

EPS Hardware Reference Manual



4CHANNEL ANALOG CURRENT OUTPUT MODULE

EPS-A004I

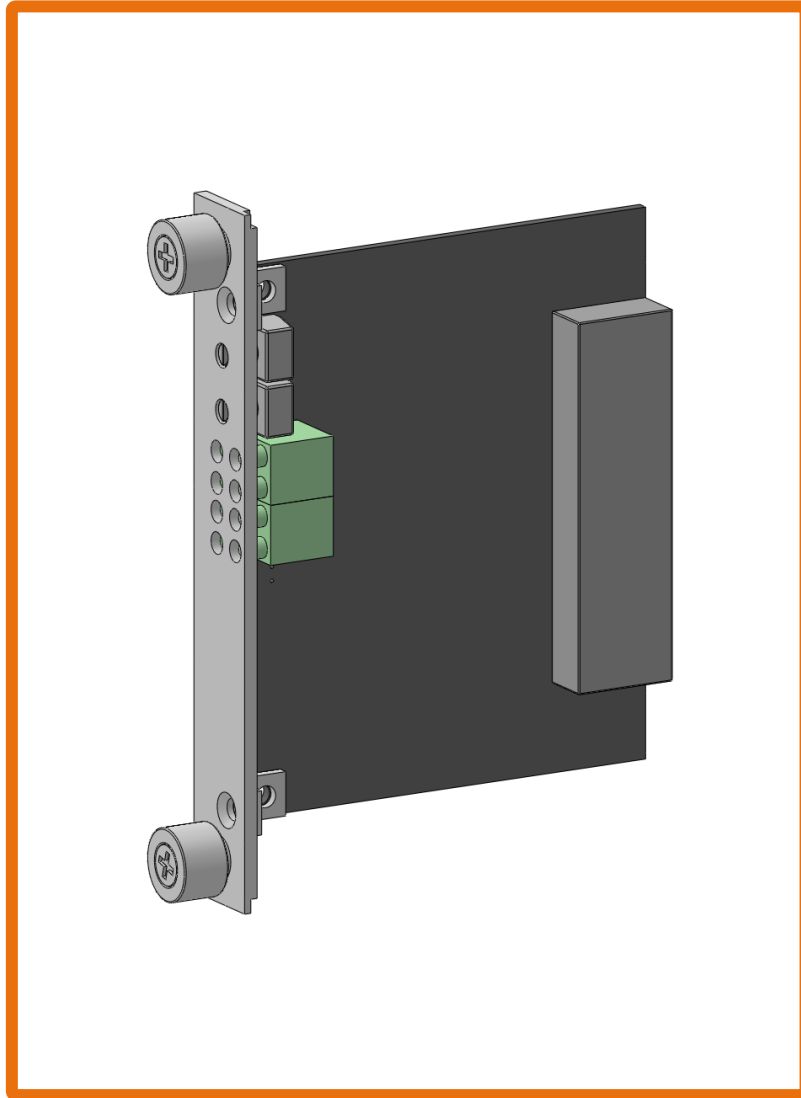
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개요



EPS - AO04I (Analog Input 8ch)

EPS-AO04I는 커미조아의 EtherCAT 기반 제어기의 4채널 Analog 출력 모듈입니다.

각 채널은 4~20mA의 전류출력이 가능 합니다.

본 매뉴얼은 EPS-AO04I의 하드웨어 구성과 기능에 대해 설명하는 하드웨어 매뉴얼 입니다.

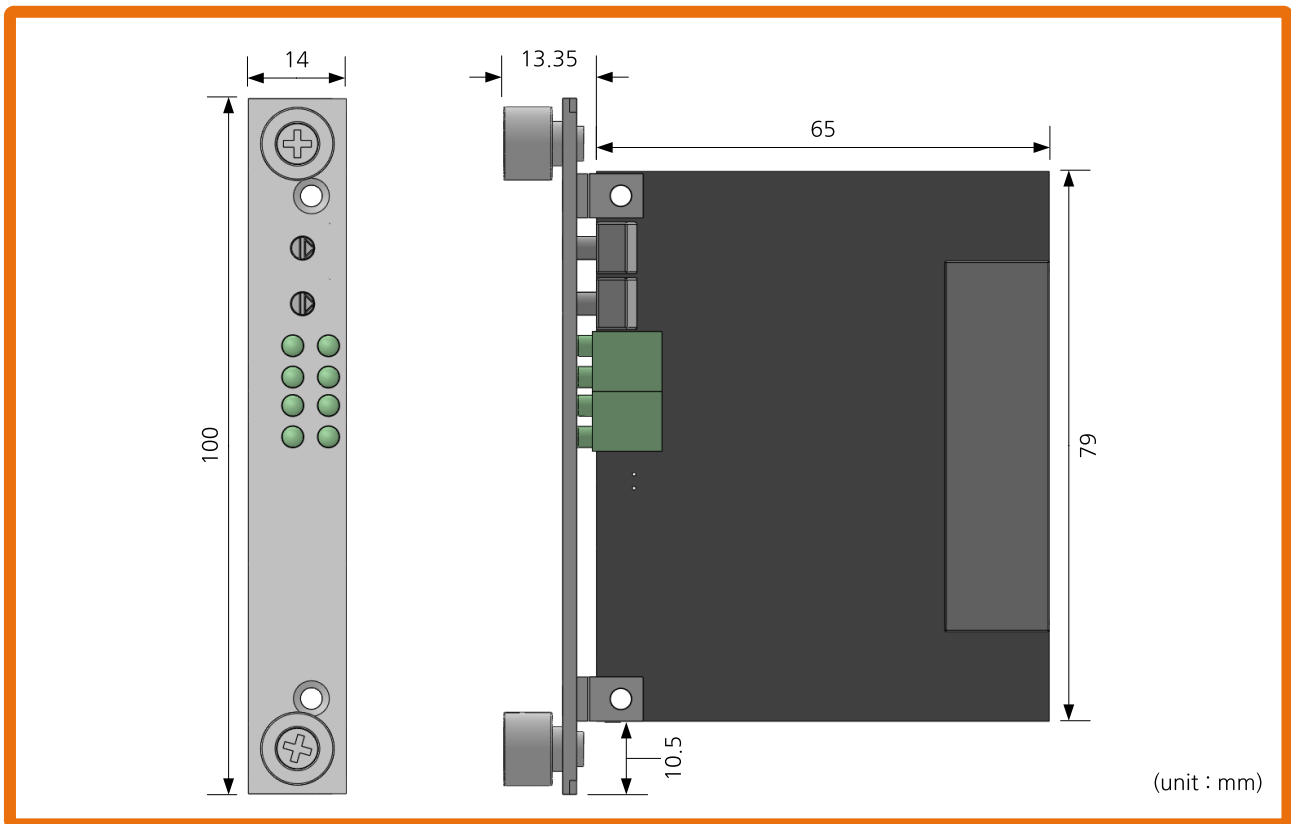
- EtherCAT Slave Module
- CiA Standard 401 and ETG.5001 Modular Device Profile
- Supports Terminal Device ID
- 16bit(2's Compliment) Resolution
- Analog Output 4(Current)
- Independent System Power

제품사양

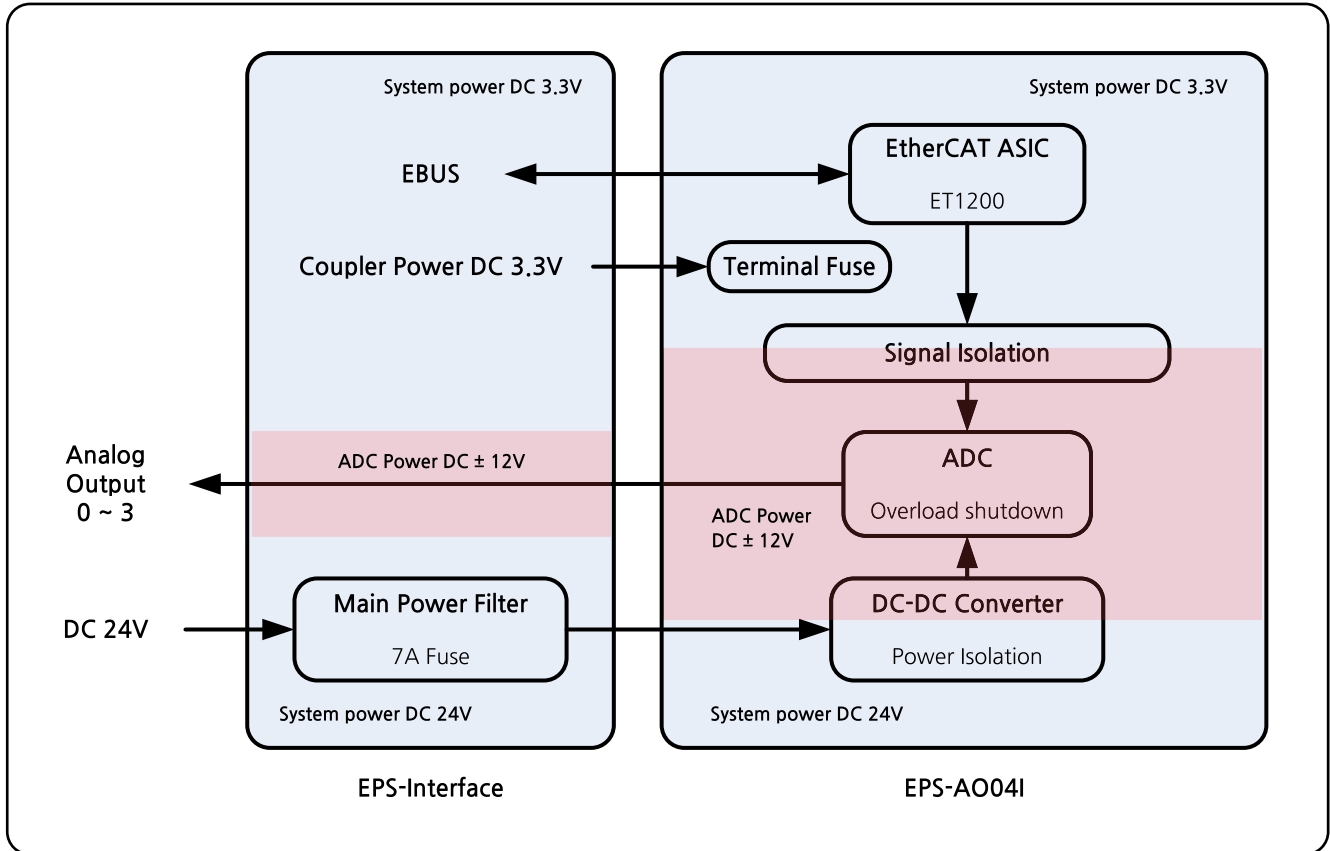
Contents	Details
Dimension	78.35 * 100 * 14 (mm)
Operating Temperature	0°C ~ 50°C
Storage Temperature	-20°C ~ 80°C
Humidity	5% ~ 90%, non-condensing
Power consumption	Power supply input +3.3V DC ± 5%, 125mA max

Environmental Specification

Contents	SES_CHAMBER
Number of Outputs	4 Output
Output type	Single-ended
Isolation	I/O to Logic : Photo-coupler ($V_{iso} = 3,000V_{rms}$)
Resolution	16bit(2's Compliment)
Current Output Range	4~20mA
Error	Offset Error : ± 0.25% Gain Error : ± 0.25%
Conversion Time	Min. 100us / All Channels
Wiring contact (TE Connectivity)	INTERFACE : 1-1827875-5 CABLE : 1-1827864-5

Analog Output Specification

Dimension

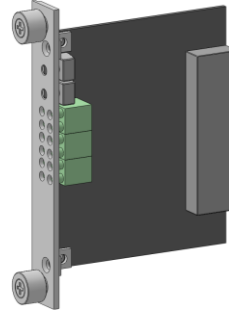
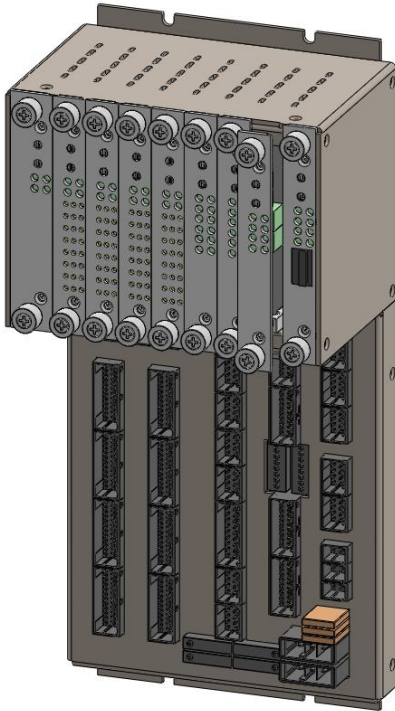
Block diagram



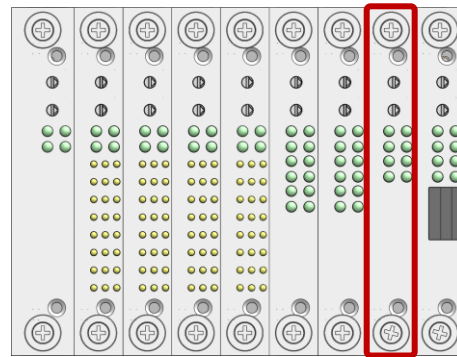
EPS-AO04I Block diagram

Interface

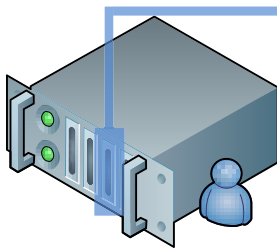
■ EPS-CHAMBER Connect



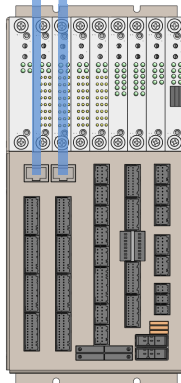
EPS-AO04I



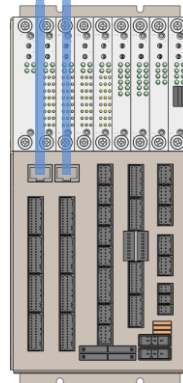
■ Slave Connect



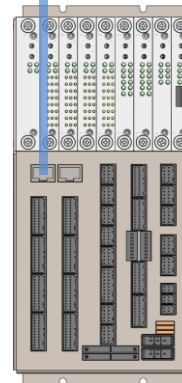
EtherCAT Master



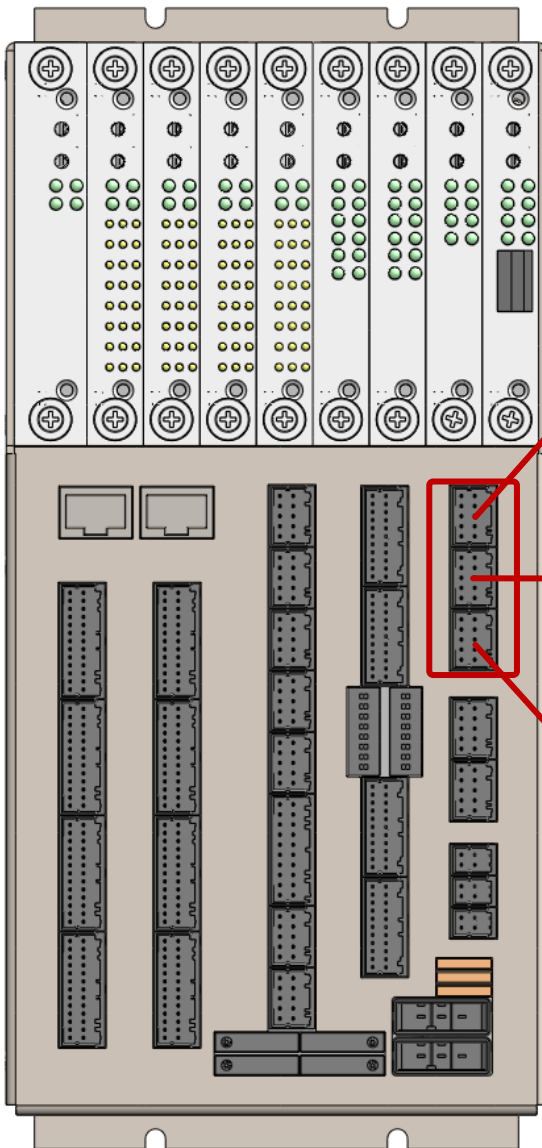
EPS-CHAMBER (1)

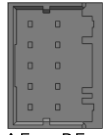


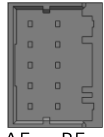
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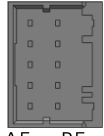


EPS-CHAMBER (n)

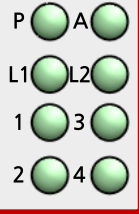
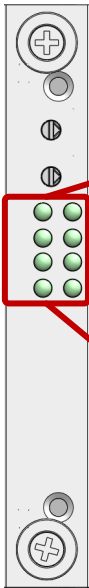
Connector


 A1 B1 A5 B5 1-1827875-5(DA 1)	Pin #	A	B
	1	P24V	N24V
	2	N24V	A_OUT 3
	3	P24V	AGND_H
	4	N24V	-
5	P24V	-	

 A1 B1 A5 B5 1-1827875-5(DA 2)	Pin #	A	B
	1	P24V	N24V
	2	N24V	A_OUT 4
	3	P24V	AGND_H
	4	N24V	-
5	P24V	-	

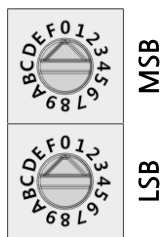
 A1 B1 A5 B5 1-1827875-5(MFC 1)	Pin #	A	B
	1	A_IN 15	A_IN 16
	2	AGND_G1	AGND_G1
	3	A_OUT 1	A_OUT 2
	4	AGND_H	AGND_H
5	-	-	

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 Output	OUTPUT STATE LED 1~4ch	ON	OUTPUT READY
		OFF	OUTPUT UNREADY

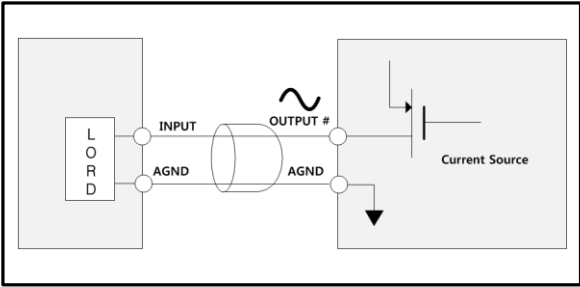
Device ID Setting



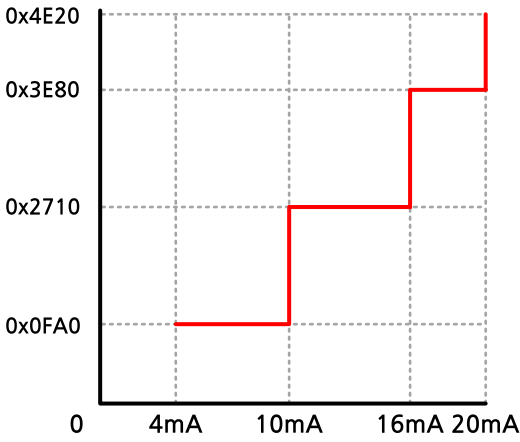
ID. Setting	$ID = MSB * 16 + LSB$
ID. Range	1 ~ 254

* 각 Terminal의 ID는 Digital Input PDO로 입력됨.

Circuit Diagram (Analog Output)



Analog Data



Hardware Reference Manual Update List

No.	Version	Date	Changes in
1	1.00	2015.05.28	First Edition
2	1.01	2016.02.26	글꼴변경 (나눔고딕, 굴림)

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