**COMIZOA**

## 32CHANNEL DIGITAL NPN TYPE INPUT MODULE

# ETS-DI32N-T (v1.00)

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## 개요
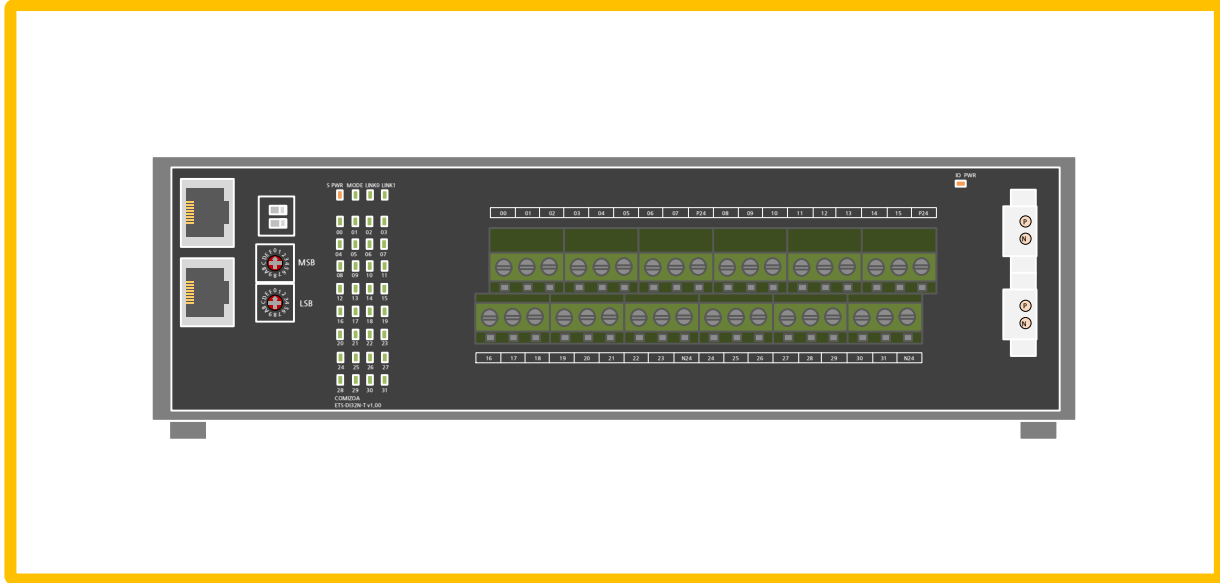


ETS - DI32N - T (Digital NPN Input 32ch)

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

각 채널의 내부 제어신호와 외부 입출력 신호는 포토커플러를 사용하여 절연됩니다.

본 매뉴얼은 ETS-DI32N-T의 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
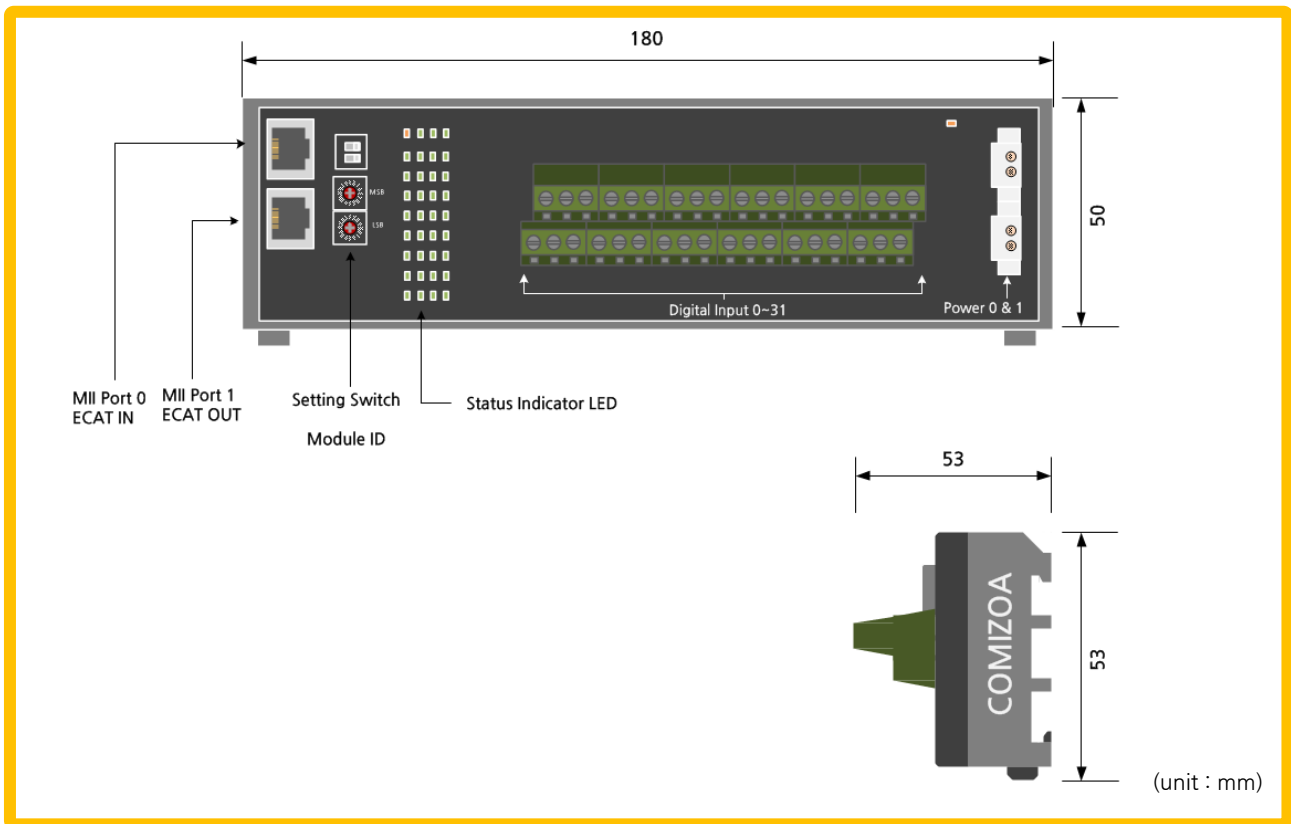- ◉ Digital Input 32(NPN)
- ◉ Independent System Power

## Specification

| Contents | Details |
|---|---|
| Dimension | 180 * 53 * 53 (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%<br>I/O Power : 180mA @ DC 24V ± 5% |

Environmental Specification

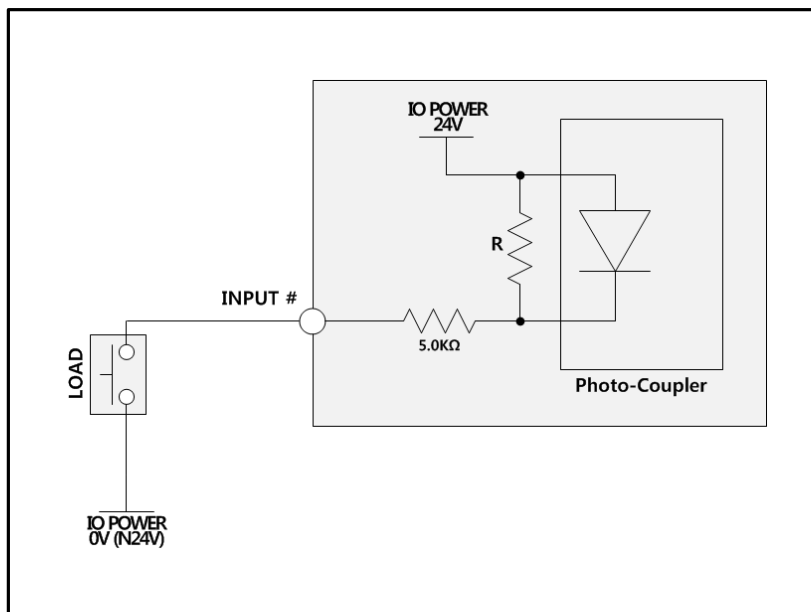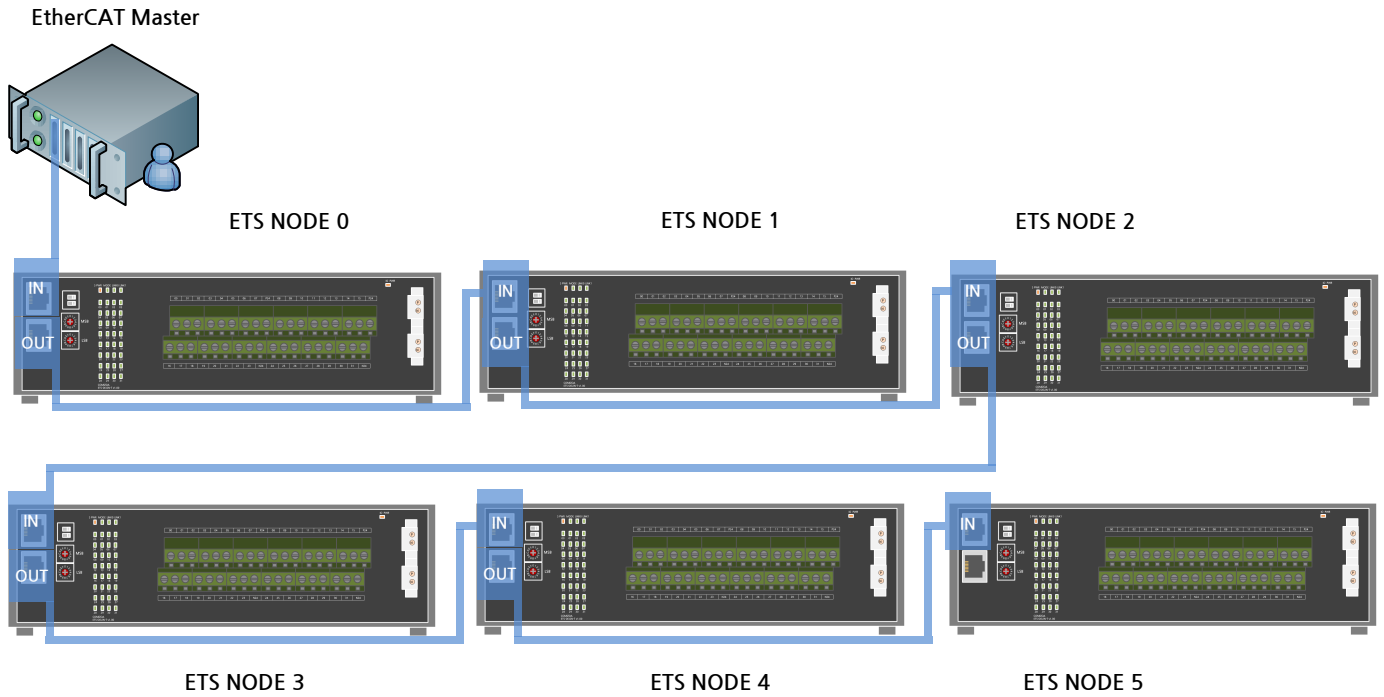| Contents | Details |
|---|---|
| Number of Inputs | 32 Input |
| Input type | Current Sinking type ( NPN ) |
| Isolation | Photo-coupler ( $V_{iso}$ = 3,000$V_{rms}$ ) |
| OFF State Voltage (logic ' 1') | Min. 11V DC ~ Max. 28.8 V DC (EN 61131-2, type 1/3) |
| On State Voltage (logic ' 0') | Min. 0V 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 : 36P Screw Type Terminal / Power : USL-3FBS-2P |

Digital Input Specification



Dimension

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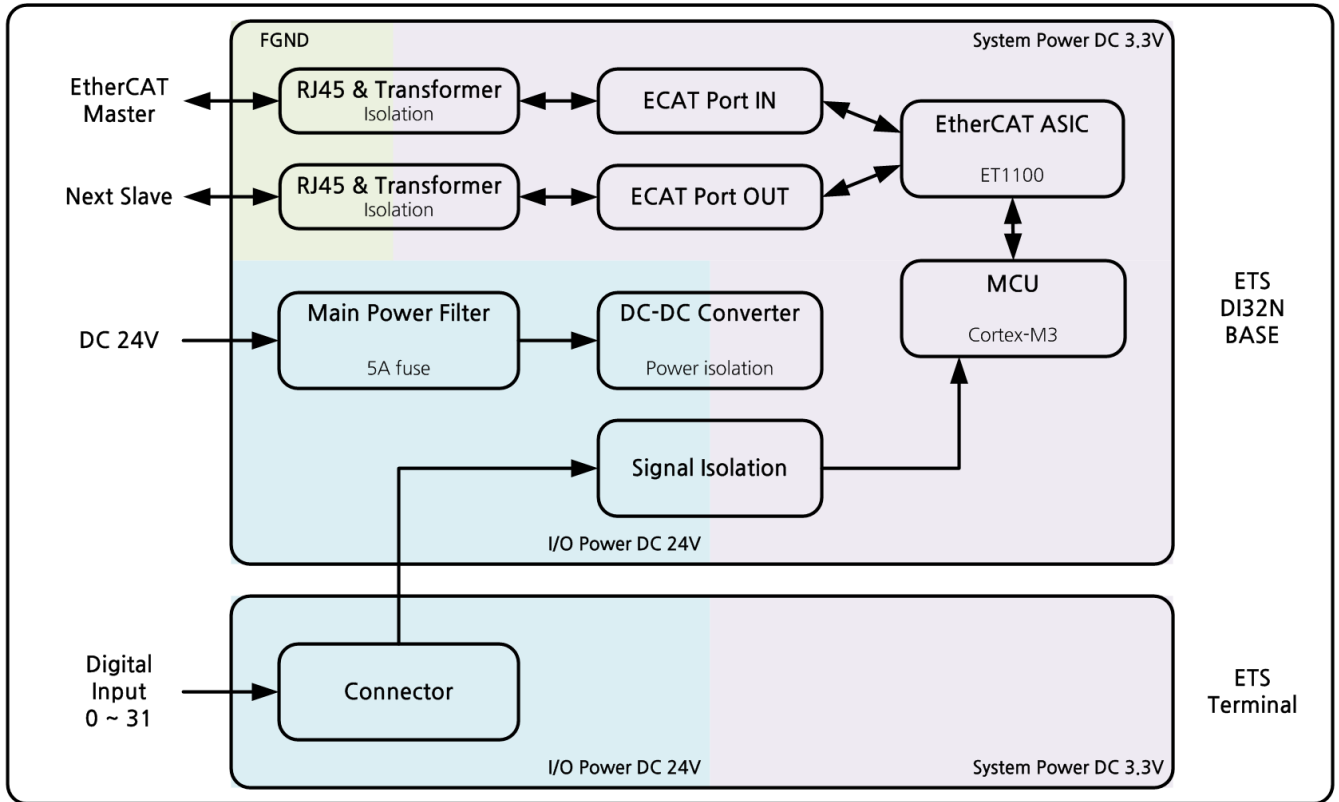
## Block Diagram



ETS-DI32N-T 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 / LSB | NODE ID setting | I.P = MSB *16 + LSB |
| | NODE ID range | 1 ~ 256 |

## Connector

◾ RJ45 Connector

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

IN

OUT

◾ Contact Number



DI 0  1  2  3  4  5  6  7  P24V  8  9  10  11  12  13  14  15  P24V  PWR0

DI 16  17  18  19  20  21  22  23  N24V  24  25  26  27  28  29  30  31  N24V  PWR1

◾ PIN MAP

| PWR 0, 1 | | |
|---|---|---|
| P | P | PWR DC P24V |
| N | N | PWR DC N24V |
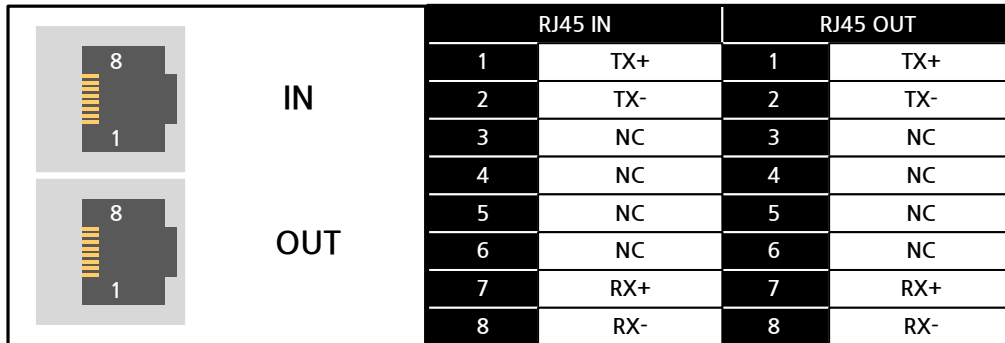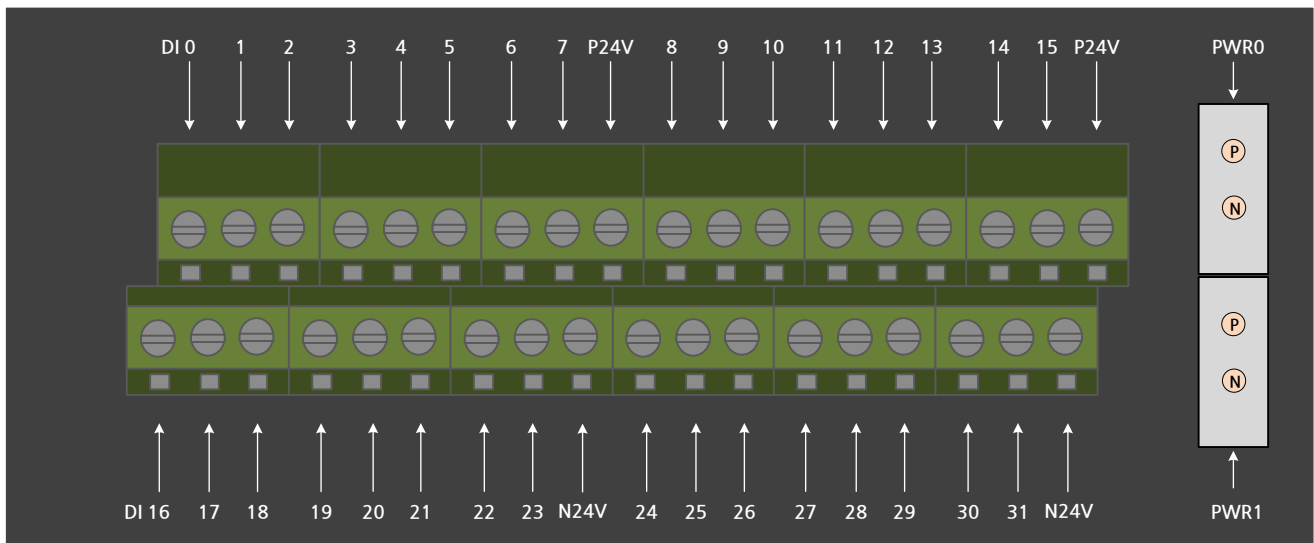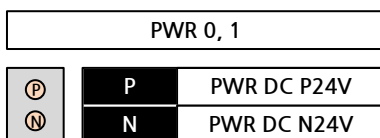
## Status LED
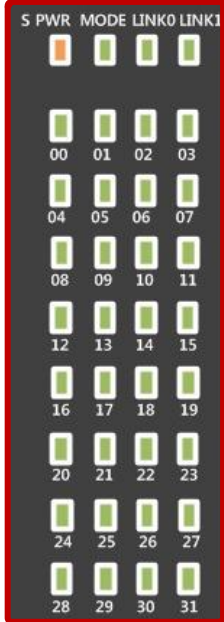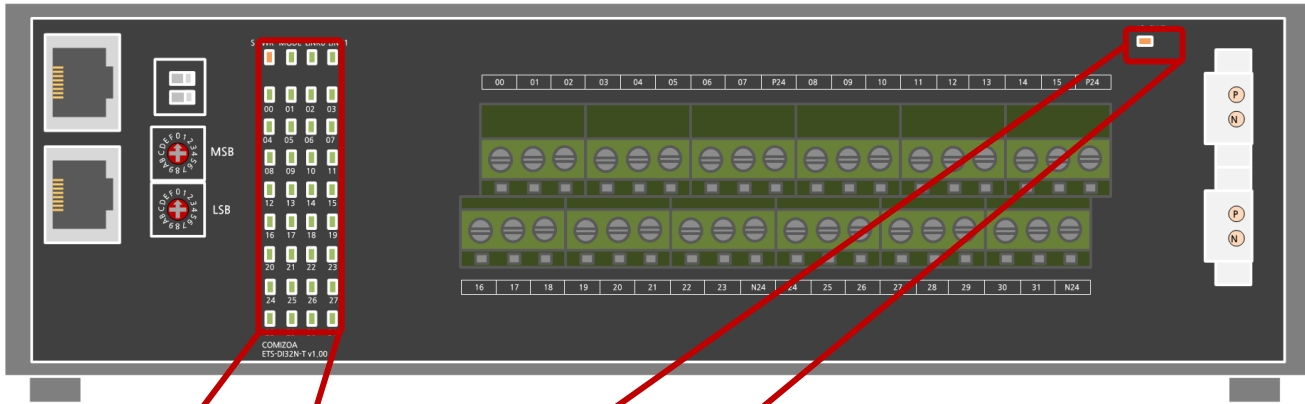


| IO PWR | I/O POWER LED | ON | DIGITAL I/O POWER(24V DC) ON |
|---|---|---|---|
| | | OFF | DIGITAL I/O POWER(24V DC) OFF |
| S PWR | SYSTEM POWER LED | ON | SYSTEM POWER(3.3V DC) ON |
| | | OFF | SYSTEM POWER(3.3V DC) OFF |
| MODE | EtherCAT AL STATE LED | OFF | INIT |
| | | Blinking(slow) | PRE-OP |
| | | 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 | 2016.03.08 | First Edition |

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