ETS Hardware Reference Manual

COMIZOA

8CHANNEL DIGITAL INPUT/OUTPUT MODULE

ETS-D08MP

FEB 2016

Hardware Manual Revision : 1.0.1
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개요
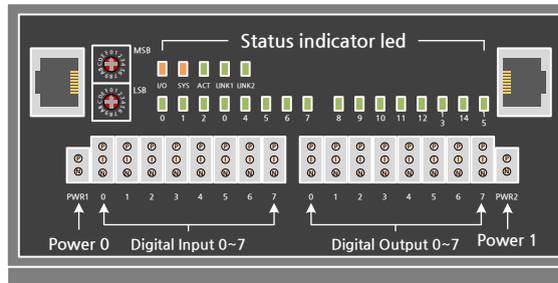
ETS - D08MP / Digital Input / Output (NPN)

ETS-D08MP는 EtherCAT 기반 제어기인 ETS Series의 8채널 Digital 입력/ 8채널 Digital 출력 모듈입니다. 각 채널의 내부 제어신호와 외부 입출력 신호는 포토커플러를 사용하여 절연됩니다. 본 매뉴얼은 ETS-D08MP의 하드웨어 구성과 기능에 대해 설명하는 하드웨어 매뉴얼 입니다.

제품사양

▣ Power Specification

ITEM	Details
Power Dissipation(System)	Max. 40mA @ 24.0V DC
Power Dissipation(I/O)	Max. 30mA @ 24.0V DC
Rated Input Voltage	24V DC (-15%/+20%, ripple ratio within 5%) EN 61131-2

▣ Comm. Specification

ITEM	Details
Transmission speed for EtherCAT	100 Mbit/s with Full Duplex
MDI/MDI-X	MDI/MDI-X auto-crossover.
ESD Protection	Contact Discharge (Typ.) 4kV
	Air Discharge (Typ.) 8kV

▣ Digital Specification

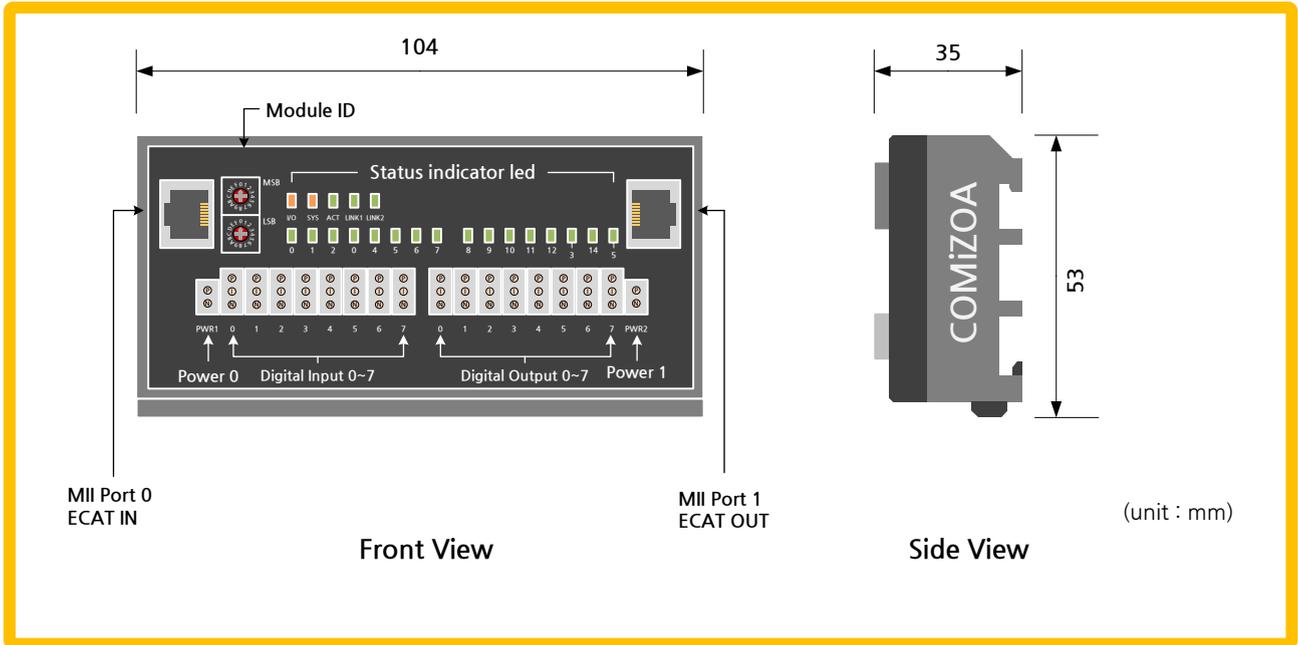| Contents	Details
Number of Inputs	Isolated 8 Input
Input type	Current source type (PNP)
Input Range	DC 0 ~ 24V
Input Current	Min. 3.6mA / channel
Input Impedance	5.1 KOhm
Input Level Tolerant	Low (Min. 0V ~ Max. 5V)
	High (Min. 18V ~ Max. 24V)
Isolation	1 KV Channel to Channel

Digital Input Specification

Contents	Details
Number of Outputs	Isolated 8 Output
Output type	MOSFET with common ground (PNP)
Output Voltage	Min. 5V ~ Max. 35V
Sink Current	Max. 500mA / channel
Rds(On state resistance)	Max. 500mOhm
Throughput	10Khz (0.1ms)
Overload Shutdown	1.1A Min ~ 2A Max

Digital Output Specification

▣ Environmental Specification

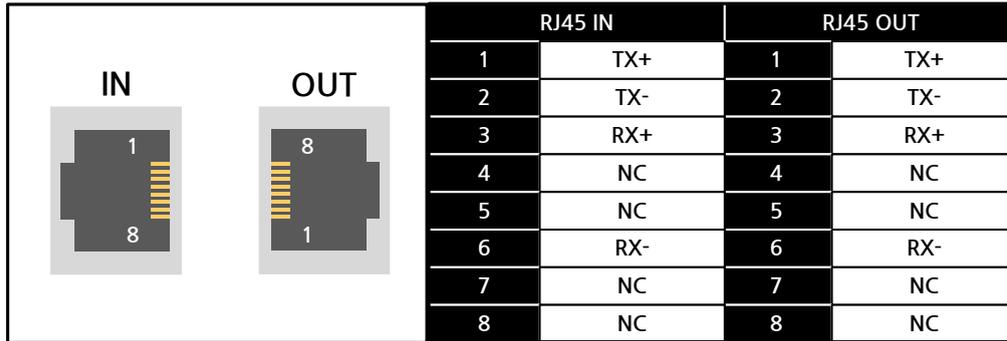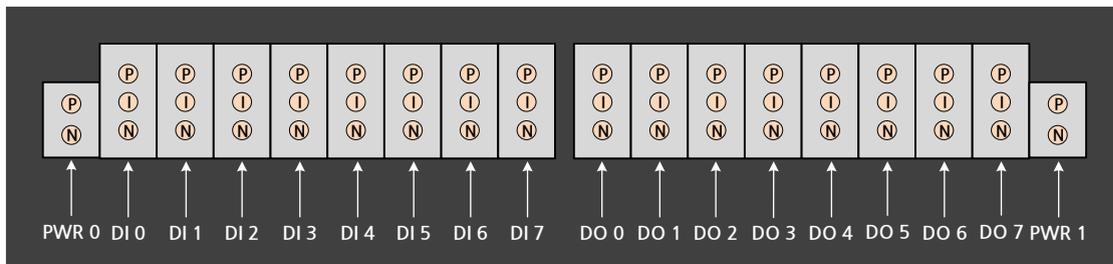| ITEM	Details
Dimension	104 * 53 * 35 (mm)
Install	Industrial DIN rail
Operating Temperature Range	0℃ ~ 50℃
Storage Temperature Range	-20℃ ~ 80℃
Operating Humidity Range	5% ~ 90%RH, non-condensing
Storage Humidity Range	5% ~ 90%RH, non-condensing

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제품사양

104

Module ID

Status indicator led

MSB
LSB

I/O SYS ACT LINK1 LINK2

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

PWR1 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 PWR2

Power 0 | Digital Input 0~7 | Digital Output 0~7 | Power 1

MII Port 0
ECAT IN

MII Port 1
ECAT OUT

Front View

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COMiZOA

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(unit : mm)

Side View

Dimension

Wiring

■ RJ45 Connector

IN   OUT

	RJ45 IN		RJ45 OUT
1	TX+	1	TX+
2	TX-	2	TX-
3	RX+	3	RX+
4	NC	4	NC
5	NC	5	NC
6	RX-	6	RX-
7	NC	7	NC
8	NC	8	NC

■ Contact Number

PWR 0 DI 0 DI 1 DI 2 DI 3 DI 4 DI 5 DI 6 DI 7   DO 0 DO 1 DO 2 DO 3 DO 4 DO 5 DO 6 DO 7 PWR 1

※ All numberings are zero based

■ Circuit Diagram

I/O POWER 24V

OUTPUT #

LOAD

I/O POWER 0V

Power MOS

ETS-D08MP

I/O POWER 0V

■ PIN MAP

PWR 0, 1	
P	PWR 24V
N	PWR 0V

DIO 0 ~ 7	
P	I/O PWR 24V
I/O	Digital In/Out
N	I/O PWR 0V
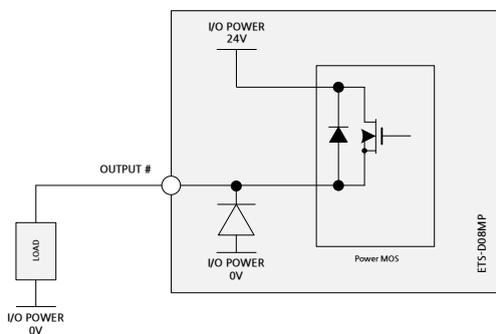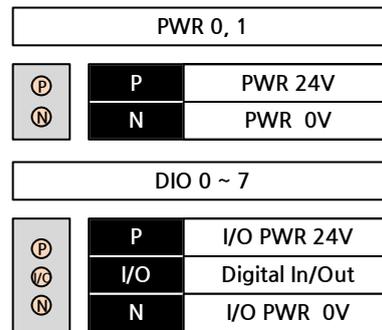
Indicators

I/O	I/O POWER LED	ON	DIGITAL I/O POWER(24V DC) ON
		OFF	DIGITAL I/O POWER(24V DC) OFF
SYS	SYSTEM POWER LED	ON	SYSTEM POWER(3.3V DC) ON
		OFF	SYSTEM POWER(3.3V DC) OFF
ACT	EtherCAT AL STATE LED	OFF	INIT
		Blinking(slow)	PRE-OP
		Single Flash	SAFE-OP
		ON	OP
		Flickering(fast)	BOOTSTRAP
LINK 0(1)	LINK 0(1) STATE LED	Blinking(slow)	MII Port 0(1) OPEN
		OFF	MII Port 0(1) Closed
DI 0-7 DO 0-7	OUTPUT STATE LED	ON	OUTPUT ON STATE (LOGIC ' 1')
		OFF	OUTPUT ON STATE (LOGIC ' 0')

Interface Connect

EtherCAT Master

ETS NODE 0   ETS NODE 1   ETS NODE 2

ETS NODE 3   ETS NODE 4   ETS NODE 5
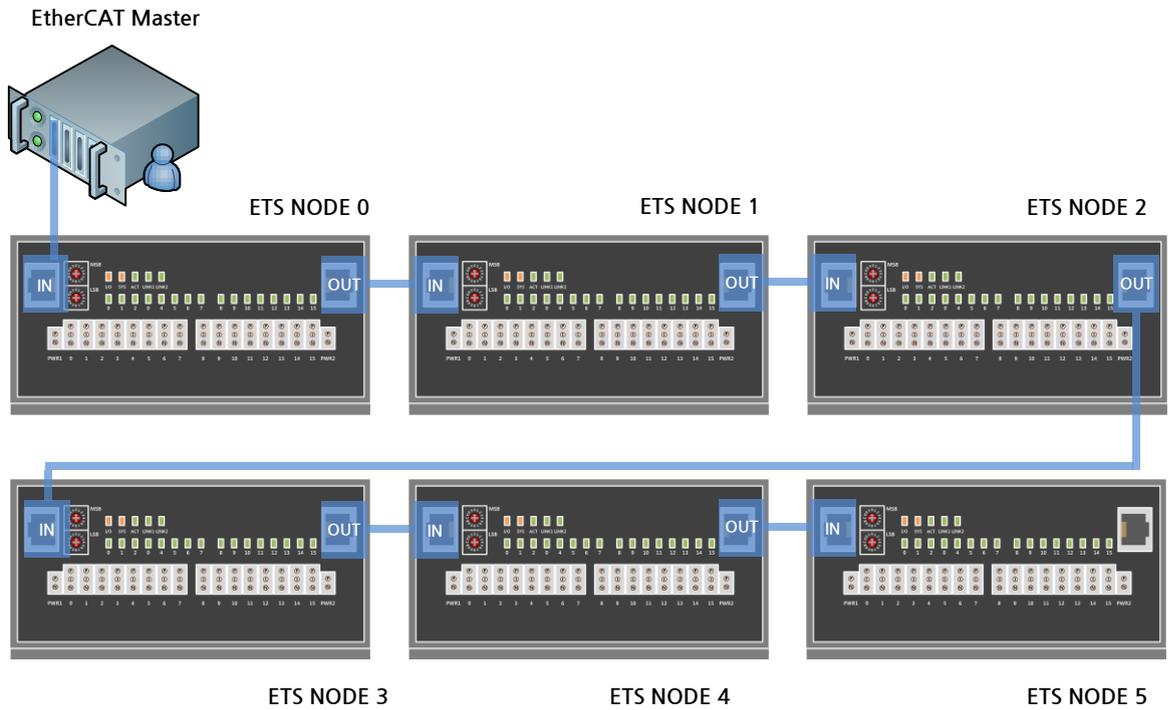
Device ID Setting

MSB / LSB dials	NODE ID setting	I.P = MSB *16 + LSB
	NODE ID range	1 ~ 256

Hardware Reference Manual Update List

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

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