

# ETS Hardware Reference Manual



8CHANNEL **DIGITAL INPUT/OUTPUT** MODULE

**ETS-D08MN**

FEB 2016  
©2016 COMIZOA, All rights reserved

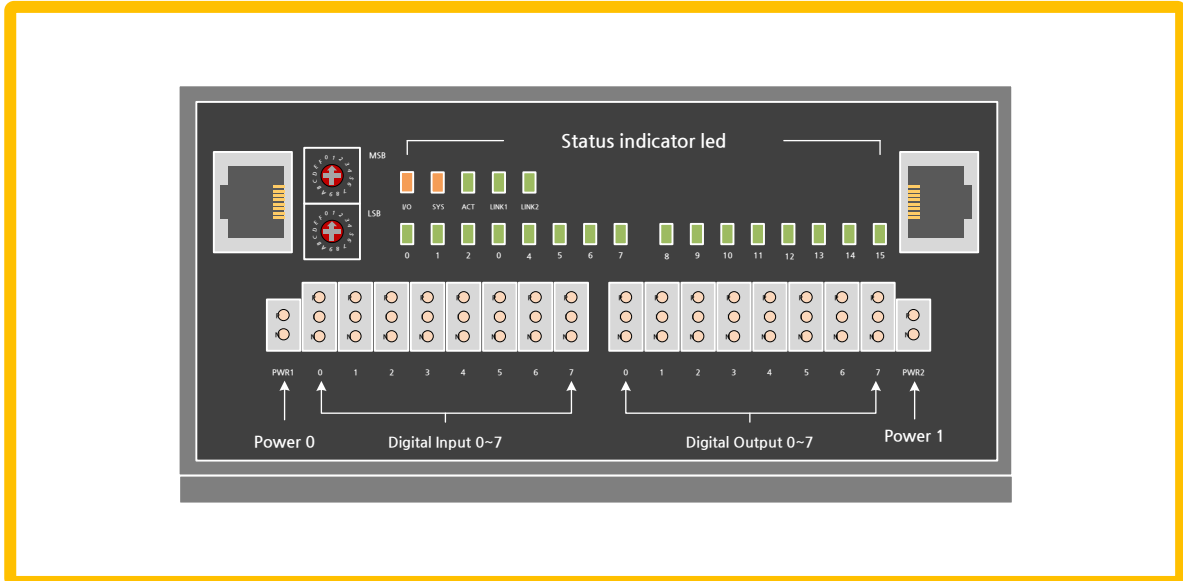
Hardware Manual Revision : 1.0.3  
Revision Data 2019. 07. 08

---

## Table Of Contents

1	개요 .....	1
2	제품사양 .....	2
3	Wiring .....	4
4	Indicators .....	5
5	Interface Connect .....	6
6	Device ID Setting .....	6
7	Function Setting .....	6

## 개요



ETS - D08MN / Digital Input / Output (NPN)

ETS-D08MN는 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-D08MN의 하드웨어 구성과 기능에 대해 설명하는 하드웨어 매뉴얼입니다.

**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 sinking 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

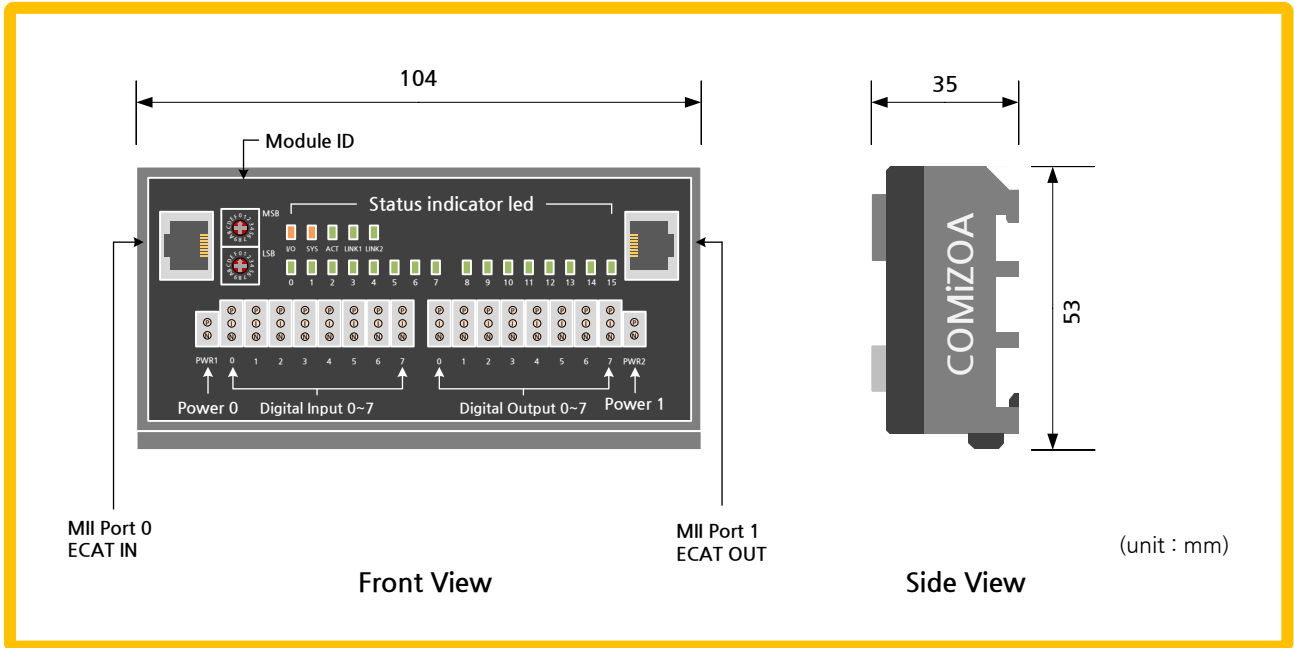
**Digital Input Specification**

Contents	Details
Number of Outputs	Isolated 8 Output
Output type	MOSFET with common ground (NPN)
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

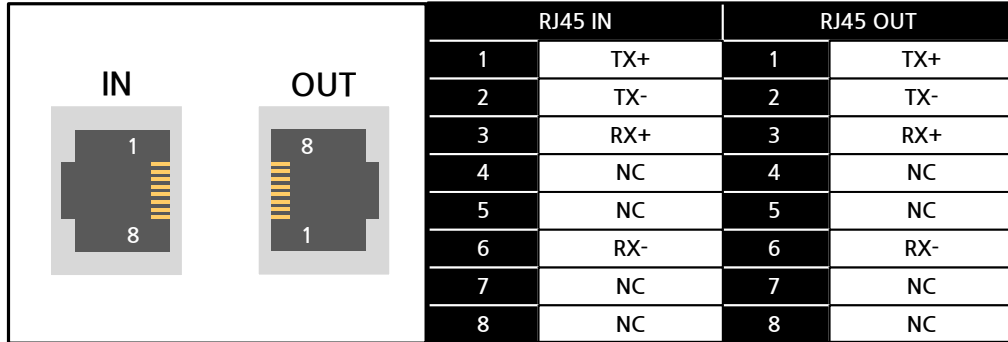
제품사양



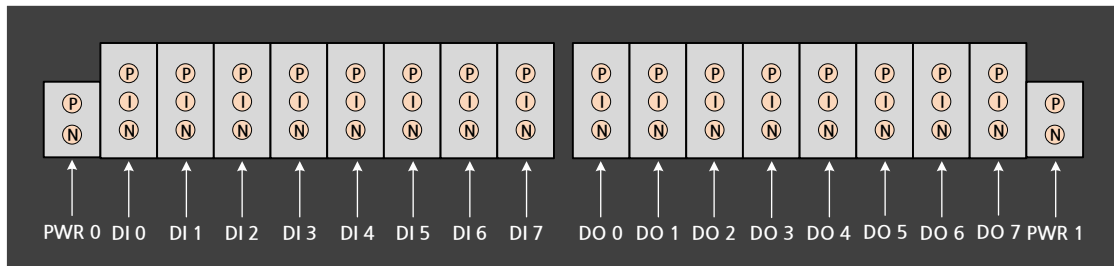
Dimension

Wiring

■ RJ45 Connector

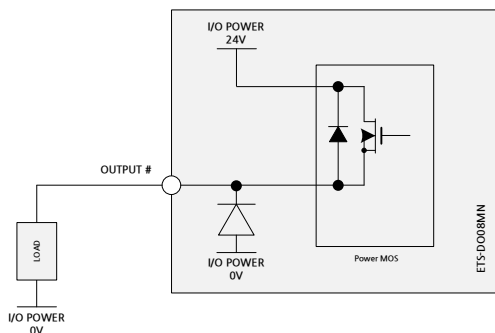


■ Contact Number

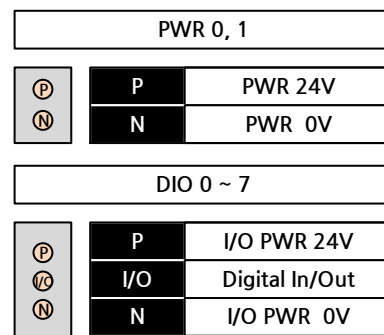


※ All numberings are zero based

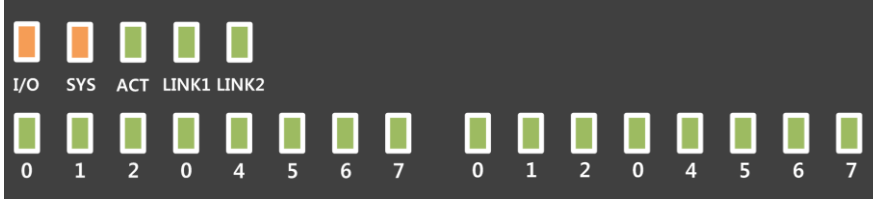
■ Circuit Diagram



■ PIN MAP

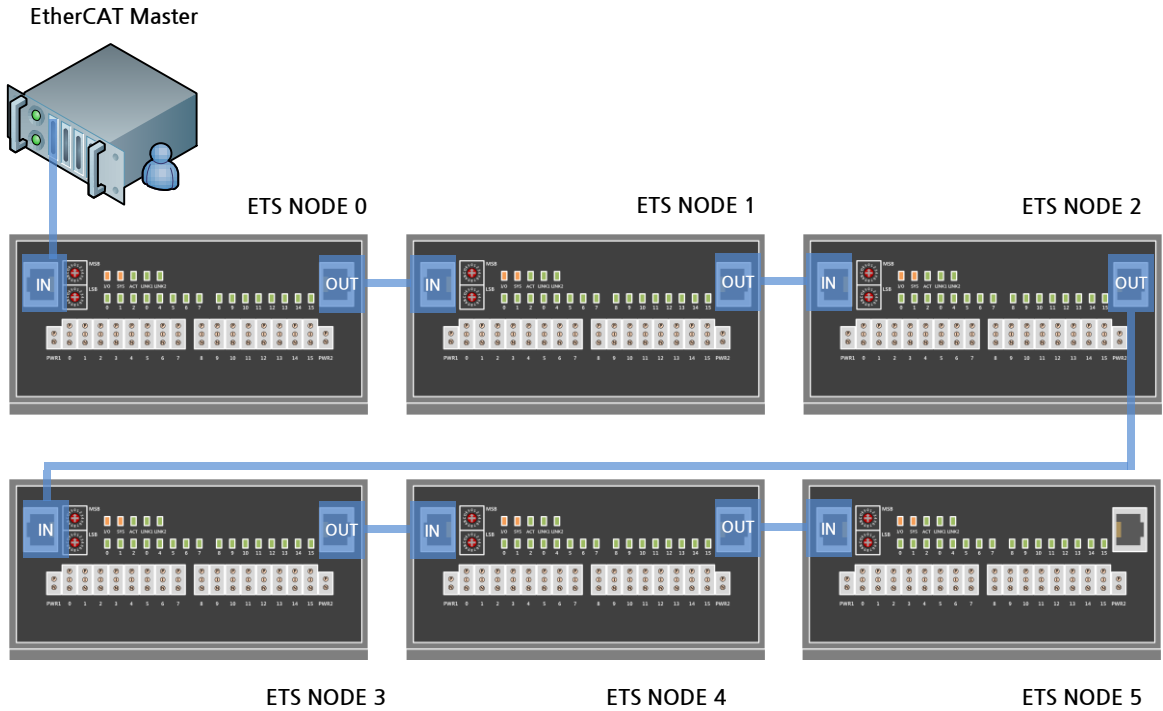


\* PWR1 커넥터는 PWR0 커넥터로 들어온 전원을 다음 제품으로 전달해주는 Bridge 역할의 커넥터입니다. Bridge를 통해 공급할 수 있는 전류의 크기는 약 3A 입니다. 전원 배선시 유의 바랍니다.

**Indicators**


<b>I/O</b>	I/O POWER LED	ON	DIGITAL I/O POWER(24V DC) ON
		OFF	DIGITAL I/O POWER(24V DC) OFF
<b>SYS</b>	SYSTEM POWER LED	ON	SYSTEM POWER(3.3V DC) ON
		OFF	SYSTEM POWER(3.3V DC) OFF
<b>ACT</b>	EtherCAT AL STATE LED	OFF	INIT
		Blinking(slow)	PRE-OP
		Single Flash	SAFE-OP
		ON	OP
		Flickering(fast)	BOOTSTRAP
<b>LINK 0(1)</b>	LINK 0(1) STATE LED	Blinking(slow)	MII Port 0(1) OPEN
		OFF	MII Port 0(1) Closed
<b>DO 0-15</b>	OUTPUT STATE LED	ON	OUTPUT ON STATE (LOGIC ' 1')
		OFF	OUTPUT ON STATE (LOGIC ' 0')

Interface Connect



Device ID Setting

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

Function Setting

	No. 1 ON	-
	No. 1 OFF	-
	No. 2 ON	통신 끊어지면 출력 값 리셋 (Ch. 0 ~ 7)
	No. 2 OFF	통신 끊어지면 출력 값 유지 (Ch. 0 ~ 7)



## Hardware Reference Manual Update List

No.	Version	Date	Changes in
1			First Edition
2	1.01	2016.02.26	글꼴변경 (나눔고딕, 굴림)
3	1.02	2018.05.31	4 Page 주의사항 추가
4	1.03	2019.07.08	DO 출력 유지 설정 추가

# ETS Reference Manual

Copyright holder : COMIZOA CO.,LTD  
Copyright (c) by COMIZOA CO.,LTD. All right reserved.  
2016. 02. 26.



COMIZOA CO.,LTD  
<http://www.comizoa.com>  
Tel) +82 - 42 - 936 - 6500  
Fax) +82 - 42 - 936 - 6507

All the details including figures and programs included in this manual is protected by Korean Copyright.  
Any parts of this manual can be copied or distributed without COMIZOA's permission.