

Ezi-IO[®]

Input/Output Module

- EtherCAT Remote Analog Input Module
- Fully Supported EtherCAT Synchronization Modes
- CiA 401 Compatible
- Simple and Easy Wiring
- Configuration by Switch Setting
- Moving Average Filter

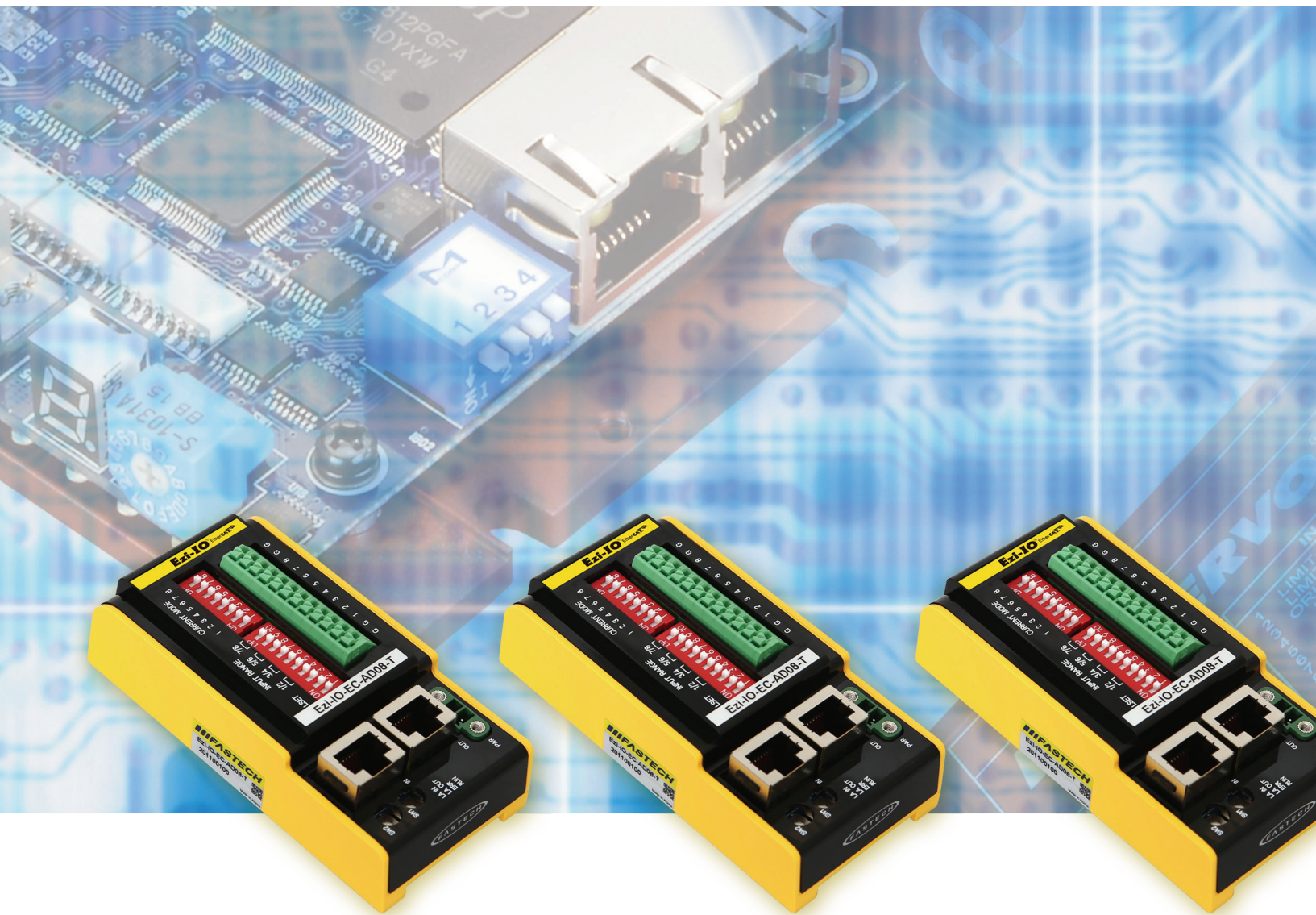
EtherCAT[®]  AD



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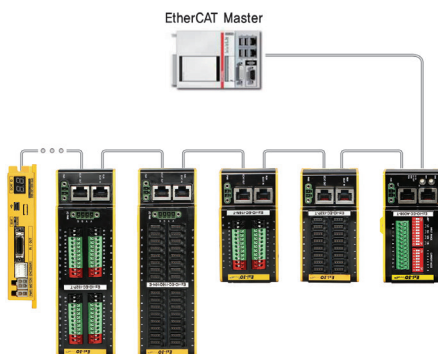
Ezi-IO® EtherCAT[®] **AD**
Input/Output Module



1 EtherCAT Based Analog I/O Module

Ezi-IO EtherCAT AD is an analog I/O module supporting EtherCAT, a fieldbus based on high speed Ethernet (100Mbps, Full-Duplex).

Ezi-IO EtherCAT AD is an EtherCAT Slave module which supports CAN Application layer over EtherCAT(CoE) and CiA 401 Profile. EtherCAT enables fast data transfer with peripheral devices and supports connection of various devices without topology limitation.



2 Simple and Easy Wiring

Ezi-IO EtherCAT AD is supplied with push-in spring type terminal blocks which are connected with wires in simple and easy way using ferrule connectors. Connections of analog devices to Ezi-IO EtherCAT AD are also simplified.

3 EtherCAT Synchronization Modes

Ezi-IO EtherCAT AD supports all EtherCAT synchronization modes. Selectable among Free Run, SM Event, DC SYNC Event modes.

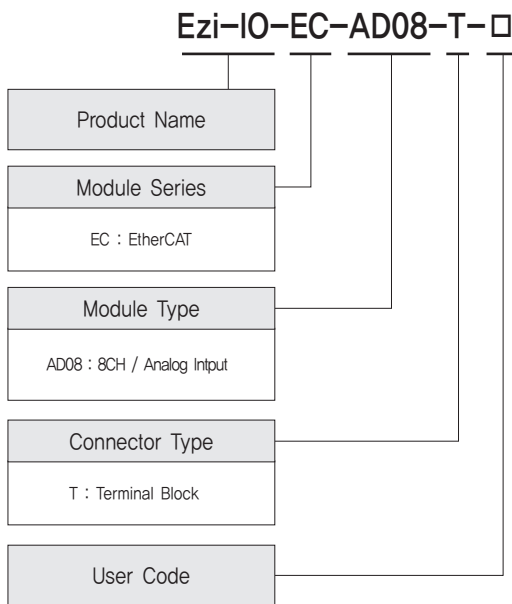
4 Easy Setup with Switches

Ezi-IO EtherCAT AD simply sets the EtherCAT ID with rotary switches. Voltage or current input mode per channel is easily configured with dip switches, and the voltage input range is selectable.

5 Moving Average Filtering

Ezi-IO EtherCAT AD supports the moving average filter function to smooth input analog signals of each channel. Selectable time range of moving average filter is 0~100msec.

● Ezi-IO EtherCAT AD Part Numbering



● Ezi-IO EtherCAT AD Part Number

Part Number
Ezi-IO-EC-AD08-T

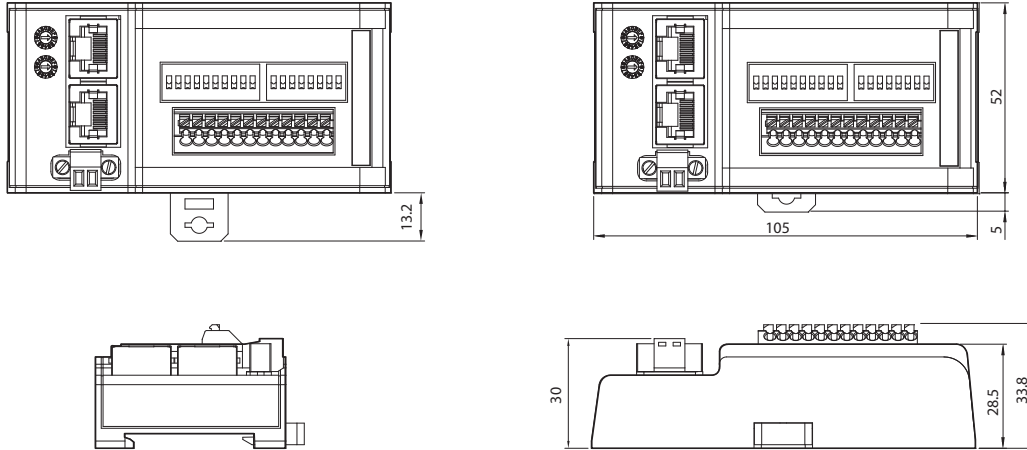
● Specifications of Module

Model		Ezi-IO-EC-AD08-□		
Input Mode		Voltage Input	Current Input	
Input Voltage		24VDC ±10%		
Current Consumption		Max, 120mA		
Operating Condition	Ambient Temperature	<ul style="list-style-type: none"> · In Use: 0~50°C · In Storage: -20~70°C 		
	Humidity	<ul style="list-style-type: none"> · In Use: 35~85% RH (Non-Condensing) · In Storage: 10~90% RH (Non-Condensing) 		
	Vib. Resist.	0.5g		
Function	Number of Channels	8CH		
	Max. Input Signal	±15V	±30mA	
	Input Range	<ul style="list-style-type: none"> · -10~10V · -5~5V · -2,5~2,5V · 0~10V 	<ul style="list-style-type: none"> · 0~20mA 	
	Input Range Setting Method	<ul style="list-style-type: none"> · SDO Communications (Separate setting for CH1~8) · DIP Switch (Separate setting for CH1/CH2, CH3/CH4, CH5/CH6, CH7/CH8) 		
	Input Impedance	1MΩ	249Ω	
	Resolution	13bit		
	Measuring Error	25°C	±0.3%(Full Scale)	±0.3%(Full Scale)
		0~50°C	±0.4%(Full Scale)	±0.6%(Full Scale)
	Analog Conversion Cycle	200μs		
	A/D Converted Data	<ul style="list-style-type: none"> · -10~10V : -4096~4095 · -5~5V : -4096~4095 · -2,5~2,5V : -4096~4095 · 0~10V : 0~8191 	<ul style="list-style-type: none"> · 0~20mA : 0~8191 	
Signal Isolation Method	Digital isolation between analog input and communication connections			
LED Indication	<ul style="list-style-type: none"> · Power Status (PWR) · EtherCAT Communication Status (RUN) · Operation Error (ERR) · EtherCAT Link/Activity Status (LA IN, LA OUT) 			
EtherCAT	Protocol	CoE (CiA 401 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		

* □ : Connector Type

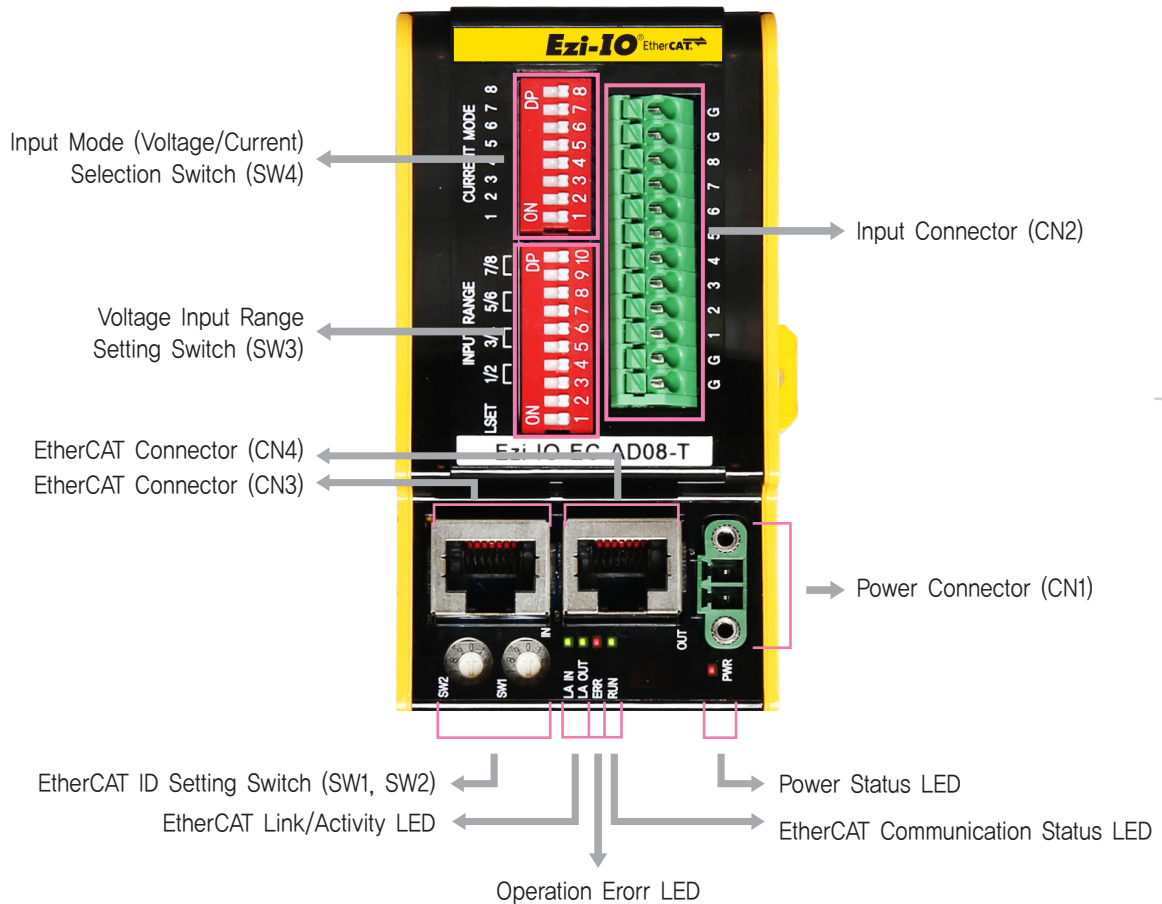
● Dimensions of Module [mm]

◆ Ezi-IO-EC-AD08-T



* Can be installed on 35mm DIN Rail.

● Settings and Operation [Ezi-IO-EC-AD08-T]



4. LED Indication

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

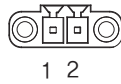
LED	Color	Status	Description
RUN	Green	OFF	INIT Status or Power is OFF
		Blinking	PRE-OPERATIONAL Status
		Single Flash	SAFE-OPERATIONAL Status
		ON	OPERATIONAL Status
		Flickering	BOOTSTRAP Status

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

LED	Color	Status	Description
Link/ Activity	Green	OFF	Link is not established physically.
		ON	Link is established physically.
		Flickering	Link is active in operation.

5. Power Connector (CN1)

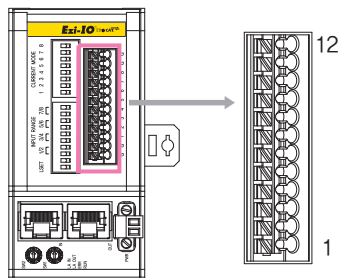
NO.	Function	I/O
1	24VDC	Input
2	GND	Input



* Supply rated power source to the connector.

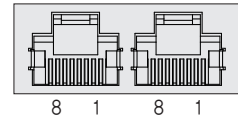
6. Input Connector (CN2)

NO.	Function	I/O
1	GND	Input
2	GND	Input
3	Analog In 1	Input
4	Analog In 2	Input
5	Analog In 3	Input
6	Analog In 4	Input
7	Analog In 5	Input
8	Analog In 6	Input
9	Analog In 7	Input
10	Analog In 8	Input
11	GND	Input
12	GND	Input

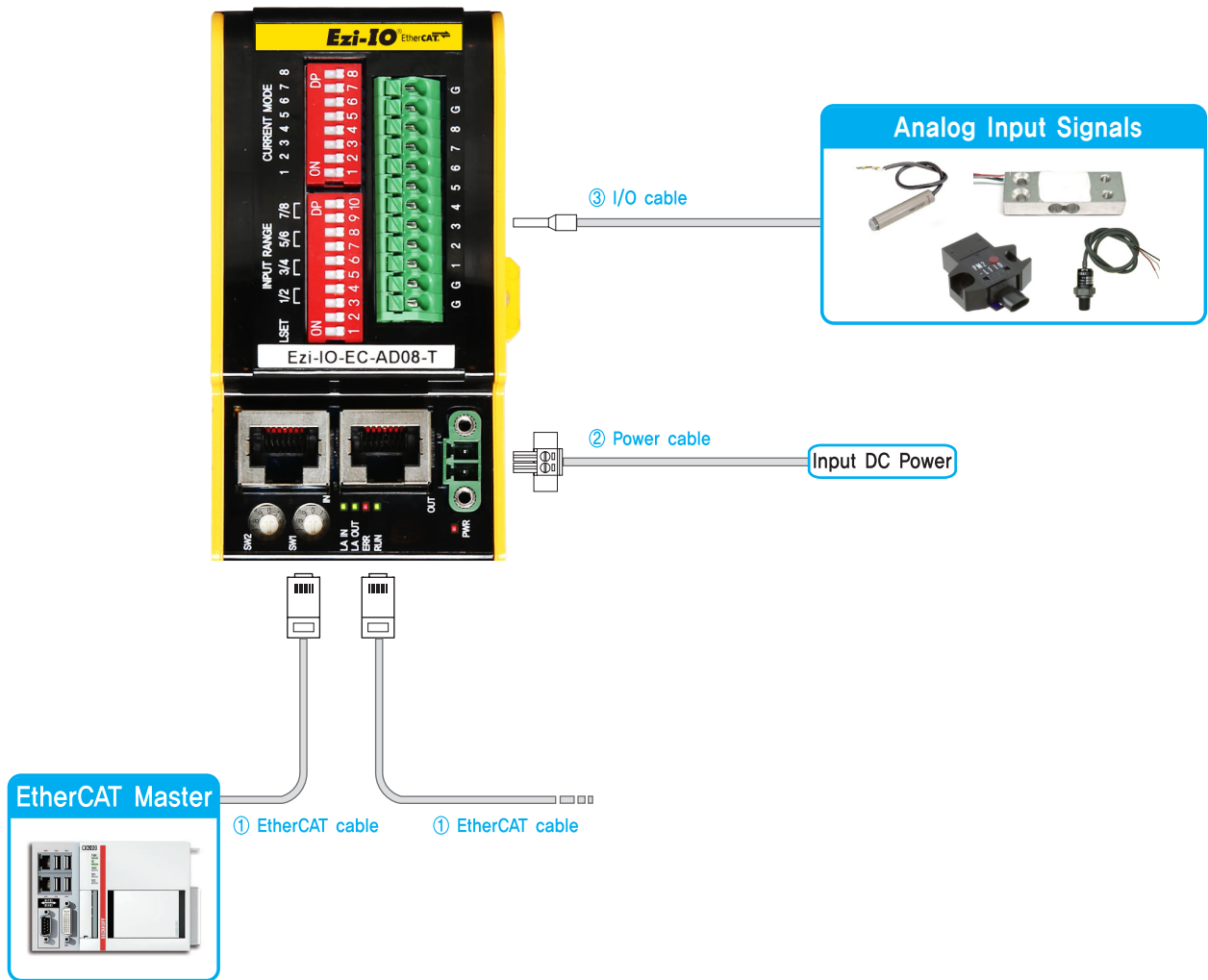


7. EtherCAT Connector (CN3, CN4)

NO.	Function	NO.	Function
1	TD+	6	RD-
2	TD-	7	----
3	RD+	8	----
4	----	Connector Hood	F_GND
5	----		



● System Configuration [Ezi-IO-EC-AD08-T]



1. Options

① EtherCAT Cable

STP (Shielded Twisted Pair) cable of category 5e or higher.

Part Number	Length [m]	Remarks
CGNR-EC-□□□F	□□□	Normal Type

□ : Cable Length, Unit in m, Max, 100m.

2. Connector Specifications

Terminal block for power connection to the module.

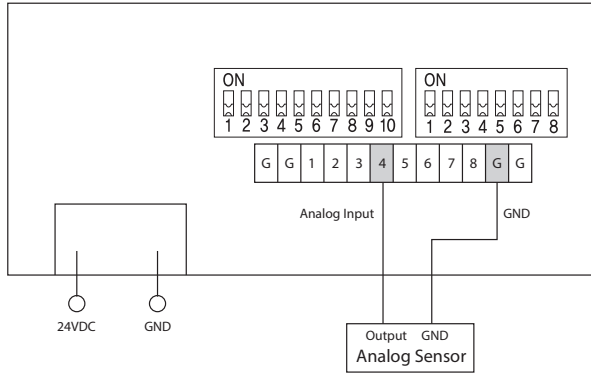
Function	Item	Part Number	Manufacturer
Power Connector (CN1)	Terminal Block	MC421-38102	DECA

※ The connector above is the most suitable model for Ezi-IO EtherCAT AD. Another equivalent connector can be used.

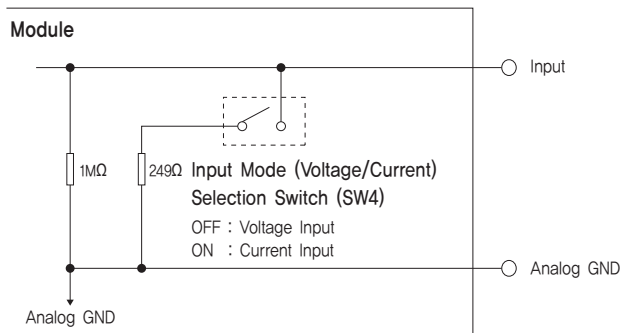
External Wiring Diagram [Ezi-IO-EC-AD08-□]

1

Ezi-IO-EC-AD08-T



Internal Circuit Diagram



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