



**ET-2224**  
**PET-2224**

**ET-2228**  
**PET-2228**

(PoE) Ethernet I/O Module with 4/8-ch Analog Outputs

## Features

- Built-in Web Server
- Support Modbus TCP/UDP, MQTT, and SNMP V2c Protocols
- 2-port Ethernet Switch (LAN Bypass) for Daisy-Chain Wiring
- Dual Watchdog
- I/O Pair Connection (Push and Pull)
- Built-in I/O
  - (P)ET-2224: 4-channel AO
  - (P)ET-2228: 8-channel AO



## Introduction

The (P)ET-2224/(P)ET-2228 provides 4/8 channels analog output. It provides a variety of programmable analog output options (0 ~ 5 V, +/-5 V, 0 ~ 10 V, +/-10 V, 4 ~ 20 mA or 0 ~ 20 mA). With 2 Ethernet ports, the (P)ET-2224/(P)ET-2228 allows daisy chain connection which permits the flexibility in locating devices, eases installation and lowers infrastructure costs. It features 4 kV ESD protection, 4 kV EFT protection, 2 kV surge, and 3000 VDC I/O isolation are also provided to enhance noise protection capabilities in industrial environments. The power-on value and safe value of AO are configurable.

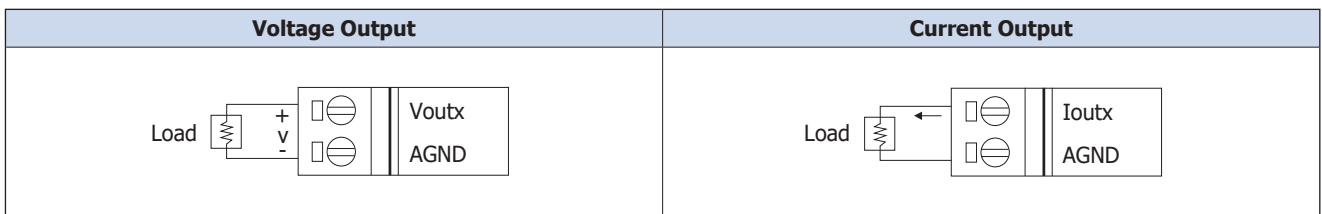
## System Specifications

| Model                       | ET-2224   | ET-2228      | PET-2224             | PET-2228             |
|-----------------------------|---|--------------|----------------------|----------------------|
| <b>Software</b>             |   |              |                      |                      |
| Built-in Web Server         | Yes   |              |                      |                      |
| <b>CPU Module</b>           |   |              |                      |                      |
| CPU                         | 32-bit ARM  |              |                      |                      |
| Watchdog Timer              | Module, Communication (Programmable)                          |              |                      |                      |
| <b>Isolation</b>            |   |              |                      |                      |
| 2-way Isolation             | Ethernet: 1500 VDC, I/O: 3000 VDC                             |              | I/O: 3000 VDC        |                      |
| <b>EMS Protection</b>       |   |              |                      |                      |
| EFT (IEC 61000-4-4)         | ±4 kV for Power Line  |              |                      |                      |
| ESD (IEC 61000-4-2)         | ±4 kV Contact for Each Terminal<br>±8 kV Air for Random Point |              |                      |                      |
| Surge (IEC 61000-4-5)       | ±2 kV for Power Line  |              |                      |                      |
| <b>LED Indicators</b>       |   |              |                      |                      |
| Status                      | Run, Ethernet   |              | Run, Ethernet, PoE   |                      |
| <b>Ethernet</b>             |   |              |                      |                      |
| Ports                       | 2 x RJ-45, 10/100 Base-Tx, Switch Ports                       |              |                      |                      |
| PoE                         | -   |              | Yes                  |                      |
| LAN bypass                  | Yes   |              |                      |                      |
| Security                    | Password and IP Filter  |              |                      |                      |
| Protocol                    | Modbus TCP, Modbus UDP  |              |                      |                      |
| <b>Power</b>                |   |              |                      |                      |
| Reverse Polarity Protection | Yes   |              |                      |                      |
| Consumption                 | 5.0 W (max.)  | 6.2 W (max.) | 5.2 W (max.)         | 7.4 W (max.)         |
| Powered from PoE            | -   |              | IEEE 802.3af, Class2 | IEEE 802.3af, Class3 |
| Powered from Terminal Block | +10 to +48 VDC  |              |                      |                      |
| <b>Mechanical</b>           |   |              |                      |                      |
| Casing                      | Metal   |              |                      |                      |
| Dimensions (mm)             | 33 x 126 x 117 (W x L x H)                                    |              |                      |                      |
| Installation                | DIN-Rail mounting / Wall mounting (Optional ASO-0015)         |              |                      |                      |
| <b>Environment</b>          |   |              |                      |                      |
| Operating Temperature       | -25 to +75°C  |              |                      |                      |
| Storage Temperature         | -40 to +80°C  |              |                      |                      |
| Humidity                    | 10 to 90% RH, Non-condensing                                  |              |                      |                      |

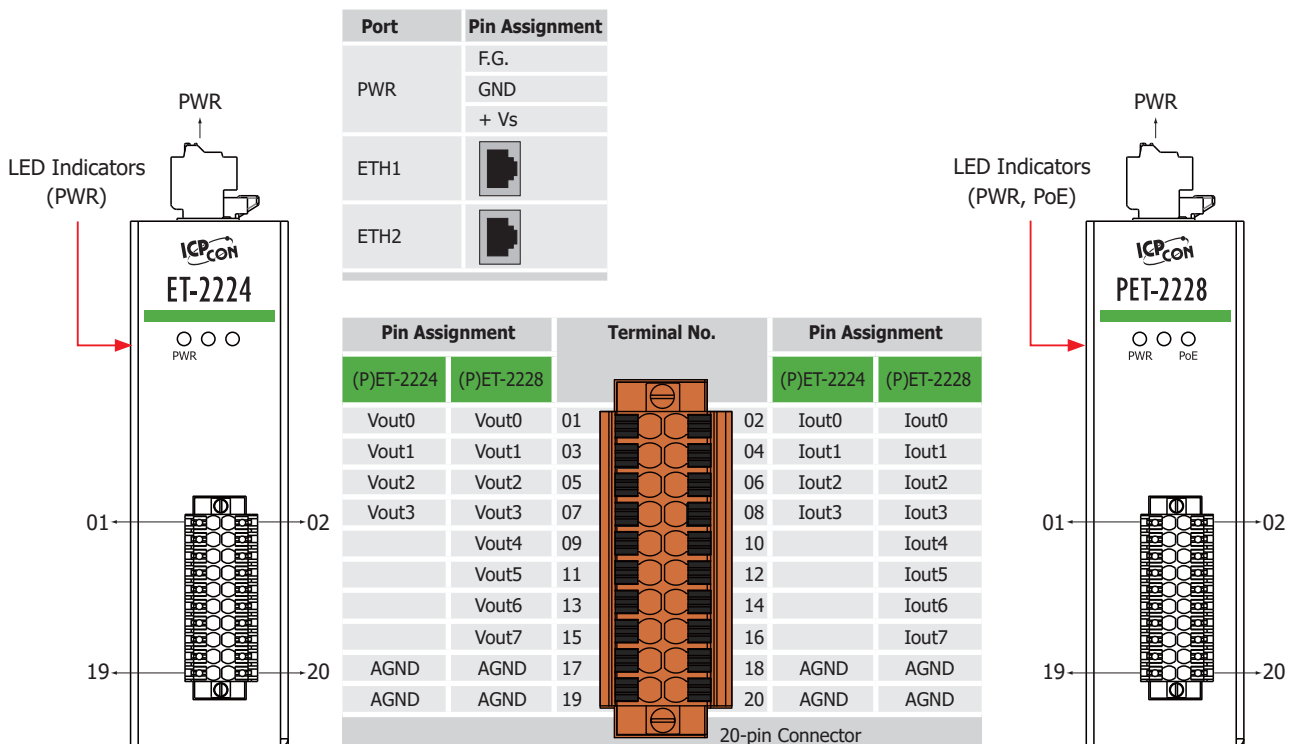
## I/O Specifications

| Model                            |         | ET-2224                                    | PET-2224 | ET-2228 | PET-2228 |
|----------------------------------|---------|--|----------|---------|----------|
| <b>Analog Output</b>             |         |  |          |         |          |
| Channels                         |         | 4  |          | 8       |          |
| Type                             | Voltage | 0 to +5 VDC, ±5 VDC, 0 to +10 VDC, ±10 VDC |          |         |          |
|                                  | Current | 0 to 20 mA, 4 to 20 mA                     |          |         |          |
| Resolution                       |         | 12-bit                                     |          |         |          |
| Accuracy                         |         | ±0.1% of FSR                               |          |         |          |
| Short Circuit Protection         |         | Yes  |          |         |          |
| DA Output Response Time          |         | 1 ms per channel                           |          |         |          |
| Programmable Output Slope        | Voltage | 0.0625 to 512 V/Second                     |          |         |          |
|                                  | Current | 0.125 to 1024 mA/Second                    |          |         |          |
| Open Wire Detection              |         | For 4 to 20 mA only                        |          |         |          |
| Voltage Output Capability        |         | 10 V @ 10 mA                               |          |         |          |
| Current Load Resistance          |         | 500 Ω                                      |          |         |          |
| Individual Channel Configuration |         | Yes  |          |         |          |
| Power-on Value                   |         | Programmable                               |          |         |          |
| Safe Value                       |         | Programmable                               |          |         |          |

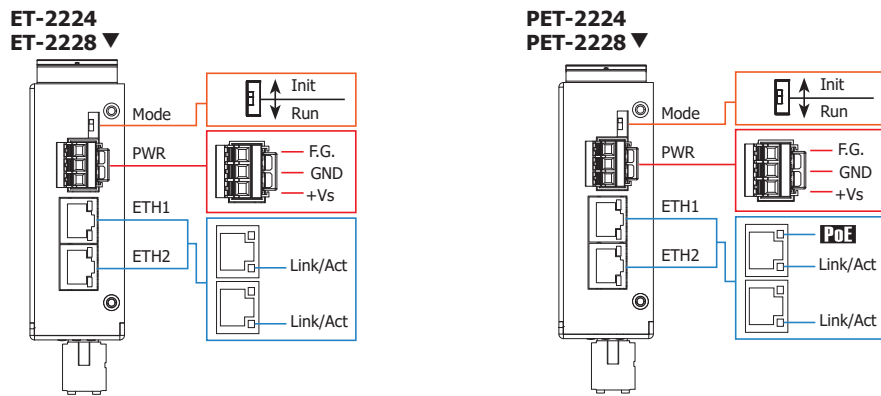
## Wire Connections



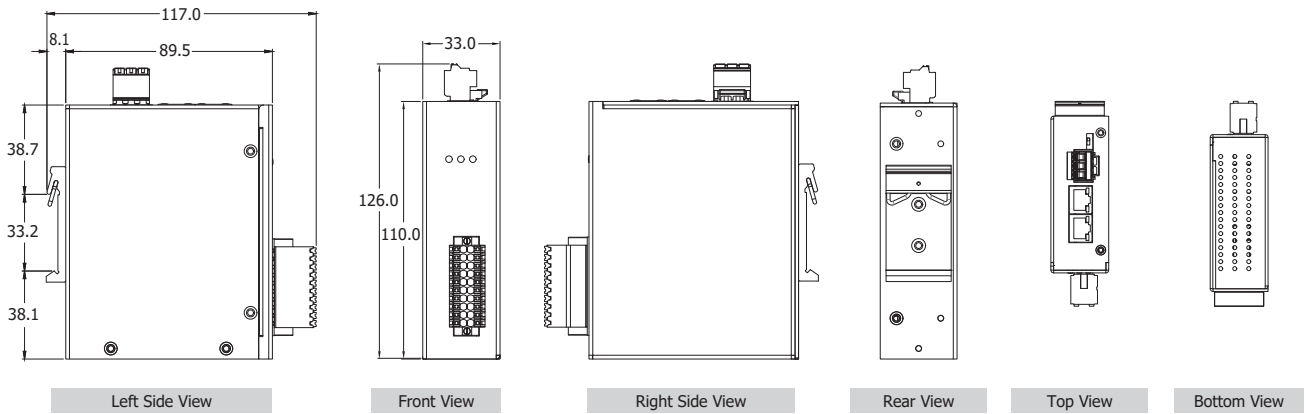
## Pin Assignments



## Appearance



## Dimensions (Units: mm)

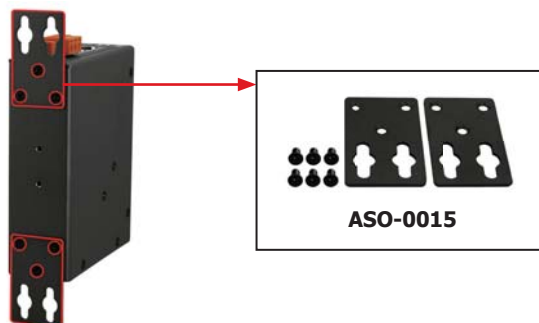


## Ordering Information

|                    |   |
|--------------------|---|
| <b>ET-2224 CR</b>  | Ethernet I/O Module with 2-port Ethernet Switch, 4-ch Analog Outputs (RoHS)     |
| <b>PET-2224 CR</b> | PoE Ethernet I/O Module with 2-port Ethernet Switch, 4-ch Analog Outputs (RoHS) |
| <b>ET-2228 CR</b>  | Ethernet I/O Module with 2-port Ethernet Switch, 8-ch Analog Outputs (RoHS)     |
| <b>PET-2228 CR</b> | PoE Ethernet I/O Module with 2-port Ethernet Switch, 8-ch Analog Outputs (RoHS) |

## Accessories

|                    |                                |
|--------------------|--------------------------------|
| <b>ASO-0015 CR</b> | Wall Mount Kit (W:28mm) (RoHS) |
|--------------------|--------------------------------|



(P)ET-2000+ASO-0015