



## ET-7204

## PET-7204

Ethernet I/O Module with 4-channel AI, 4-channel AO, 4-channel DI

### Features

- Built-in Web Server
- Web HMI
- Support for both Modbus TCP and Modbus UDP Protocols
- Communication Security
- 2-port Ethernet Switch for Daisy-Chain Topology
- Dual Watchdog
- Wide Operating Temperature Range: -25 to +75°C
- I/O Pair Connection
- Built-in I/O
  - AI: 4 Channels with 240 Vrms Overvoltage Protection
  - AO: 4 Channels
  - DI/Counter: 4 Channels



### Introduction

The ET-7204/PET-7204 is a multi-function module with 4-channel analog inputs, 4-channel analog outputs, 4-channel digital inputs. It provides various programmable analog inputs (+/-500 mV, +/-1 V, +/-5 V, +/-10 V, +/-20 mA, 0 ~ 20 mA and 4 ~ 20 mA), and analog outputs (+/-5 V, +/-10 V, 0 ~ 20 mA and 4 ~ 20 mA). Each analog input is allowed to configure a proper range with 240 Vrms high voltage protection. Each analog input/output can be programmed to accept current or voltage as input/output depending upon the position of corresponding jumper.

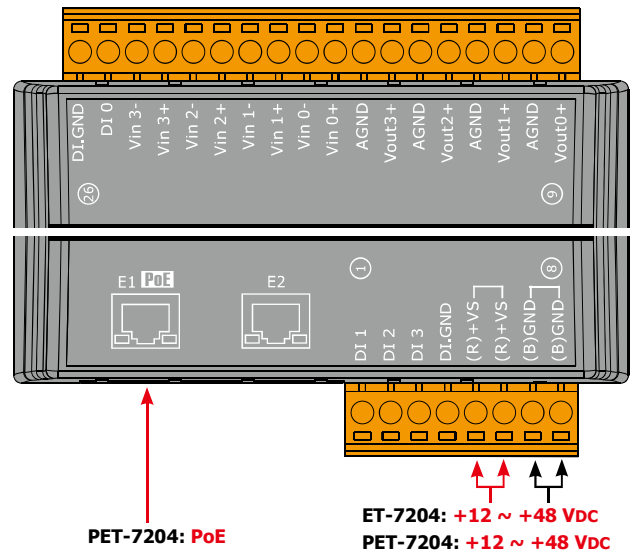
### System Specifications

| Model                       | ET-7204  | PET-7204                  |
|-----------------------------|--|---------------------------|
| <b>Software</b>             |  |                           |
| Built-in Web Server         |  | Yes                       |
| Web HMI                     |  | Yes                       |
| I/O Pair Connection         |  | Yes                       |
| <b>Communication</b>        |  |                           |
| Ethernet Port               | 2 x RJ-45, 10/100 Base-TX, Switch Ports                        |                           |
| PoE                         | -  | Yes                       |
| Protocol                    | Modbus TCP, Modbus UDP   |                           |
| Security                    | ID, Password and IP Filter                                     |                           |
| Dual Watchdog               | Yes, Module (0.8 seconds), Communication (Programmable)        |                           |
| <b>LED Indicators</b>       |  |                           |
| for System Running          |  | Yes                       |
| for Ethernet Link/Act       |  | Yes                       |
| for DI/DO status            |  | Yes                       |
| for PoE Power               | -  | Yes                       |
| <b>2-Way Isolation</b>      |  |                           |
| Ethernet                    | 1500 Vdc   | -                         |
| I/O                         | 2500 Vdc   |                           |
| <b>EMS Protection</b>       |  |                           |
| ESD (IEC 61000-4-2)         | ±4 kV Contact for Each Terminal and ±8 kV Air for Random Point |                           |
| EFT (IEC 61000-4-4)         | ±2 kV for Power Line   |                           |
| Surge (IEC 61000-4-5)       | ±2 kV for Power Line   |                           |
| <b>Power</b>                |  |                           |
| Reverse Polarity Protection |  | Yes                       |
| Powered from Terminal Block | 12 ~ 48 VDC  |                           |
| Powered from PoE            | -  | Yes, IEEE 802.3af, Class1 |
| Consumption                 | 4.9 W (Max.)   | 5.5 W (Max.)              |
| <b>Mechanical</b>           |  |                           |
| Dimensions (L x W x H)      | 120 mm x 76 mm x 38 mm   |                           |
| Installation                | DIN-Rail or Wall Mounting                                      |                           |
| <b>Environment</b>          |  |                           |
| Operating Temperature       | -25 to +75°C   |                           |
| Storage Temperature         | -30 to +80°C   |                           |
| Humidity                    | 10 to 90% RH, Non-condensing                                   |                           |

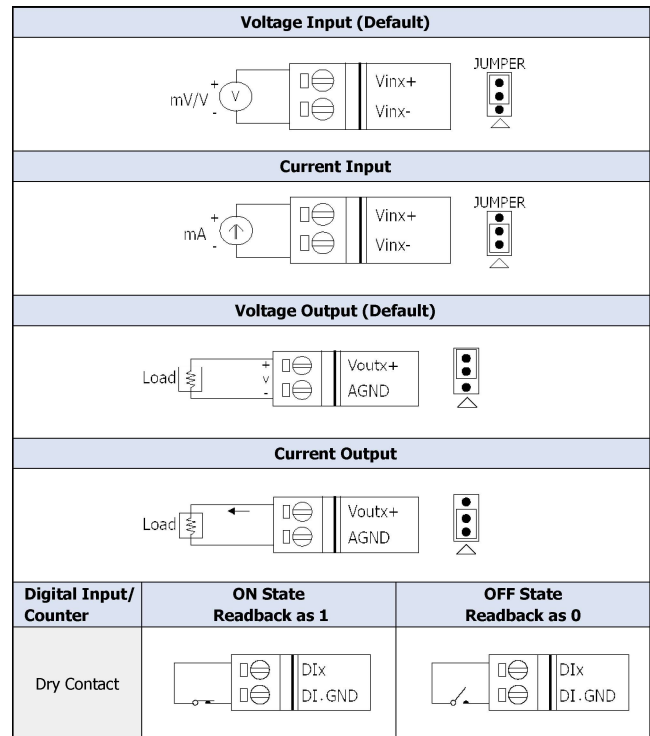
## I/O Specifications

| Analog Input                         |   |                           |
|--------------------------------------|---|---------------------------|
| Channels                             | 4 (Differential)  |                           |
| Type                                 | +/-500 mV, +/-1 V, +/-5 V, +/-10 V<br>+0 mA ~ +20 mA, +/-20 mA, 4 ~ 20 mA<br>(Jumper Selectable)                |                           |
| Individual Channel Configuration     | Yes   |                           |
| Resolution                           | 16-bit  |                           |
| Sampling Rate                        | Normal Mode   | 10 Samples/Second (Total) |
|                                      | Fast Mode   | 50 Samples/Second (Total) |
| Accuracy                             | Normal Mode   | +/-0.1%                   |
|                                      | Fast Mode   | +/-0.5% or better         |
| Zero Drift                           | +/-20 $\mu$ V/ $^{\circ}$ C   |                           |
| Span Drift                           | +/-25 ppm/ $^{\circ}$ C   |                           |
| Overvoltage Protection               | 240 Vrms  |                           |
| Overcurrent Protection               | 50 mA Max. at 110 VDC/VAC Max.  |                           |
| Common Voltage Protection            | $\pm$ 200 VDC   |                           |
| Overcurrent Protection               | Yes, 50 mA at 110 VDC   |                           |
| Virtual Channel to Channel Isolation | Yes, 400 VDC  |                           |
| Open Wire Detection for 4 ~ 20 mA    | Yes   |                           |
| Input Impedance                      | Voltage   | 2 M $\Omega$              |
|                                      | Current   | 125 $\Omega$              |
| Common Mode Rejection                | 86 dB Min.  |                           |
| Normal Mode Rejection                | 100 dB  |                           |
| Analog Output                        |   |                           |
| Channels                             | 4   |                           |
| Type                                 | +0 VDC ~ +5 VDC, +/-5 VDC, +0 VDC ~ +10 VDC,<br>+/-10 VDC,+0 mA ~ +20 mA, +4 mA ~ +20 mA<br>(Jumper Selectable) |                           |
| Individual Channel Configuration     | Yes   |                           |
| Resolution                           | 12-bit  |                           |
| Accuracy                             | +/-0.1% of FSR  |                           |
| Voltage Output Capability            | 20 mA @ 10 V  |                           |
| Current Load Resistance              | 400 $\Omega$  |                           |
| Open Wire Detection                  | Yes, for 4 ~ 20 mA only   |                           |
| Power-on Value                       | Yes, Programmable   |                           |
| Safe Value                           | Yes, Programmable   |                           |
| Digital Input/Counter                |   |                           |
| Channels                             | 4   |                           |
| Dry Contact (Source)                 | On Voltage Level  | Close to GND              |
|                                      | Off Voltage Level   | Open                      |
|                                      | Effective Distance for Dry Contact  | 500 M Max.                |
| Wet contact (Sink)                   | On Voltage Level  | +1 VDC Max.               |
|                                      | Off Voltage Level   | +3.5 VDC ~ +30 VDC        |
| Input Impedance                      | -   |                           |
| Counters                             | Max. Count  | 4,294,967,295 (32-bit)    |
|                                      | Max. Input Frequency  | 100 Hz                    |
|                                      | Min. Pulse Width  | 5 ms                      |
| Overvoltage Protection               | 30 VDC  |                           |

## Pin Assignments



## Wire Connections



## Ordering Information

|                    |   |
|--------------------|---|
| <b>ET-7204 CR</b>  | Ethernet I/O Module with 2-port Ethernet Switch, with 4-channel Analog Input, 4-channel Analog Output, 4-channel Digital Input (RoHS)     |
| <b>PET-7204 CR</b> | PoE Ethernet I/O Module with 2-port Ethernet Switch, with 4-channel Analog Input, 4-channel Analog Output, 4-channel Digital Input (RoHS) |