



**ET-2251**  
**PET-2251**



**ET-2251-32**  
**PET-2251-32**

Ethernet I/O Module with 16/32-ch DI

## Features

- Web Server for Configuration
- Support Modbus TCP/UDP, MQTT, and SNMP V2c Protocols
- 2-port Ethernet Switch (LAN Bypass) for Daisy-chain Wiring
- Supports Dual-watchdog
- I/O Pair Connection (Push and Pull)
- Built-in I/O
  - (P)ET-2251: 16-ch DI (Wet/Dry)
  - (P)ET-2251-32: 32-ch DI (Wet/Dry)
- LED Display to Indicate the I/O Status



## Introduction

(P)ET-2251/(P)ET-2251-32 is a 16 or 32-channel digital input (Wet/Dry Contact) module and each channel can function as a 32-bit counter. The module includes a built-in 2-port Ethernet switch, facilitating a daisy-chain topology. This feature offers flexibility in device configuration, simplifies installation, and reduces infrastructure costs. Additionally, the module provides EMS (EFT/ESD/Surge) protection and 3000 VDC I/O isolation to enhance noise protection capabilities in industrial environments.

## System Specifications

| Model                       | ET-2251                                                                                                                                                | ET-2251-32    | PET-2251                | PET-2251-32          |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------|----------------------|
| Software                    |                                                                                                                                                        |               |                         |                      |
| Built-in Web Server         | Yes                                                                                                                                                    |               |                         |                      |
| CPU Module                  |                                                                                                                                                        |               |                         |                      |
| CPU                         | 32-bit ARM                                                                                                                                             |               |                         |                      |
| Watchdog Timer              | Module, Communication (Programmable)                                                                                                                   |               |                         |                      |
| Isolation                   |                                                                                                                                                        |               |                         |                      |
| 2-way Isolation             | Ethernet: 1500 VDC, I/O: 3000 VDC                                                                                                                      |               | I/O: 3000 VDC           |                      |
| EMS Protection              |                                                                                                                                                        |               |                         |                      |
| EFT (IEC 61000-4-4)         | ±4 kV for Power Line                                                                                                                                   |               |                         |                      |
| ESD (IEC 61000-4-2)         | (P)ET-2251: ±8 kV Contact for Each Terminal, ±16 kV Air for Random Point<br>(P)ET-2251-32: ±4 kV Contact for Each Terminal, ±8 kV Air for Random Point |               |                         |                      |
| Surge (IEC 61000-4-5)       | ±2 kV for Power Line                                                                                                                                   |               |                         |                      |
| LED Indicators              |                                                                                                                                                        |               |                         |                      |
| Status                      | Run, Ethernet, I/O                                                                                                                                     |               | Run, Ethernet, I/O, PoE |                      |
| Ethernet                    |                                                                                                                                                        |               |                         |                      |
| Ports                       | 2 x RJ-45, 10/100 Base-Tx, Switch Ports                                                                                                                |               |                         |                      |
| PoE                         | -                                                                                                                                                      |               | Yes                     |                      |
| LAN bypass                  | Yes                                                                                                                                                    |               |                         |                      |
| Access Control              | Password and IP Filter                                                                                                                                 |               |                         |                      |
| Protocol                    | Modbus TCP, Modbus UDP, MQTT, SNMP V2c                                                                                                                 |               |                         |                      |
| Power                       |                                                                                                                                                        |               |                         |                      |
| Reverse Polarity Protection | Yes                                                                                                                                                    |               |                         |                      |
| Consumption                 | 3.0 W (max.)                                                                                                                                           | 3.8 W (max.)  | 3.6 W (max.)            | 3.9 W (max.)         |
| Powered from PoE            | -                                                                                                                                                      |               | IEEE 802.3af, Class1    | IEEE 802.3af, Class2 |
| Powered from Terminal Block | +10 ~ +30 VDC                                                                                                                                          | +10 ~ +48 VDC |                         |                      |
| Mechanical                  |                                                                                                                                                        |               |                         |                      |
| Casing                      | Plastic                                                                                                                                                |               |                         |                      |
| Dimensions (mm)             | (P)ET-2251: 33 x 126 x 108 (W x L x H), (P)ET-2251-32: 31 x 157 x 129 (W x L x H)                                                                      |               |                         |                      |
| Installation                | DIN-Rail Mounting                                                                                                                                      |               |                         |                      |
| Environment                 |                                                                                                                                                        |               |                         |                      |
| Operating Temperature       | -25 ~ +75 °C                                                                                                                                           |               |                         |                      |
| Storage Temperature         | -40 ~ +80 °C                                                                                                                                           |               |                         |                      |
| Humidity                    | 10 ~ 90% RH, Non-condensing                                                                                                                            |               |                         |                      |

## I/O Specifications

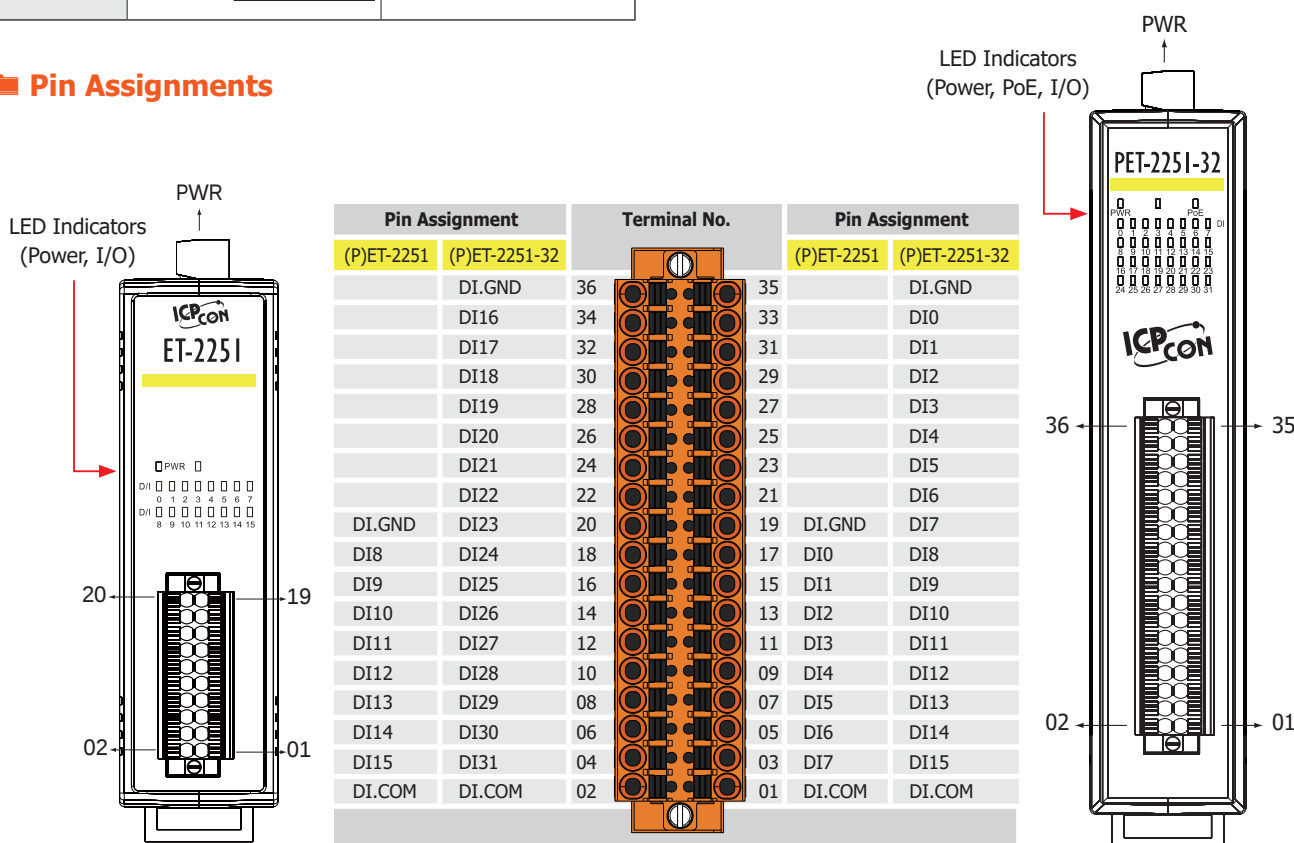
| Model                        | (P)ET-2251                             | (P)ET-2251-32 |
|------------------------------|----------------------------------------|---------------|
| <b>Digital Input/Counter</b> |                                        |               |
| Channels                     | 16                                     | 32            |
| Type                         | Dry Contact<br>Wet Contact             |               |
| Sink/Source (NPN/PNP)        | Dry: Source<br>Wet: Sink/Source        |               |
| ON Voltage Level             | Dry: Close to GND<br>Wet: +5 ~ +50 VDC |               |
| OFF Voltage Level            | Dry: Open<br>Wet: +1 VDC (max.)        |               |
| Max. Counts                  | 4,294,967,295 (32-bit)                 |               |
| Frequency                    | 3 kHz                                  | 2.5 kHz       |
| Input Impedance              | 7.5 kΩ                                 |               |
| Overvoltage Protection       | + 70 VDC                               |               |
| Low Pass Filter              | 1 ~ 6500 ms<br>(0.08 Hz ~ 500 Hz)      |               |

## Wire Connections

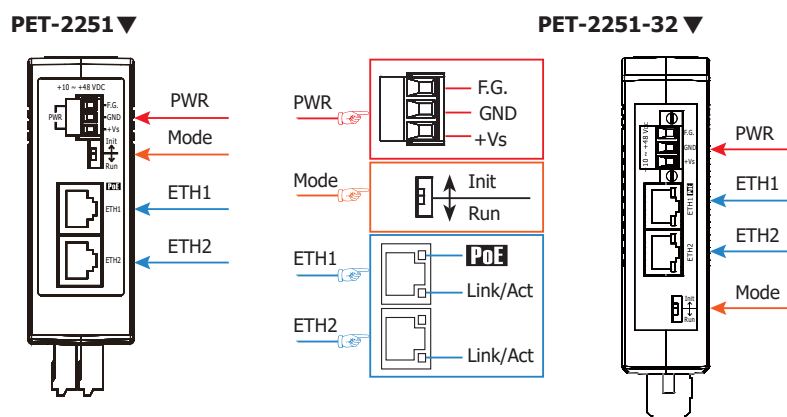
| Digital Input /Counter | Readback as 1 | Readback as 0  |
|------------------------|---------------|----------------|
| Wet Contact (Sink)     | +5 ~ +50 VDC  | OPEN or <1 VDC |
|                        |               |                |
| Wet Contact (Source)   | +5 ~ +50 VDC  | OPEN or <1 VDC |
|                        |               |                |

| Digital Input /Counter | Readback as 1 | Readback as 0 |
|------------------------|---------------|---------------|
| Dry Contact            | Close to GND  | Open          |
|                        |               |               |

## Pin Assignments

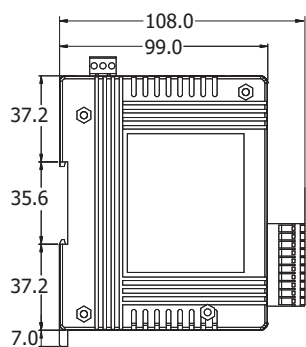


## Appearance

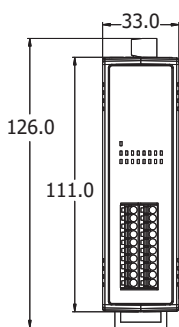


## Dimensions (Units: mm)

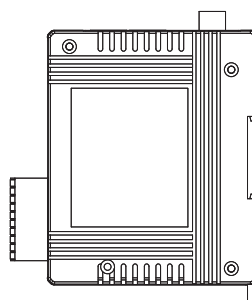
(P)ET-2251



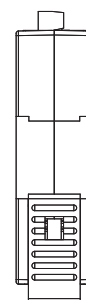
Left Side View



Front View

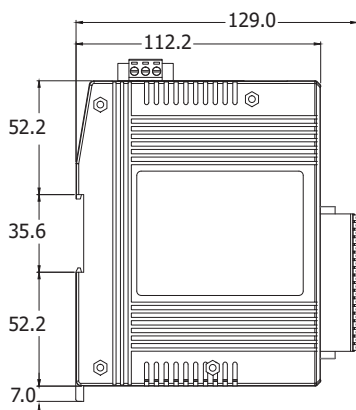


Right Side View

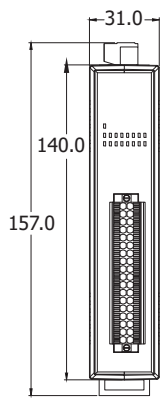


Rear View

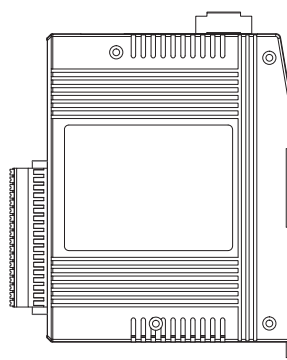
(P)ET-2251-32



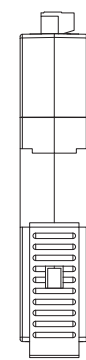
Left Side View



Front View



Right Side View



Rear View

## Ordering Information

|                       |                                                                  |
|-----------------------|------------------------------------------------------------------|
| <b>ET-2251 CR</b>     | Ethernet I/O Module with 2-port Ethernet Switch, 16-ch DI (RoHS) |
| <b>PET-2251 CR</b>    | PoE I/O Module with 2-port Ethernet Switch, 16-ch DI (RoHS)      |
| <b>ET-2251-32 CR</b>  | Ethernet I/O Module with 2-port Ethernet Switch, 32-ch DI (RoHS) |
| <b>PET-2251-32 CR</b> | PoE I/O Module with 2-port Ethernet Switch, 32-ch DI (RoHS)      |