

# ETS Hardware Reference Manual



16CHANNEL **DIGITAL INPUT** MODULE

**ETS-DI16N**

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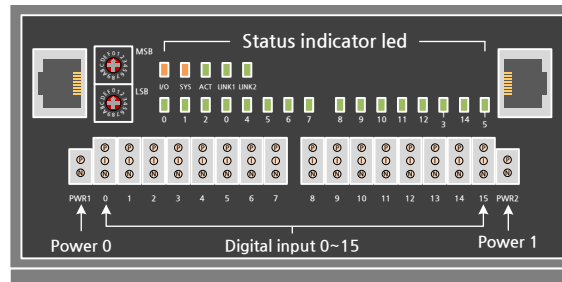
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## 개요



## ETS Series - ETS-DI16N (Digital NPN Input 16ch)

ETS-DI16N는 EtherCAT 기반 제어기인 ETS Series의 16채널 Digital 입력 모듈입니다.

각 채널의 내부 제어신호와 외부 입출력 신호는 포토커플러를 사용하여 절연됩니다.

본 매뉴얼은 ETS-DI16N의 하드웨어 구성과 기능에 대해 설명하는 하드웨어 매뉴얼입니다.

**제품사양**
**Power Specification**

ITEM	ETS-DI16N
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	ETS-DI16N
Transmission speed for EtherCAT	10/100 Mbit/s with Full Duplex
MDI/MDI-X	MDI/MDI-X auto-crossover.
ESD Protection	Contact Discharge (Typ.) 4kV
	Air Discharge (Typ.) 8kV

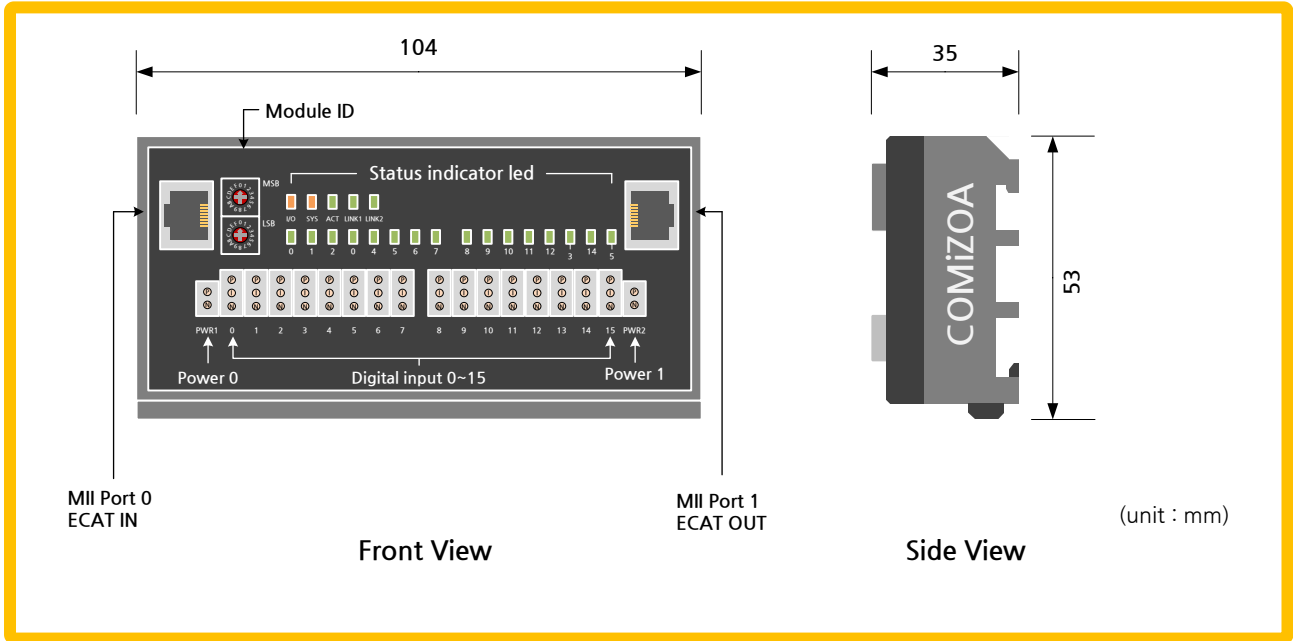
**Digital Specification**

ITEM	ETS-DI16N
Number of Inputs	16 input
Input type	Current Sink Type ( NPN )
Isolation	Photo-coupler ( $V_{iso} = 3,000V_{rms}$ )
On State Voltage (logic ' 1' )	Min. 11V DC ~Max 28.8 V DC EN 61131-2, type 1/3
On State Voltage (logic ' 0' )	Min. 5V DC EN 61131-2, type 1/3
On state Current	Max. 4.2mA per @ 28.8V DC
Input Impedance	Approx. 5.1K $\Omega$ ( $\pm 5\%$ )
Wiring contact	5264-03(DI 3Pin), 5264-02(PWR 2Pin)

**Environmental Specification**

ITEM	ETS-DI16N
Dimension	104 * 53 * 35 (mm)
Install	Industrial DIN rail
Operating Temperature Range	0°C ~ 50°C
Storage Temperature Range	-20°C ~ 80°C
Operating Humidity Range	5% ~ 90%, non-condensing
Storage Humidity Range	5% ~ 90%, non-condensing

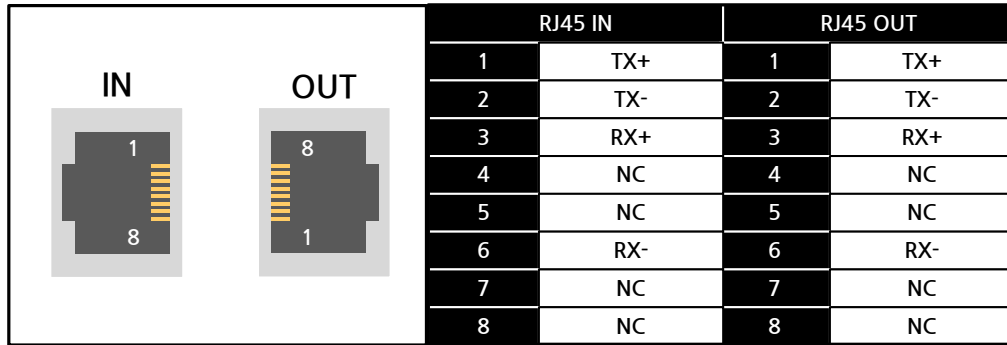
제품사양



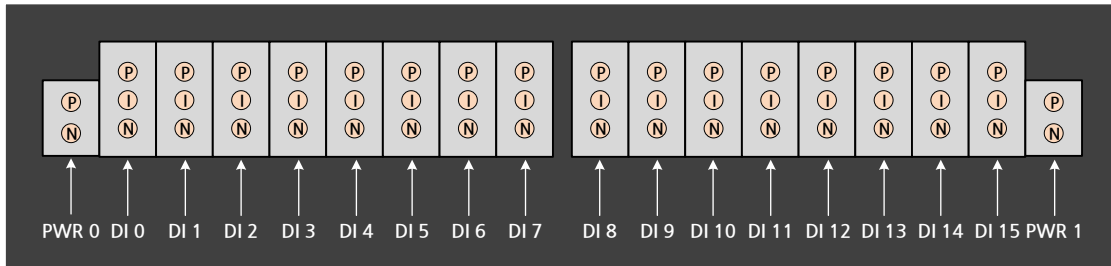
Dimension

**Wiring**

■ RJ45 Connector

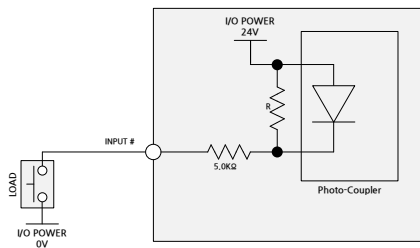


■ Contact Number



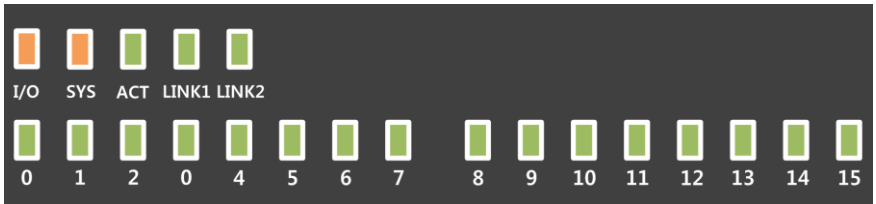
※ All numberings are zero based

■ Circuit Diagram



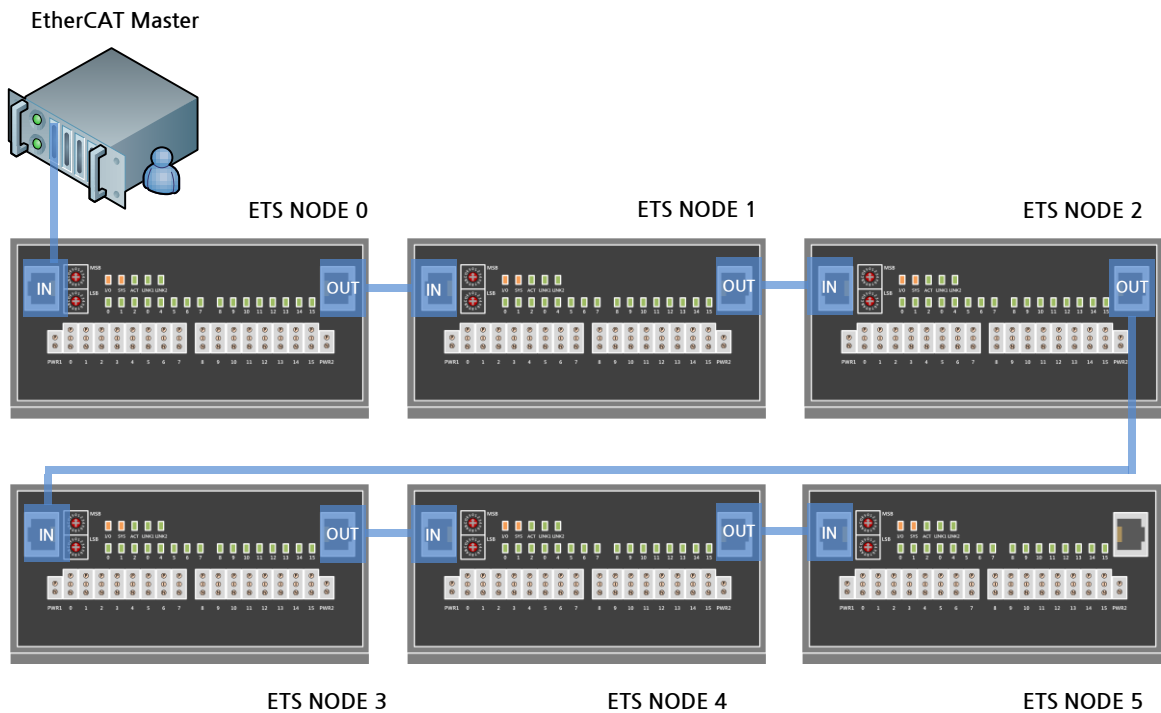
■ PIN MAP

PWR 0, 1		
(P)	P	PWR DC 24V
(N)	N	PWR DC 0V
DI 0 ~ 15		
(P)	P	I/O PWR 24V
(I)	I	Digital Input
(N)	N	I/O PWR 0V

**Indicators**


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

**Interface Connect**



**Device ID Setting**

<p>MSB</p> <p>LSB</p>	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	2016.02.29	글꼴변경 (나눔고딕, 굴림)

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