

EPS Hardware Reference Manual



8CHANNEL ANALOG INPUT MODULE

EPS-AI08H

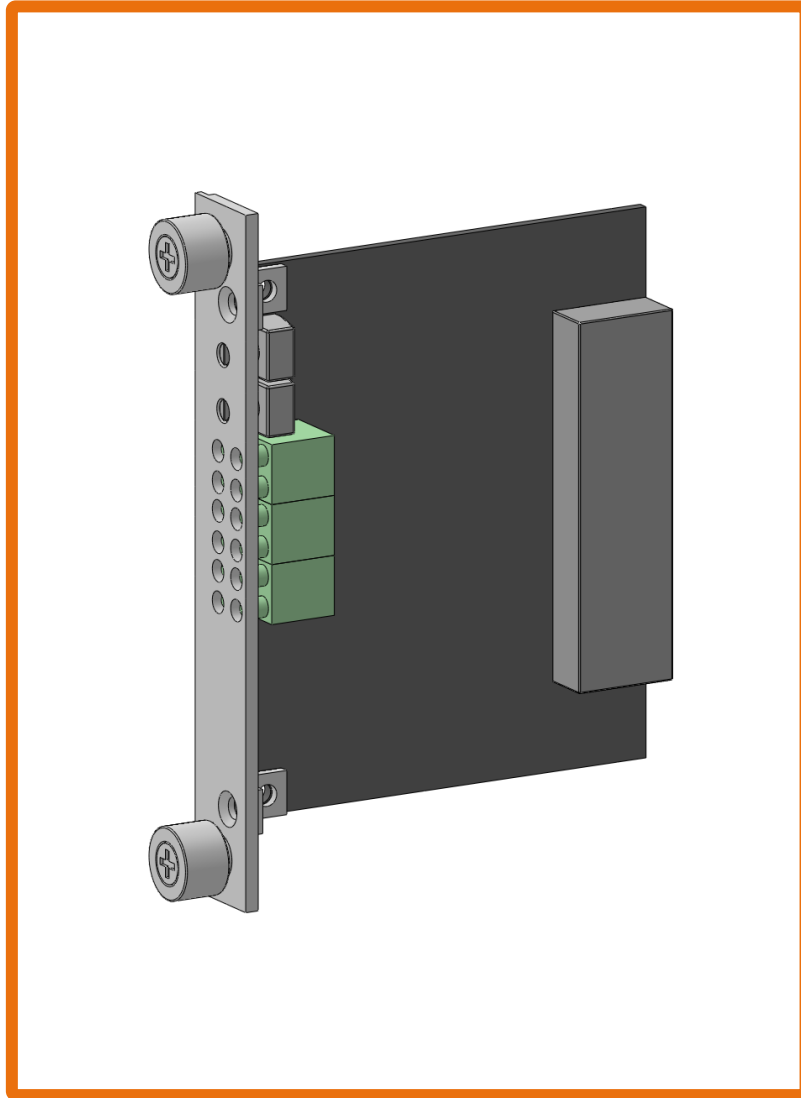
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개요



EPS - AI08H (Analog Input 8ch)

EPS-AI08H는 커미조아의 EtherCAT 기반 제어기의 8채널 Analog 입력 모듈입니다.

각 채널은 최대 0~5(V)의 전압 혹은 4~20mA의 전류를 선택적으로 입력 받을 수 있습니다.

본 매뉴얼은 EPS-AI08H의 하드웨어 구성과 기능에 대해 설명하는 하드웨어 매뉴얼입니다.

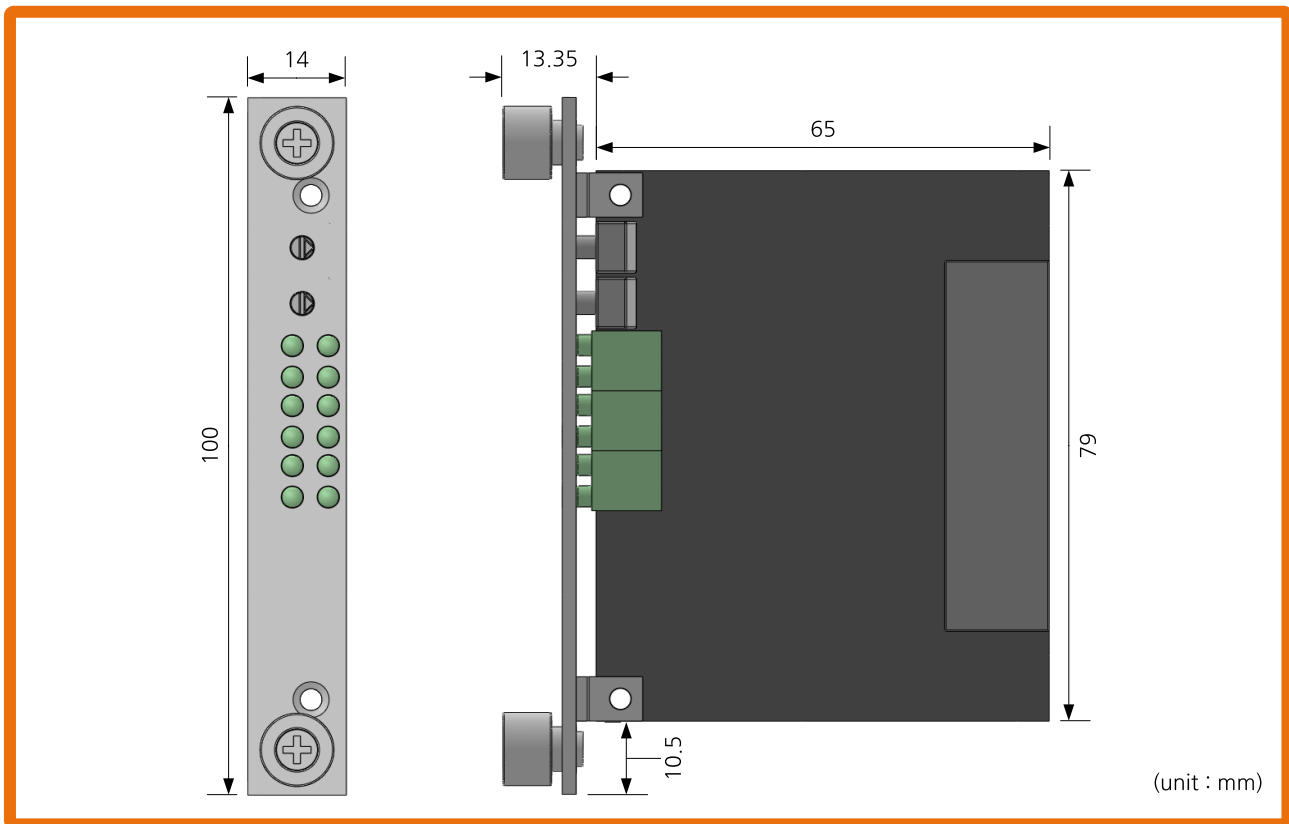
- EtherCAT Slave Module
- CiA Standard 401 and ETG.5001 Modular Device Profile
- Supports Terminal Device ID
- 16bit(2's Compliment) Resolution
- Analog Input 8(Voltage/Current)
- Independent System Power

제품사양

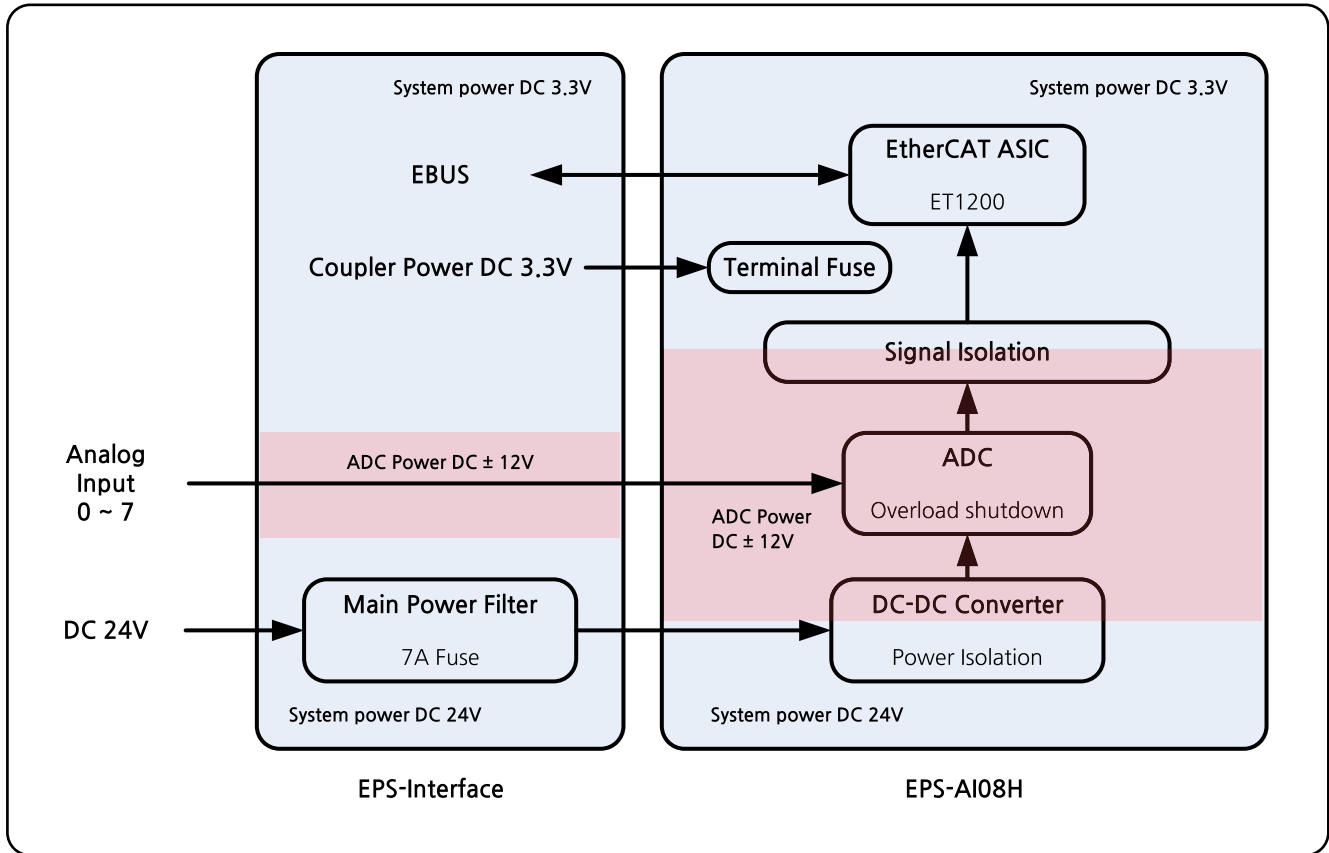
Contents	Details
Dimension	78.35 * 100 * 14 (mm)
Operating Temperature	0°C ~ 50°C
Storage Temperature	-20°C ~ 80°C
Humidity	5% ~ 90%, non-condensing
Power consumption	Power supply input +3.3V DC ± 5%, 135mA max

Environmental Specification

Contents	Details
Number of Inputs	8 Input
Input type	Single-ended
Isolation	I/O to Logic : Photo-coupler ($V_{iso} = 3,000V_{rms}$)
Resolution	16bit(2's Compliment)
Voltage Input Range	0~5V
Current Input Range	4~20mA
Error	Offset Error : ± 0.01V, 0.05mA Gain Error : ± 0.45%
Wiring contact (TE Connectivity)	INTERFACE : 1-1827872-1, 1-1827875-5 CABLE : 1-1827863-1, 1-1827864-5

Analog Input Specification

Dimension

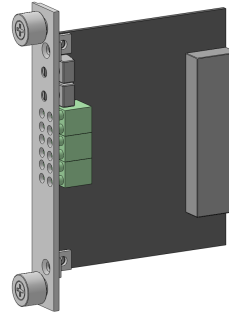
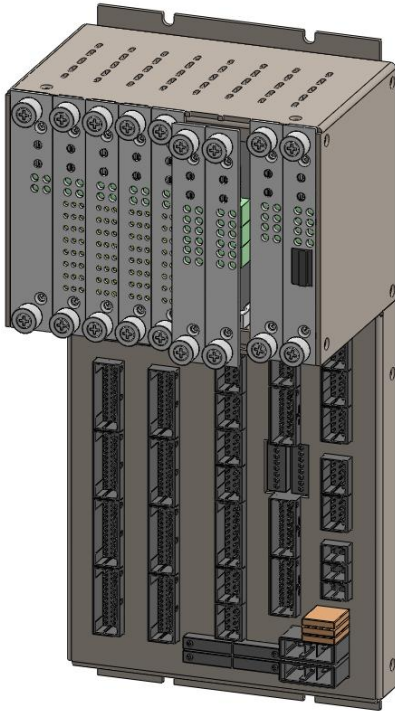
Block diagram



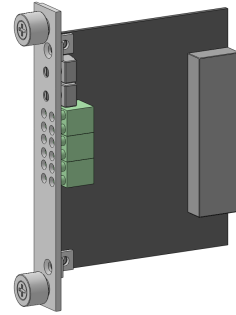
EPS-AI08H Block diagram

Interface

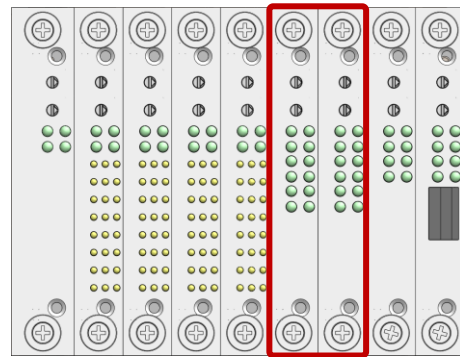
■ EPS-CHAMBER Connect



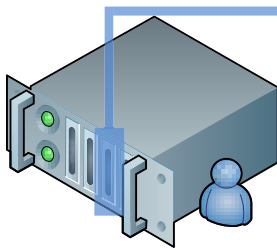
EPS-AI08H (1)



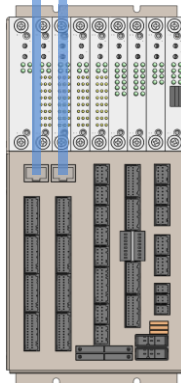
EPS-AI08H (2)



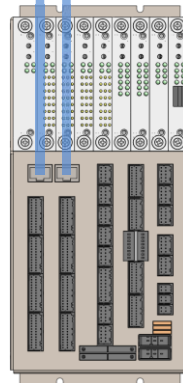
■ Slave Connect



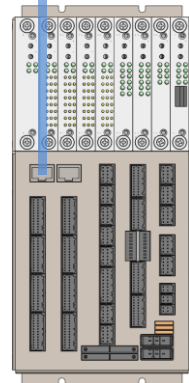
EtherCAT Master



EPS-CHAMBER (1)



EPS-CHAMBER (2)



EPS-CHAMBER (n)

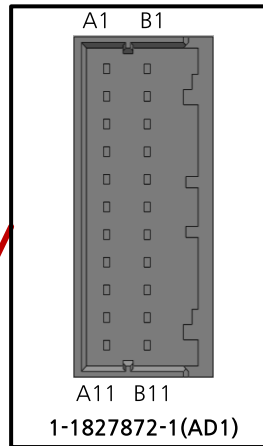
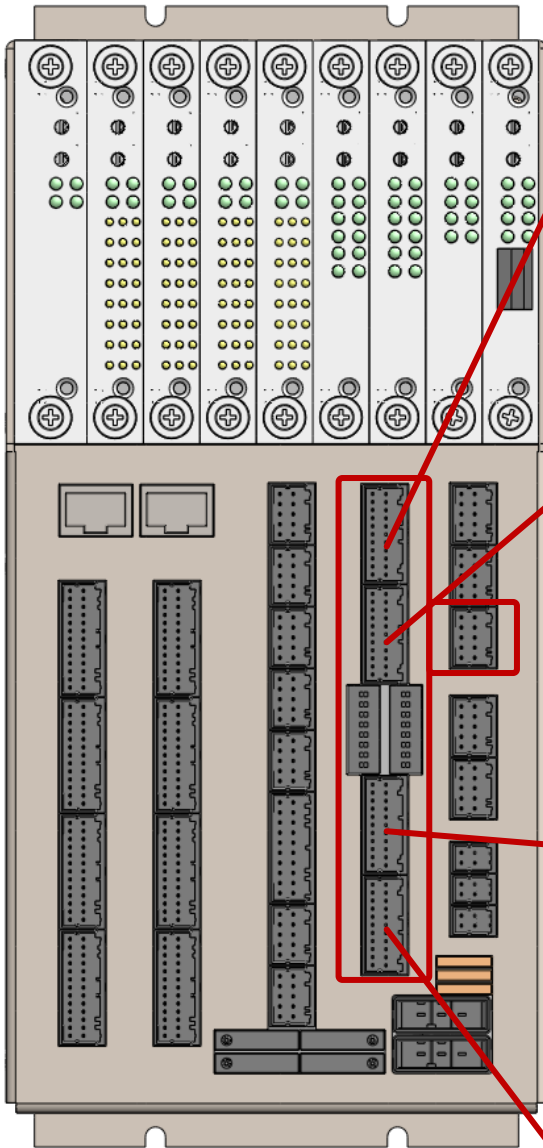
■ Analog Input mode(V/I)



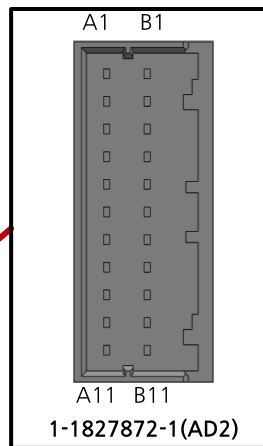
ON	Current Input
OFF	Voltage Input

※ Voltage Input mode는 AI의 F/W 변경이 필요함.

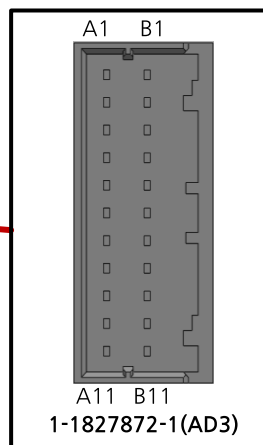
Connector



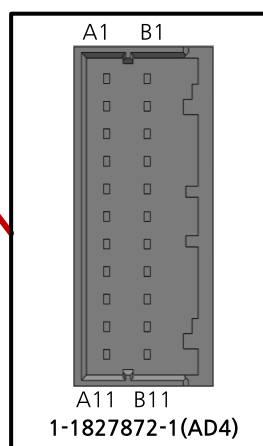
Pin #	A	B
1	P24V	P24V
2	A_IN 1	A_IN 3
3	AGND_G	AGND_G
4	N24V	N24V
5	P24V	P24V
6	A_IN 2	A_IN 4
7	AGND_G	AGND_G
8	N24V	N24V
9	-	-
10	-	-
11	-	-



Pin #	A	B
1	P24V	P24V
2	A_IN 5	A_IN 7
3	AGND_G	AGND_G
4	N24V	N24V
5	P24V	P24V
6	A_IN 6	A_IN 8
7	AGND_G	AGND_G
8	N24V	N24V
9	-	-
10	-	-
11	-	-



Pin #	A	B
1	P24V	P24V
2	A_IN 9	A_IN 11
3	AGND_G1	AGND_G1
4	N24V	N24V
5	P24V	P24V
6	A_IN 10	A_IN 12
7	AGND_G1	AGND_G1
8	N24V	N24V
9	-	-
10	-	-
11	-	-

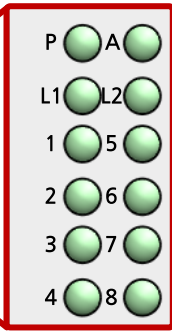
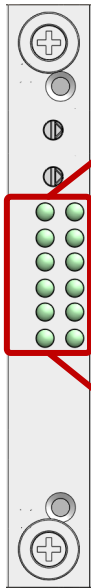


Pin #	A	B
1	P24V	P24V
2	A_IN 13	-
3	AGND_G1	AGND_G1
4	N24V	N24V
5	P24V	P24V
6	A_IN 14	-
7	AGND_G1	AGND_G1
8	N24V	N24V
9	-	-
10	-	-
11	-	-

Pin #	A	B
1	A_IN 15	A_IN 16
2	AGND_G1	AGND_G1
3	A_OUT 1	A_OUT 2
4	AGND_H	AGND_H
5	-	-

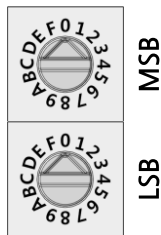
1-1827875-5(MFC 1)

Status LED



P	BOX POWER LED	ON	BOX POWER(3.3V DC) ON
		OFF	BOX POWER(3.3V DC) OFF
A	EtherCAT AL STATE LED	OFF	INIT
		Blinking(slow)	PRE-OP
		Single Flash	SAFE-OP
		ON	OP
		Flickering(fast)	BOOTSTRAP
L1	E-BUS 0 STATE LED	Blinking(slow)	E-BUS Port 0 OPEN
		OFF	E-BUS Port 0 Closed
L2	E-BUS 1 STATE LED	Blinking(slow)	E-BUS Port 1 OPEN
		OFF	E-BUS Port 1 Closed
Analog Input	INPUT STATE LED 1~8ch	ON	INPUT READY
		OFF	INPUT UNREADY

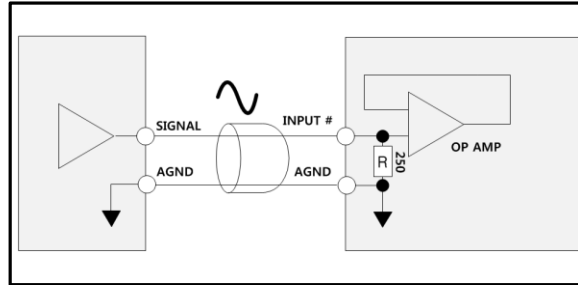
Device ID Setting



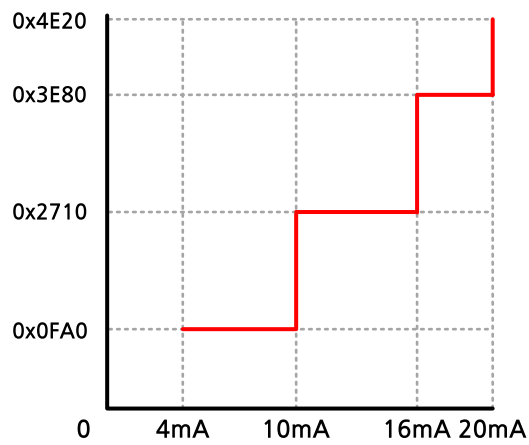
ID. Setting	$ID = MSB * 16 + LSB$
ID. Range	1 ~ 254

* 각 Terminal의 ID는 Digital Input PDO로 입력됨.

Circuit Diagram (Analog Input)



Analog Data



Hardware Reference Manual Update List

No.	Version	Date	Changes in
1	1.00	2015.05.27	First Edition
2	1.01	2016.02.26	글꼴변경 (나눔고딕, 굴림)

EPS Reference Manual

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