ETS Hardware Reference Manual
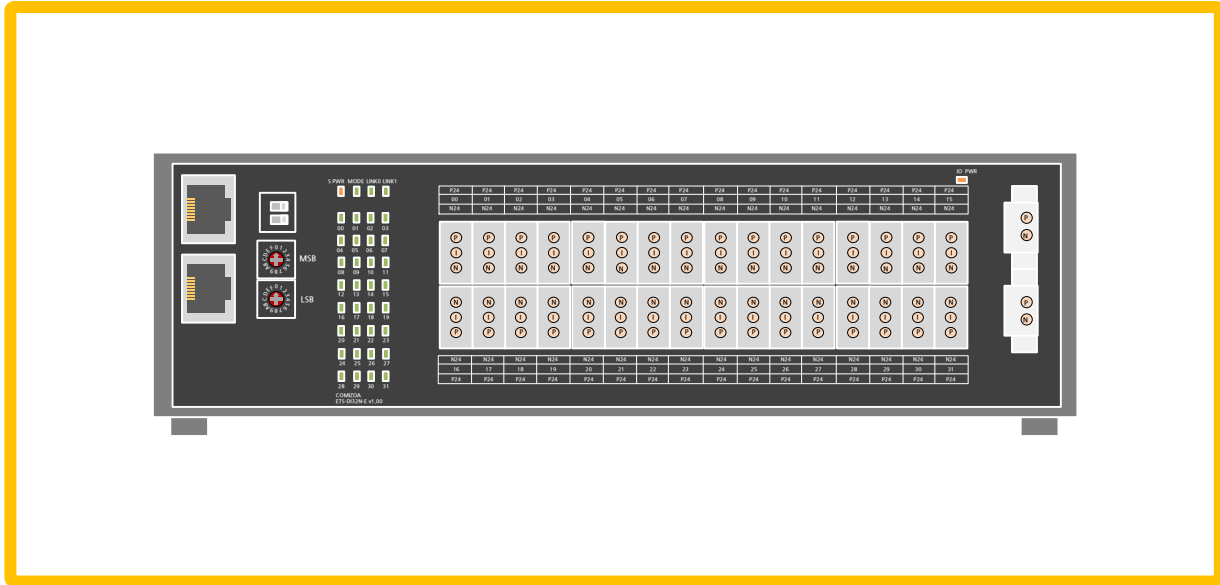
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32CHANNEL DIGITAL NPN TYPE INPUT MODULE

ETS-DI32N-E (v1.00)

OCT 2017

Table Of Contents

개요

ETS - DI32N - E (Digital NPN Input 32ch)

ETS-DI32N-E는 커미조아의 EtherCAT 기반 제어기의 32채널 Digital 입력 모듈입니다.

각 채널의 내부 제어신호와 외부 입출력 신호는 포토커플러를 사용하여 절연됩니다.

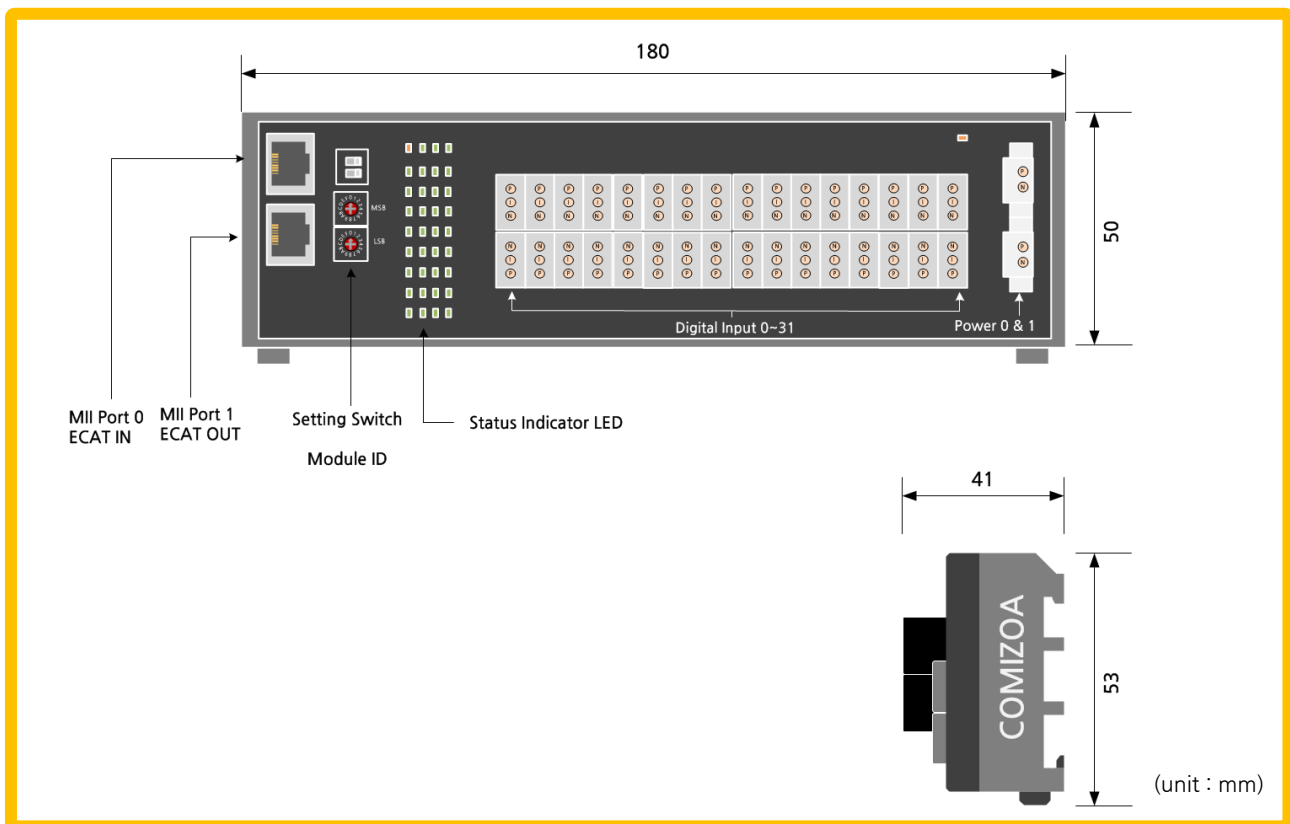본 매뉴얼은 ETS-DI32N-E의 하드웨어 구성과 기능에 대해 설명하는 하드웨어 매뉴얼 입니다.

- ◉ EtherCAT Slave Module
- ◉ CiA Standard 401 and ETG.5001 Modular Device Profile
- ◉ Supports Terminal Device ID
- ◉ Digital I/O Power Over Current Protection
- ◉ Digital Input 32(NPN)
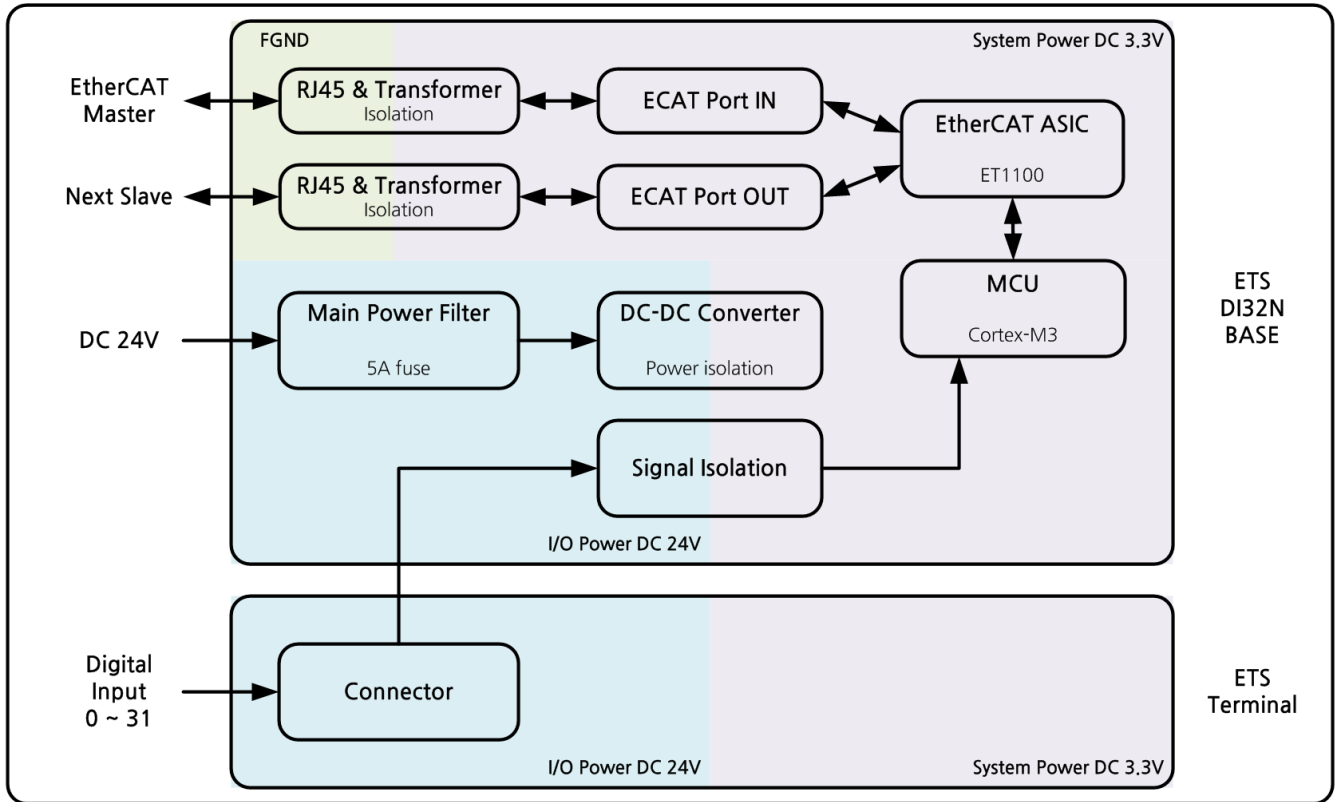- ◉ Independent System Power

Specification

Contents	Details
Dimension	180 * 53 * 41 (mm)
Operating Temperature	0°C ~ 50°C
Storage Temperature	-20°C ~ 80°C
Humidity	5% ~ 90%, non-condensing
Power consumption	System Power : 47mA @ DC 24V ± 5% I/O Power : 180mA @ DC 24V ± 5%

Environmental Specification

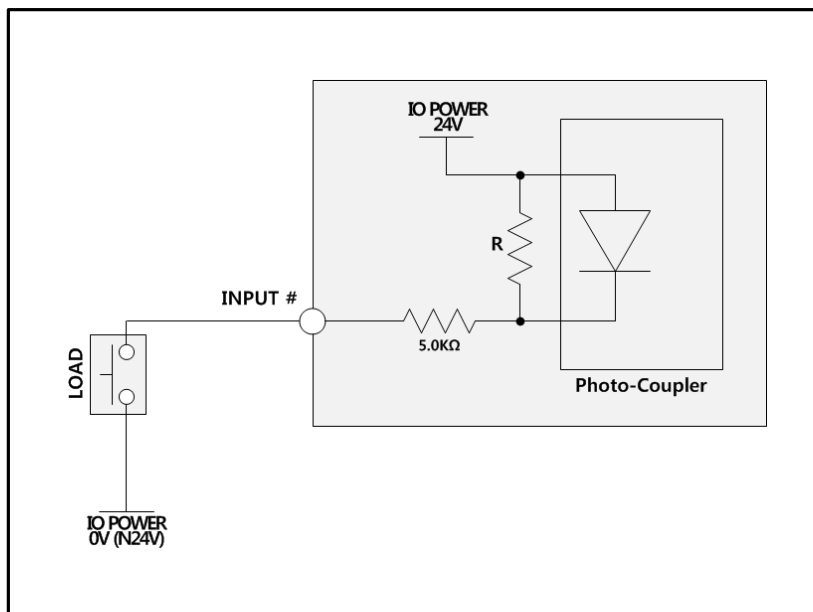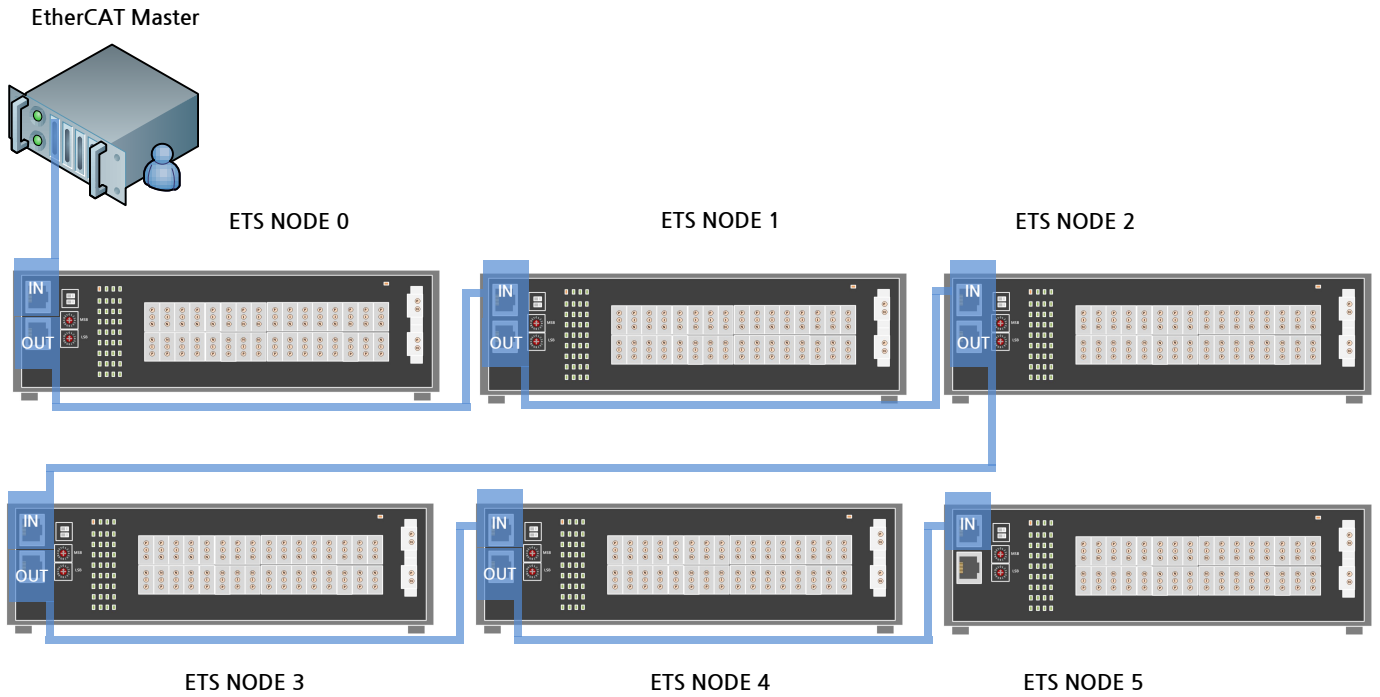| Contents	Details
Number of Inputs	32 Input
Input type	Current Sinking type (NPN)
Isolation	Photo-coupler (V_{iso} = 3,000V_{rms})
OFF State Voltage (logic ' 1')	Min. 11V DC ~ Max. 28.8 V DC (EN 61131-2, type 1/3)
On State Voltage (logic ' 0')	Min. 0V DC ~ Max. 5V DC (EN 61131-2, type 1/3)
Input Current	Max. 4.56mA per @ 24V DC
Input Impedance	Approx. 5KΩ (±5%)
Wiring Contact	I/O : 3-Pin E-CON / Power : USL-3FBS-2P

Digital Input Specification

Dimension

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Block Diagram

ETS-DI32N-E Block diagram

Circuit Diagram (Digital Input)

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

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Connector

◉ RJ45 Connector

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

◉ Contact Number

DI 0 | DI 1 | DI 2 | DI 3 | DI 4 | DI 5 | DI 6 | DI 7 | DI 8 | DI 9 | DI 10 | DI 11 | DI 12 | DI 13 | DI 14 | DI 15 | PWR0

DI 16 | DI 17 | DI 18 | DI 19 | DI 20 | DI 21 | DI 22 | DI 23 | DI 24 | DI 25 | DI 26 | DI 27 | DI 28 | DI 29 | DI 30 | DI 31 | PWR1

◉ PIN MAP

PWR 0, 1	
P	PWR DC P24V INPUT
N	PWR DC N24V INPUT

DI 0 ~ 31	
P	I/O PWR P24V OUTPUT
I	DIGITAL INPUT
N	I/O PWR N24V OUTPUT
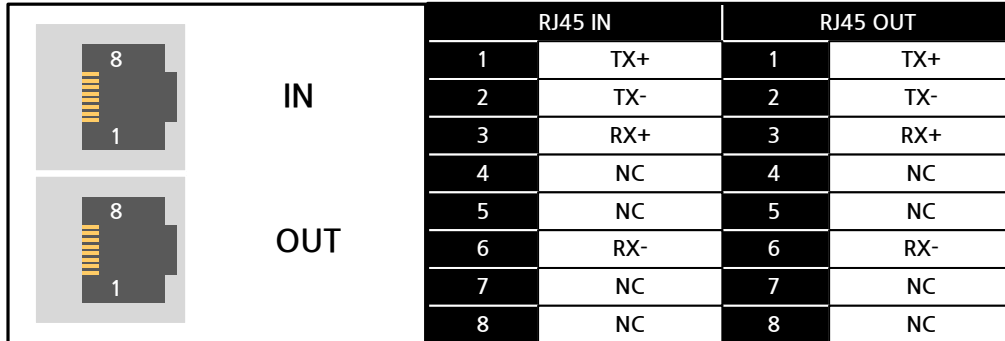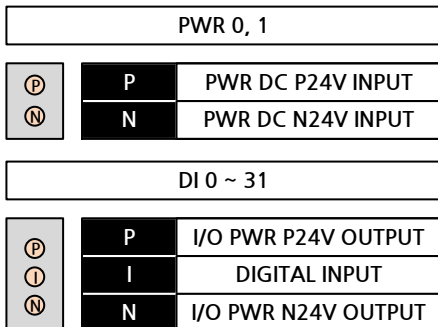
Status LED
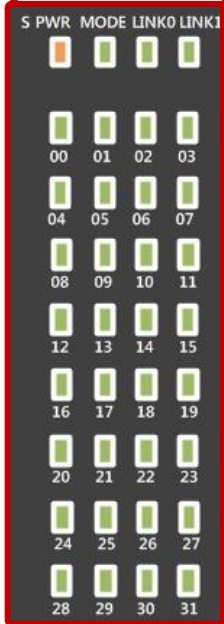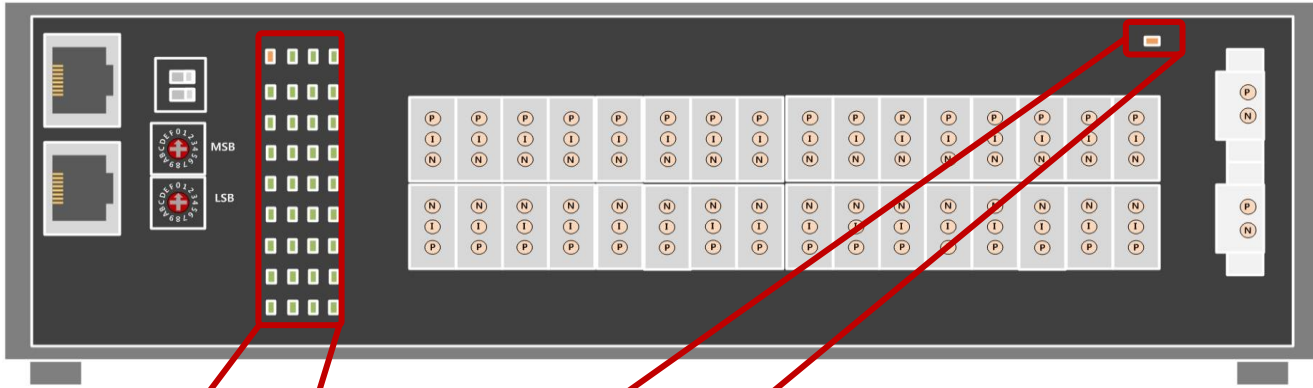
IO PWR	I/O POWER LED	ON	DIGITAL I/O POWER(24V DC) ON
		OFF	DIGITAL I/O POWER(24V DC) OFF
S PWR	SYSTEM POWER LED	ON	SYSTEM POWER(3.3V DC) ON
		OFF	SYSTEM POWER(3.3V DC) OFF
MODE	EtherCAT AL STATE LED	OFF	INIT
		Blinking(slow)	PRE-OP
		Single Flash	SAFE-OP
		ON	OP
		Flickering(fast)	BOOTSTRAP
LINK 0(1)	LINK 0(1) STATE LED	Blinking(slow)	MII Port 0(1) OPEN
		OFF	MII Port 0(1) Closed
DI 0-31	INPUT STATE LED	ON	INPUT ON STATE (LOGIC '1')
		OFF	INPUT OFF STATE (LOGIC '0')

Hardware Reference Manual Update List

No.	Version	Date	Changes in
1	1.00	2016.03.02	First Edition
2	1.01	2017.10.24	RJ-45 Connector Update

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ETS Reference Manual

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