cable · Category 5e or higher · Maximum Length: 100m · Normal Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

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

● System Configuration [32CH Option A Type]



1. Accessories

● Connectors

Purpose	Item	Part Number	Manufacturer
Control Power (CN1)	Terminal Block	MC421-38102	DECA
I/O Power (CN5)	Terminal Block	MC421-38104	DECA
Signal (CN2)	e-CON Plug Connector	CNE-P03-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

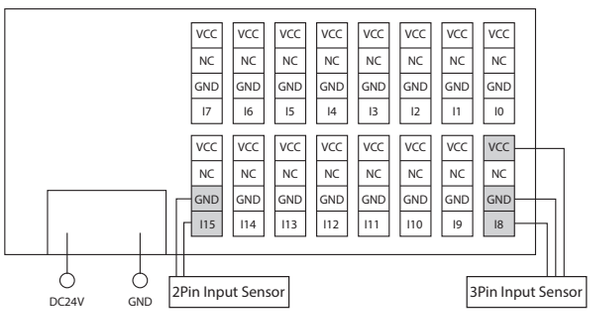
● EtherCAT Cable

Purpose	Part Number	Length [m]	Remarks
EtherCAT Connection (CN3, CN4)	CGNR-EC-001F	1	· STP(Shielded Twisted Pair) Cable · Category 5e or higher · Maximum Length: 100m · Normal Cable
	CGNR-EC-002F	2	
	CGNR-EC-003F	3	
	CGNR-EC-005F	5	

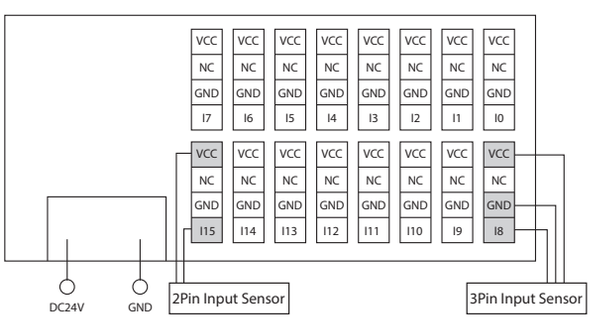
※ If you need cables with length(in units of 1m) not listed on the table or robot cables, please contact FASTECH for more information.

● External Wiring Diagram [16CH e-CON Type]

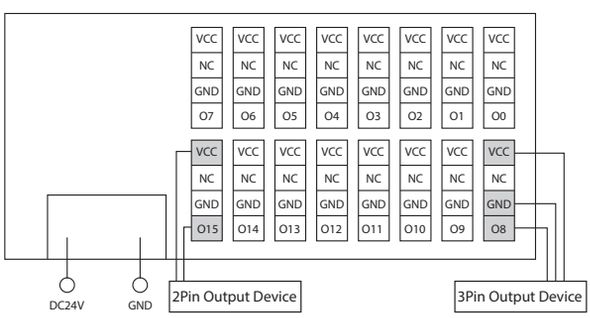
1 Ezi-IO-EC-I16N-E(NPN)



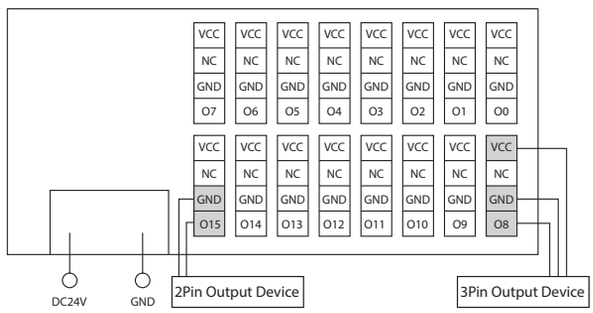
2 Ezi-IO-EC-I16P-E(PNP)



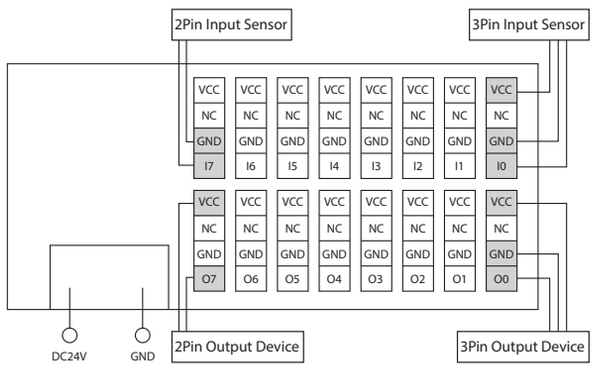
3 Ezi-IO-EC-O16N-E(NPN)



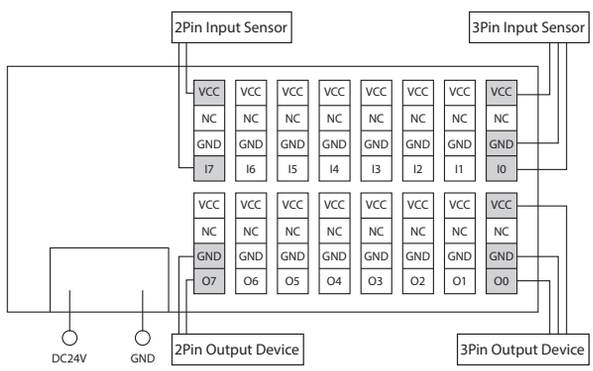
4 Ezi-IO-EC-O16P-E(PNP)



5 Ezi-IO-EC-I8O8N-E(NPN)



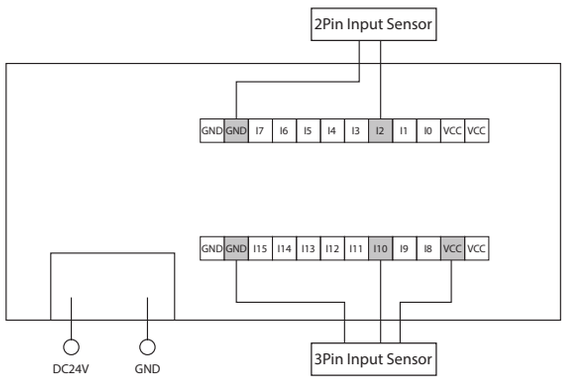
6 Ezi-IO-EC-I8O8P-E(PNP)



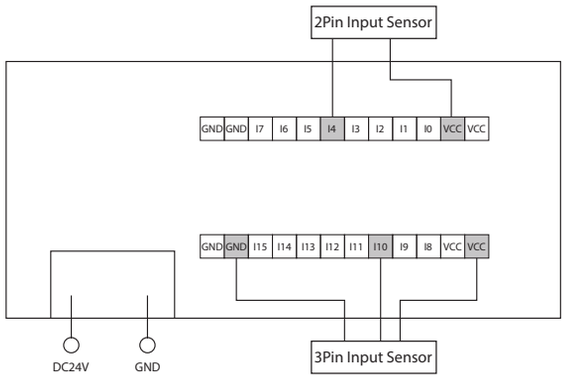
※ VCC is DC24V output.
※ e.g.) · 2Pin Input Sensor : Limit Sensor, etc.
· 3Pin Input Sensor : Position Sensor, Photo Sensor, Proximity Sensor, etc.
· 2Pin Output Device : Brake, Solenoid, Photocoupler, etc.

● External Wiring Diagram [16CH Terminal Block Type]

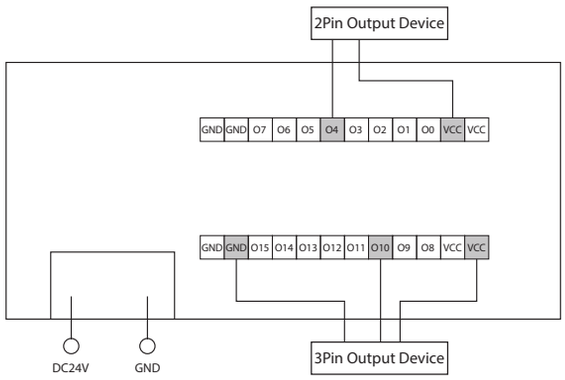
1 Ezi-IO-EC-I16N-T(NPN)



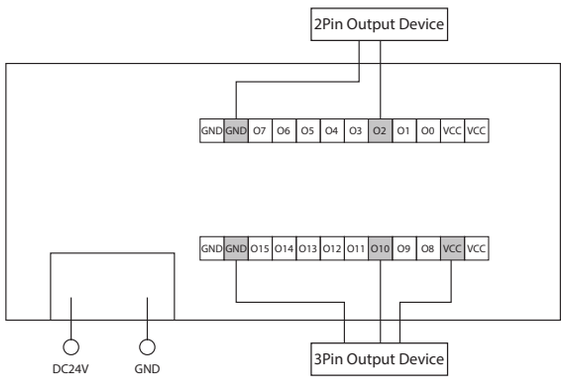
2 Ezi-IO-EC-I16P-T(PNP)



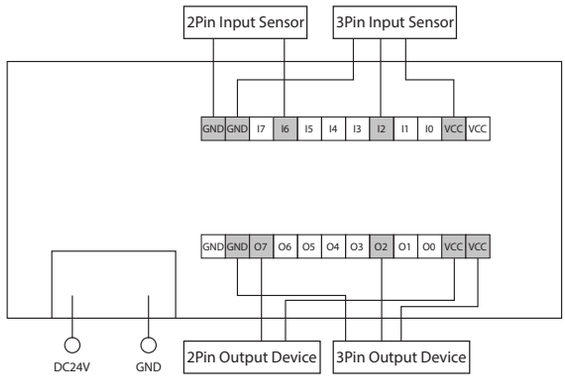
3 Ezi-IO-EC-O16N-T(NPN)



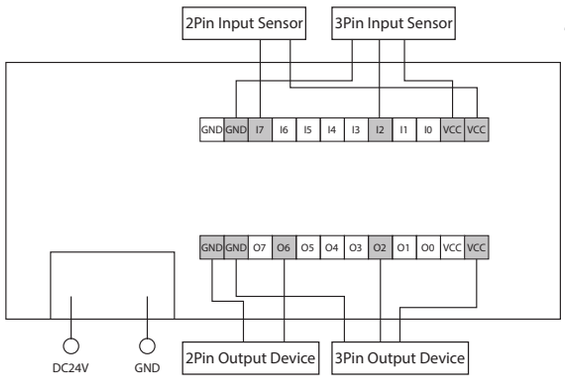
4 Ezi-IO-EC-O16P-T(PNP)



5 Ezi-IO-EC-I808N-T(NPN)



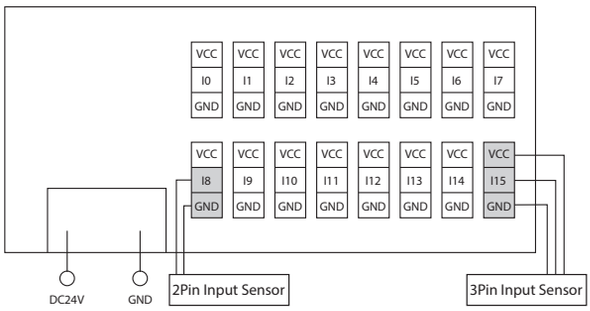
6 Ezi-IO-EC-I808P-T(PNP)



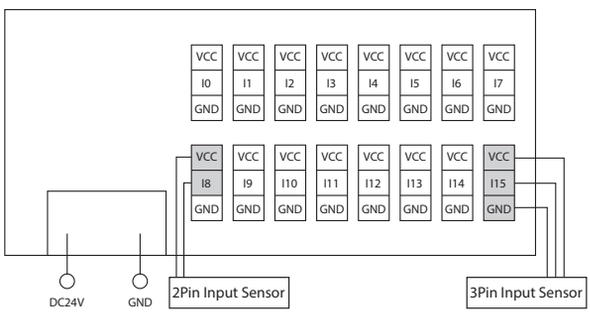
※ VCC is DC24V output.
※ e.g.) · 2Pin Input Sensor : Limit Sensor, etc.
· 3Pin Input Sensor : Position Sensor, Photo Sensor, Proximity Sensor, etc.
· 2Pin Output Device : Brake, Solenoid, Photocoupler, etc.

● External Wiring Diagram [16CH Option A Type]

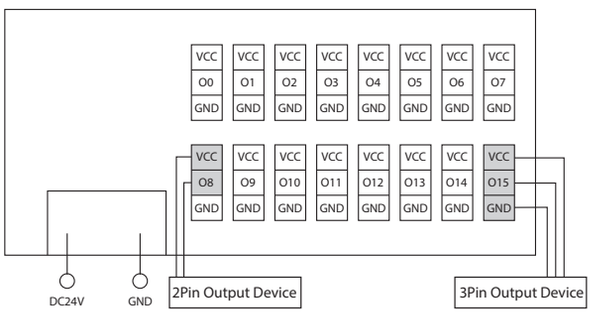
1 Ezi-IO-EC-I16N-E-A(NPN)



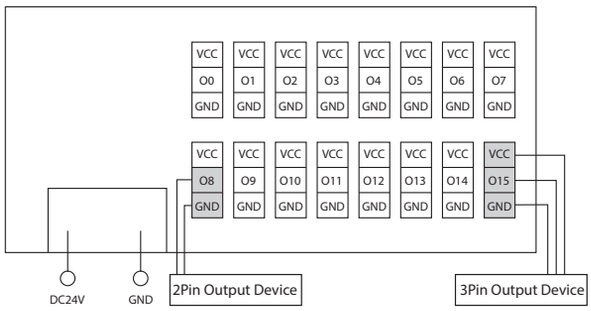
2 Ezi-IO-EC-I16P-E-A(PNP)



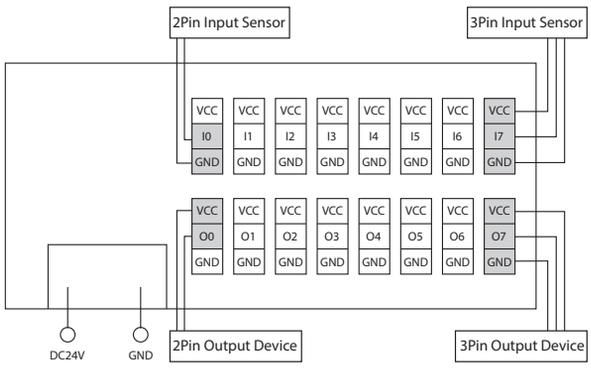
3 Ezi-IO-EC-O16N-E-A(NPN)



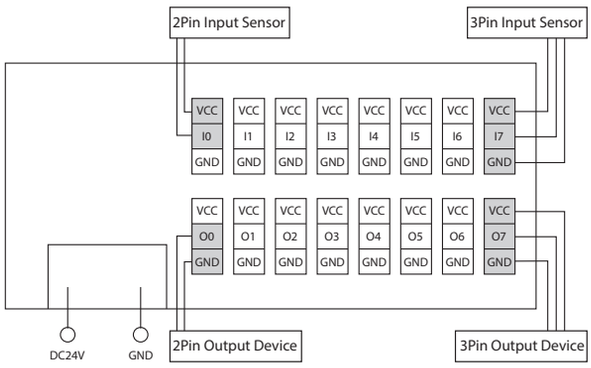
4 Ezi-IO-EC-O16P-E-A(PNP)



5 Ezi-IO-EC-I8O8N-E-A(NPN)



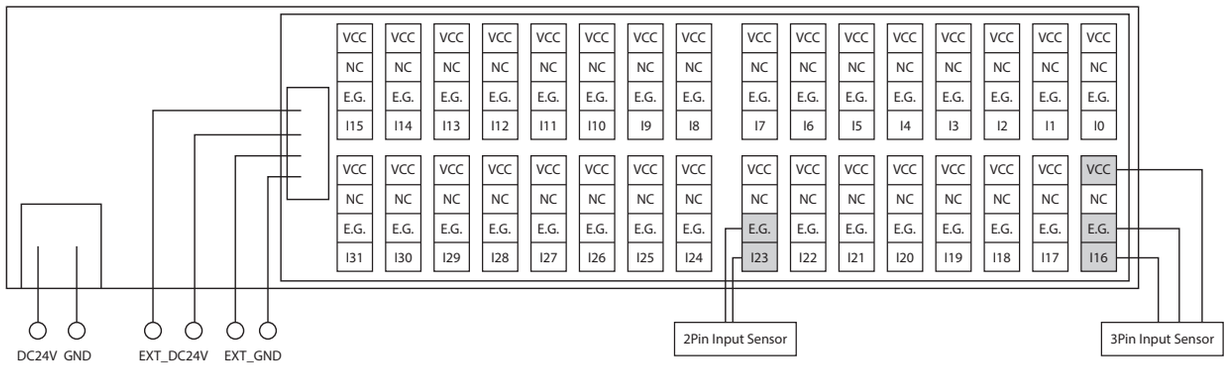
6 Ezi-IO-EC-I8O8P-E-A(PNP)



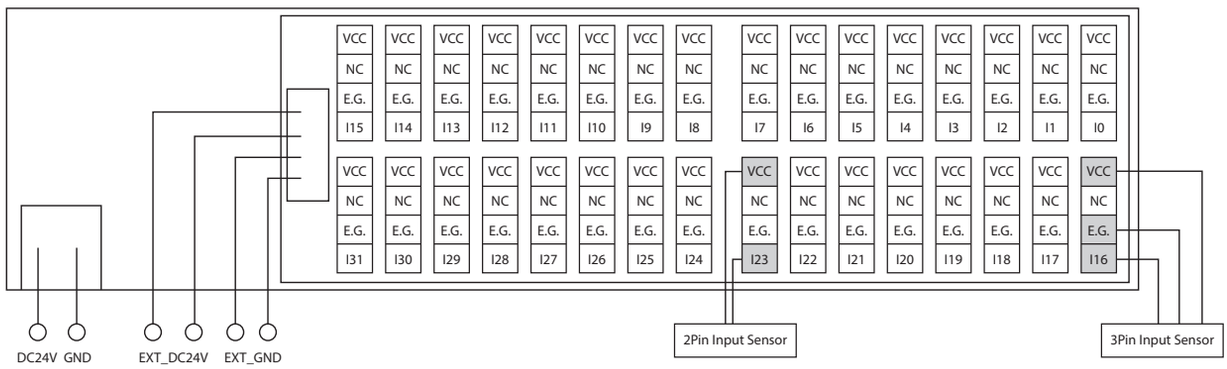
※ VCC is DC24V output.
※ e.g.) · 2Pin Input Sensor : Limit Sensor, etc.
· 3Pin Input Sensor : Position Sensor, Photo Sensor, Proximity Sensor, etc.
· 2Pin Output Device : Brake, Solenoid, Photocoupler, etc.

● External Wiring Diagram [32CH e-CON Type]

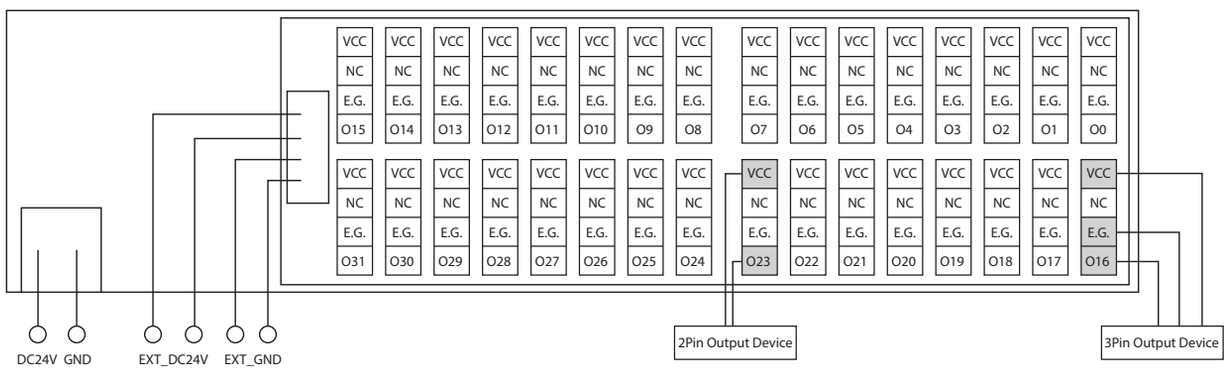
1 Ezi-IO-EC-I32N-E(NPN)



2 Ezi-IO-EC-I32P-E(PNP)



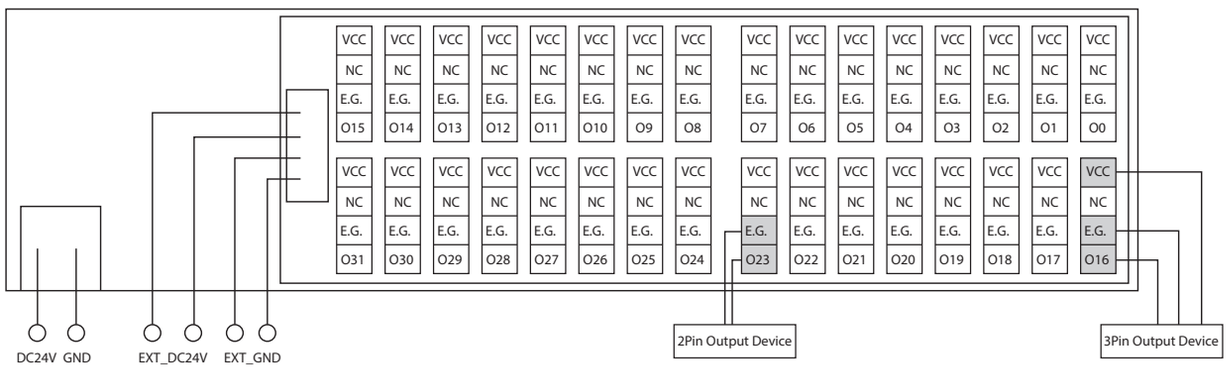
3 Ezi-IO-EC-O32N-E(NPN)



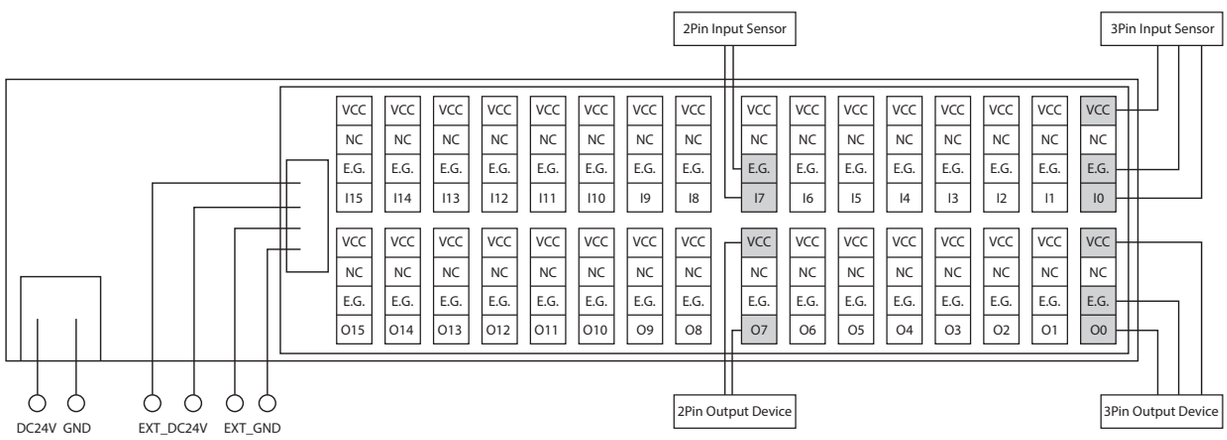
※ VCC and E.G are supplied from I/O Power Connector(CN5).
※ e.g.) · 2Pin Input Sensor : Limit Sensor, etc.
· 3Pin Input Sensor : Position Sensor, Photo Sensor, Proximity Sensor, etc.
· 2Pin Output Device : Brake, Solenoid, Photocoupler, etc.

● External Wiring Diagram [32CH e-CON Type]

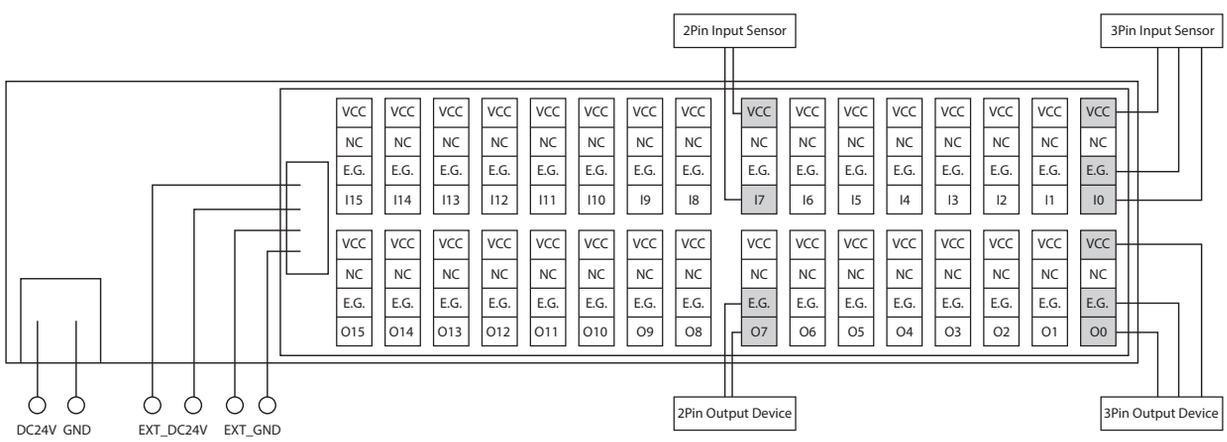
4 Ezi-IO-EC-O32P-E(PNP)



5 Ezi-IO-EC-I16O16N-E(NPN)



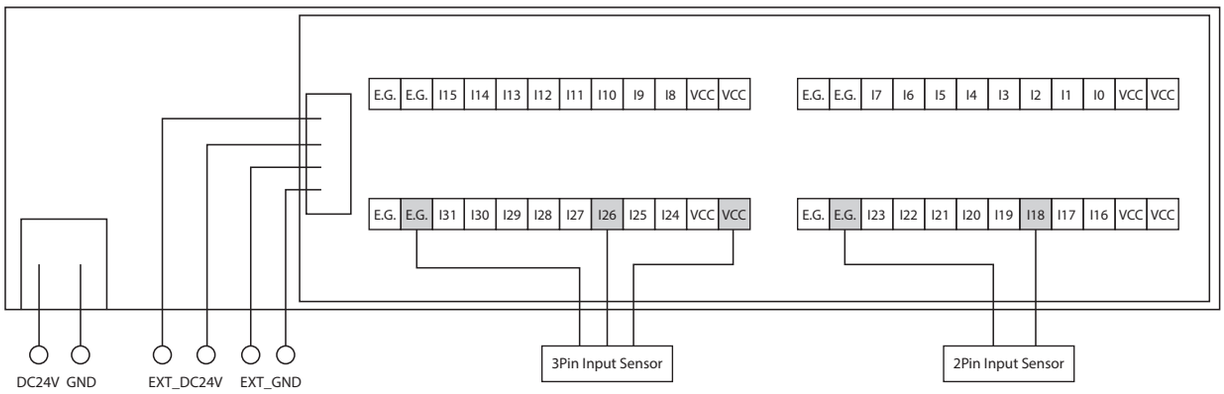
6 Ezi-IO-EC-I16O16P-E(PNP)



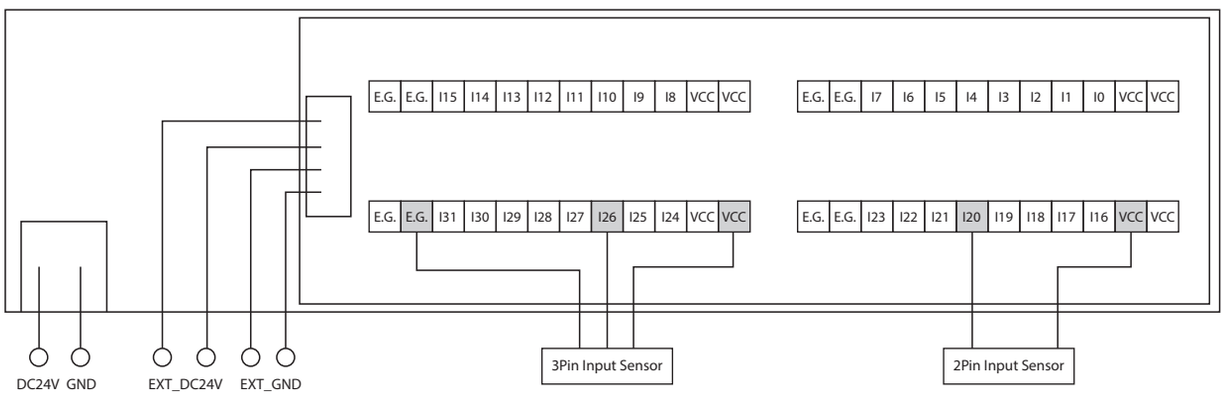
※ VCC and E.G are supplied from I/O Power Connector(CN5).
※ e.g.) · 2Pin Input Sensor : Limit Sensor, etc.
· 3Pin Input Sensor : Position Sensor, Photo Sensor, Proximity Sensor, etc.
· 2Pin Output Device : Brake, Solenoid, Photocoupler, etc.

● External Wiring Diagram [32CH Terminal Block Type]

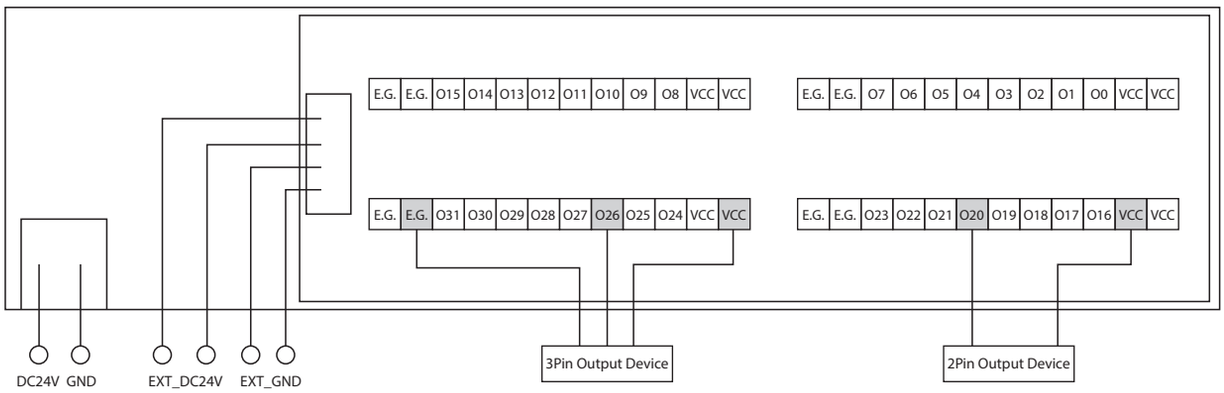
1 Ezi-IO-EC-I32N-T(NPN)



2 Ezi-IO-EC-I32P-T(PNP)



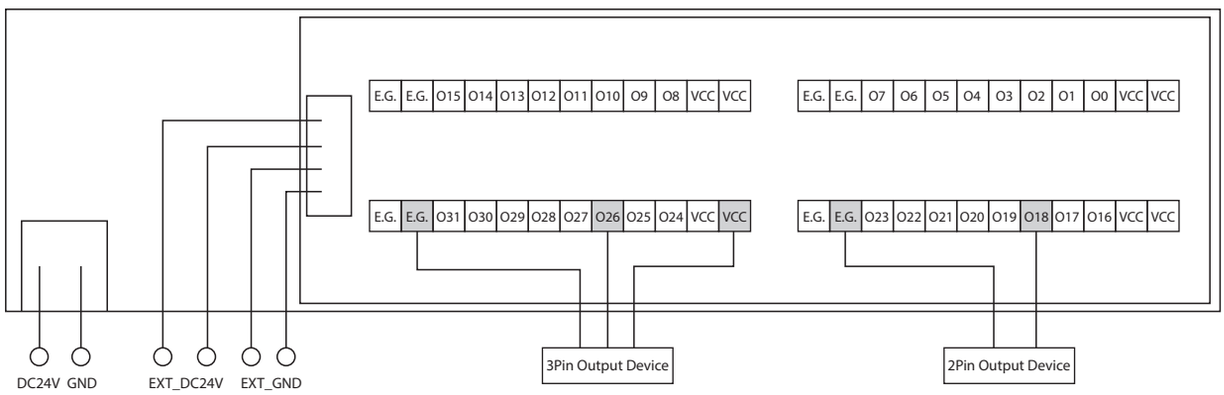
3 Ezi-IO-EC-O32N-T(NPN)



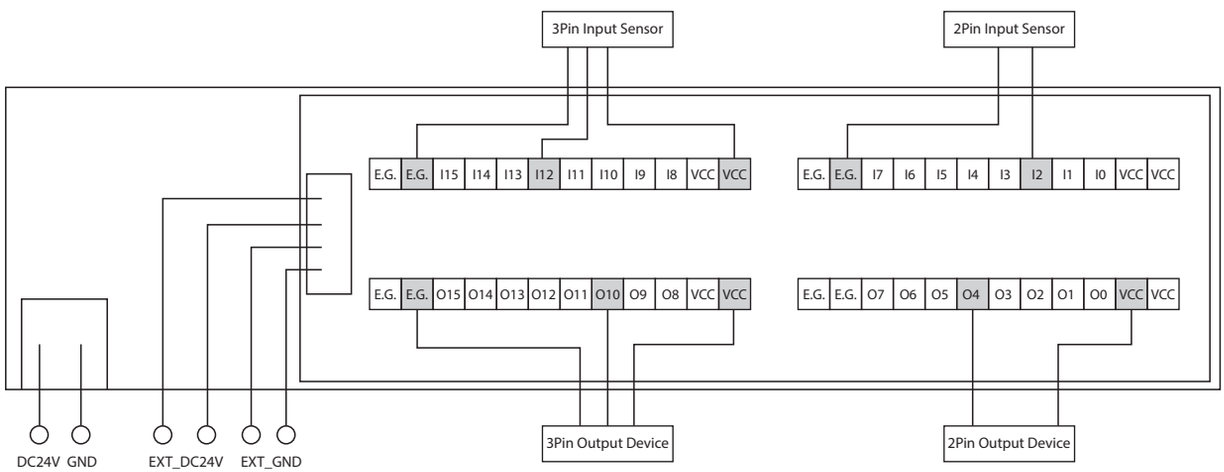
※ VCC and E.G are supplied from I/O Power Connector(CN5).
※ e.g.) · 2Pin Input Sensor : Limit Sensor, etc.
· 3Pin Input Sensor : Position Sensor, Photo Sensor, Proximity Sensor, etc.
· 2Pin Output Device : Brake, Solenoid, Photocoupler, etc.

● External Wiring Diagram [32CH Terminal Block Type]

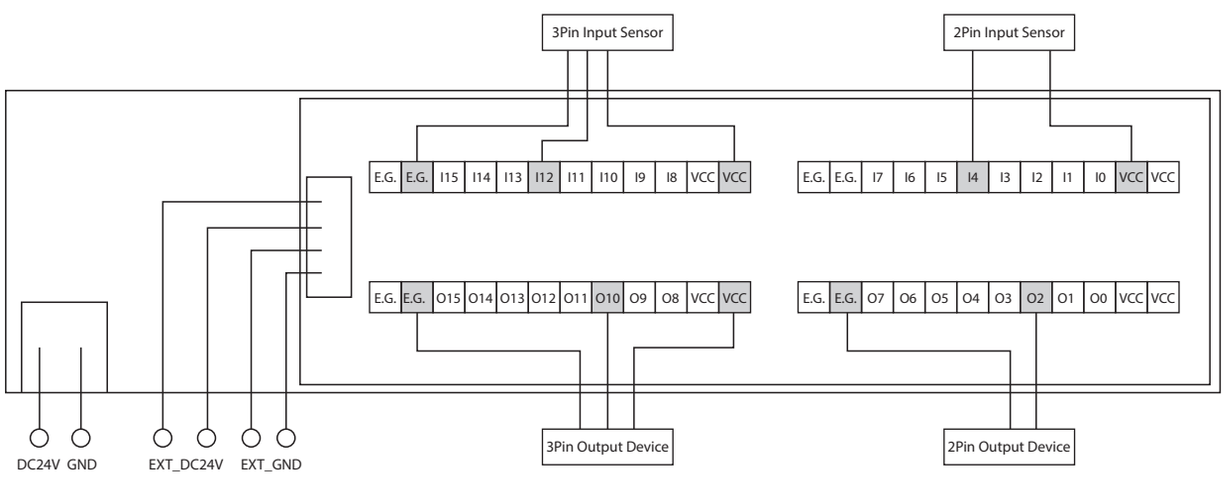
4 Ezi-IO-EC-O32P-T(PNP)



5 Ezi-IO-EC-I16O16N-T(NPN)



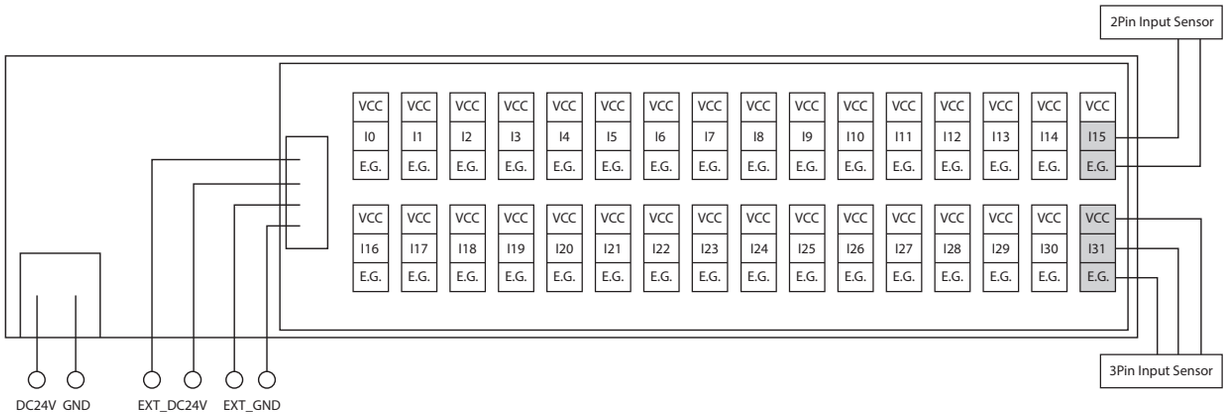
6 Ezi-IO-EC-I16O16P-T(PNP)



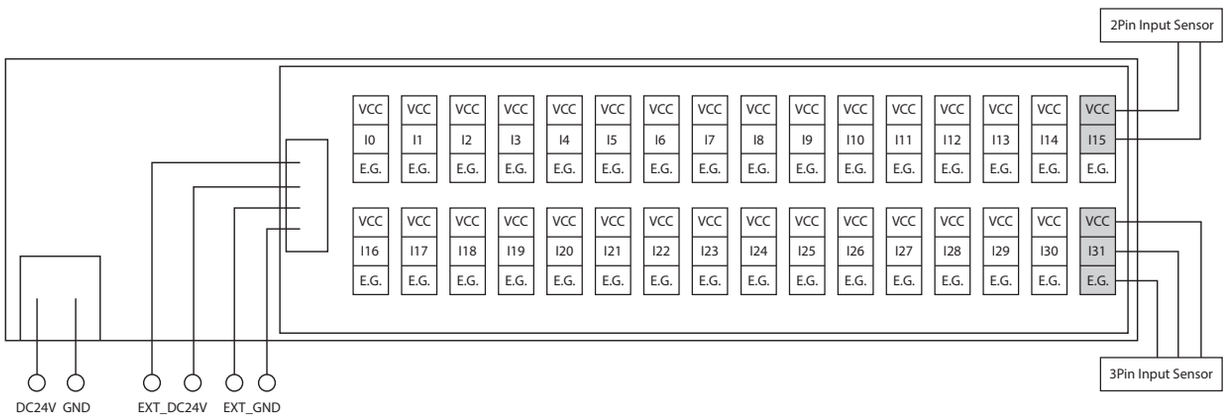
※ VCC and E.G are supplied from I/O Power Connector(CN5).
※ e.g.) · 2Pin Input Sensor : Limit Sensor, etc.
· 3Pin Input Sensor : Position Sensor, Photo Sensor, Proximity Sensor, etc.
· 2Pin Output Device : Brake, Solenoid, Photocoupler, etc.

External Wiring Diagram [32CH Option A Type]

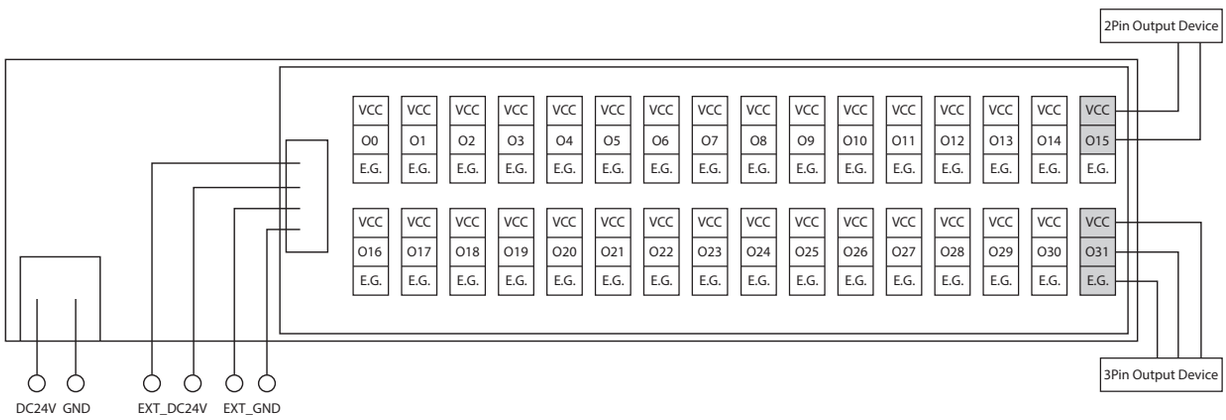
1 Ezi-IO-EC-I32N-E-A(NPN)



2 Ezi-IO-EC-I32P-E-A(PNP)



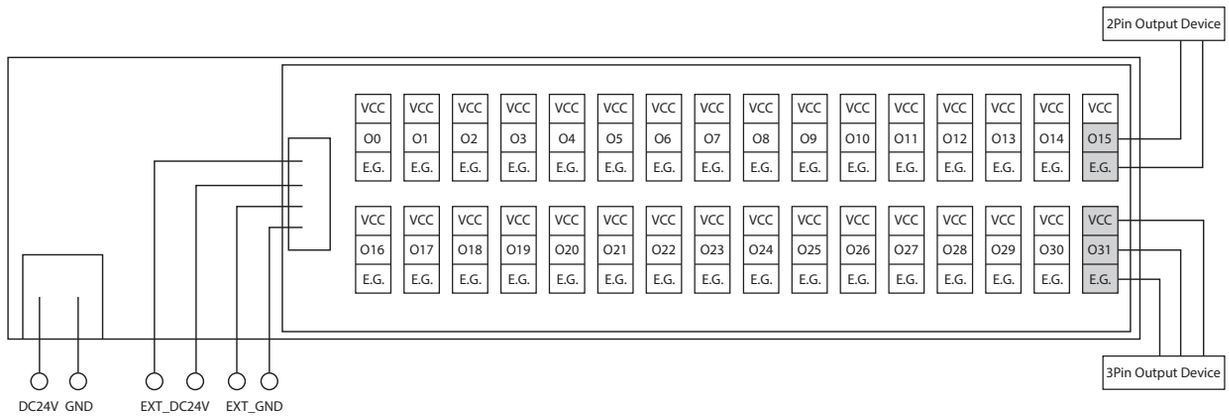
3 Ezi-IO-EC-O32N-E-A(NPN)



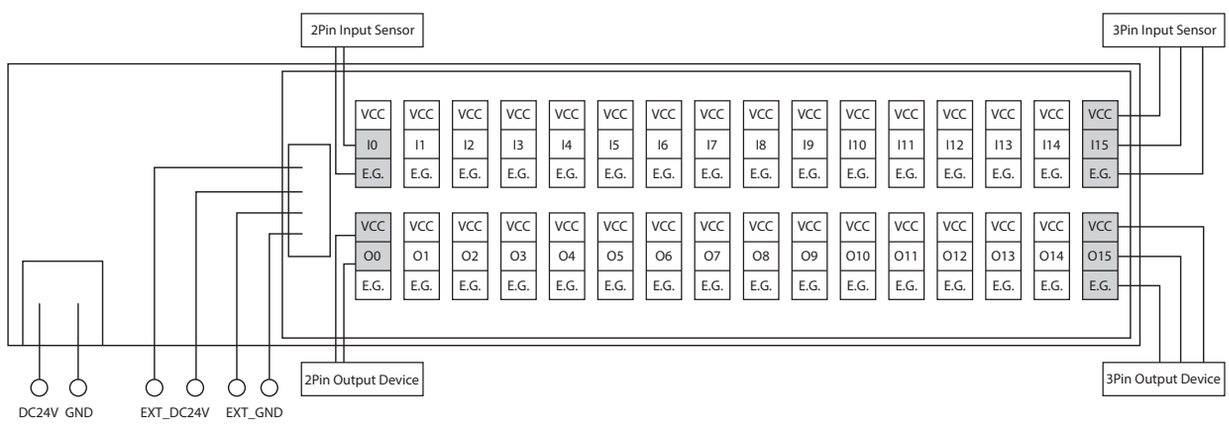
※ VCC and E.G are supplied from I/O Power Connector(CN5).
※ e.g.) · 2Pin Input Sensor : Limit Sensor, etc.
· 3Pin Input Sensor : Position Sensor, Photo Sensor, Proximity Sensor, etc.
· 2Pin Output Device : Brake, Solenoid, Photocoupler, etc.

● External Wiring Diagram [32CH Option A Type]

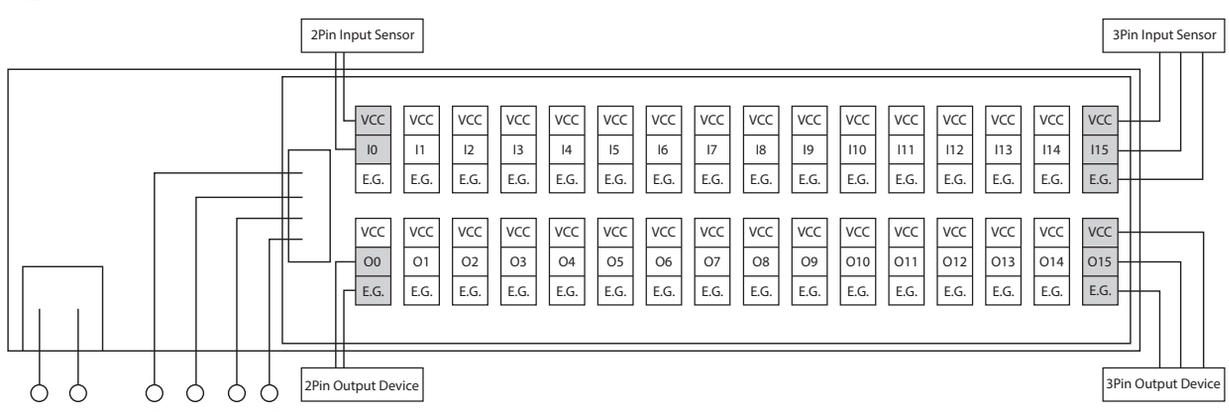
4 Ezi-IO-EC-O32P-E-A(PNP)



5 Ezi-IO-EC-I16O16N-E-A(NPN)



6 Ezi-IO-EC-I16O16P-E-A(PNP)



※ VCC and E.G are supplied from I/O Power Connector(CN5).
※ e.g.) · 2Pin Input Sensor : Limit Sensor, etc.
· 3Pin Input Sensor : Position Sensor, Photo Sensor, Proximity Sensor, etc.
· 2Pin Output Device : Brake, Solenoid, Photocoupler, etc.

MEMO

MEMO

MEMO

FASTECH

Fast, Accurate, Smooth Motion

FASTECH Co., Ltd.
Rm#1202, 401-dong, Bucheon Techno-Park,
655, Pyeongcheon-ro, Bucheon-si Gyeonggi-do,
Republic of Korea (Postal Code: 14502)
TEL : +82-32-234-6317 FAX : +82-32-234-6302
E-mail : sales@fastech-motions.com
Homepage : www.fastech-motions.com