



## ET-7016

## PET-7016

Ethernet I/O Module with 2-ch Strain Gauge Input,  
2-ch DI, 2-ch DO

### Features

- Built-in Web Server
- Web HMI
- Support for both Modbus TCP and Modbus UDP Protocols
- Communication Access Control
- Dual Watchdog
- I/O Pair Connection
- Built-in I/O
  - Strain Gauge Input: 2 Channels
  - DI/Counter: 2 Channels
  - DO: 2 Channels



### Introduction

The ET-7016/PET-7016 is a strain gauge module with 2 analog input channels, 1 excitation voltage output channel, 2 digital input channels and 2 digital output channels module. It provides various programmable analog input inputs (+/-1 mV, +/-50 mV, +/-100 mV, +/-500 mV, +/-1 V, and +/-2.5 V) and supports full-bridge, half-bridge, and quarter-bridge. The range for each analog input is allowed to be configured individually. The excitation voltage output can be in the range of 0 ~ 10 V with a 60 mA driving efficiency. Digital outputs can also be set as alarm outputs. The ET-7016/PET-1016 can also provide long-distance strain gauge measurement that compensates for the loss of voltage resulting from long-distance measurements.

### System Specifications

Model	ET-7016	PET-7016
<b>Software</b>		
Built-in Web Server	Yes	
<b>CPU Module</b>		
Watchdog Timer	Module, Communication (Programmable)	
<b>2-Way Isolation</b>		
Ethernet	1500 VDC	-
I/O	2500 VDC	2500 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 ±8 kV Air for Random Point	
<b>LED Indicators</b>		
Status	Run, Ethernet	Run, Ethernet, PoE
<b>Ethernet</b>		
Ports	1 x RJ-45, 10/100 Base-TX	
PoE	-	Yes
Access Control	ID, Password and IP Filter	
Protocol	Modbus TCP, Modbus UDP	
<b>Power</b>		
Reverse Polarity Protection	Yes	
Consumption	2.9 W (max.)	3.2 W (max.)
Powered from PoE	-	IEEE 802.3af, Class1
Powered from Terminal Block	+10 to +30 VDC	+12 to +48 VDC
<b>Mechanical</b>		
Dimensions (mm)	72 x 123 x 35 (W x L x H)	
Installation	DIN-Rail mounting	
<b>Environment</b>		
Operating Temperature	-25 ~ +75 °C	
Storage Temperature	-30 ~ +80 °C	
Humidity	10 ~ 90% RH, Non-condensing	

### I/O Specifications

Model	ET-7016, PET-7016
<b>Digital Input/Counter</b>	
Channels	2
Type	Wet Contact
Sink/Source (NPN/PNP)	Sink/Source
ON Voltage Level	+3.5 VDC to +50 VDC
OFF Voltage Level	+1 VDC (max.)
Max. Counts	4,294,967,295 (32-bit)
Frequency	100 Hz
Min. Pulse Width	5 ms
Overvoltage Protection	+70 VDC
<b>Digital Output</b>	
Channels	2
Type	Isolated Open Collector
Sink/Source (NPN/PNP)	Sink
Load Voltage	+5 to +50 VDC
Load Current	700 mA/channel
Overvoltage Protection	+60 VDC
Overload Protection	1.4 A
Short-circuit Protection	Yes
Power on Value	Programmable
Safe Value	Programmable
<b>Strain Gauge, Load Cell Input</b>	
Channels	2 (Differential)
Type	Strain Gauge, Voltage, Current
Range	±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5 V, ±20 mA, 10 to 20 mA, 4 to 20 mA
Wiring	Full-Bridge, Half-Bridge, and Quarter-Bridge
Accuracy	±0.05%
Resolution	16-bit
Sampling Rate	10 Hz (total channels)

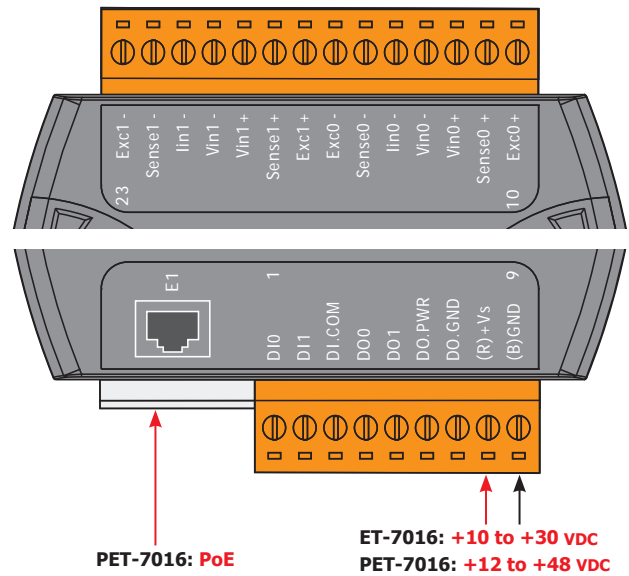
## I/O Specifications

Strain Gauge, Load Cell Input	
Input Impedance	Voltage Input: >400 k $\Omega$ , Current Input: 125 $\Omega$
Individual Channel Configuration	Yes
Overvoltage Protection	+30 VDC
Excitation Voltage Output	
Channels	1
Range	0 to 10 V
Accuracy	$\pm 0.05\%$ of FSR
Max. Output Load Current	60 mA
Drift	$\pm 50$ ppm/ $^{\circ}$ C
Power on Value	Yes

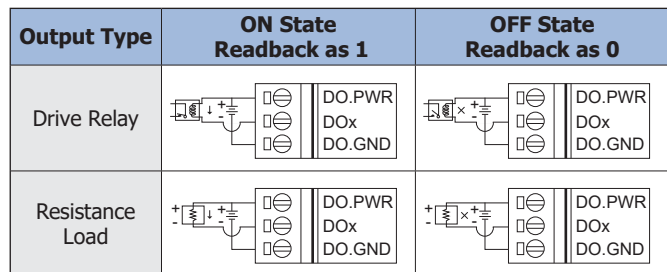
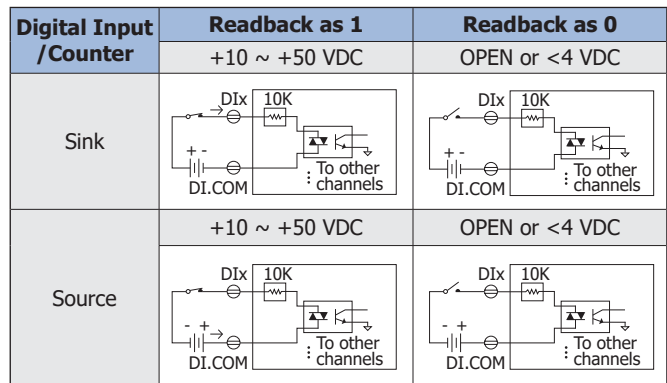
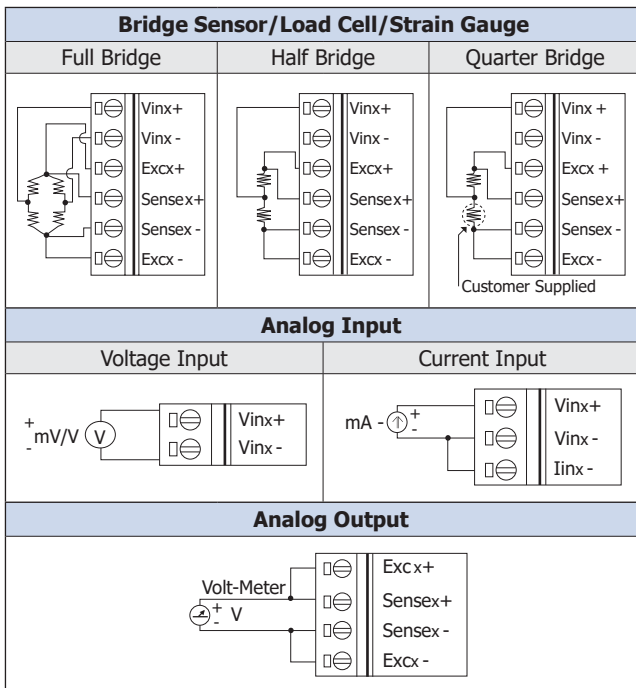
## Excitation Voltage

Strain Gauge	Quarter-Bridge	Half-Bridge	Full-Bridge
120 R	7.0 V	7.0 V	3.5 V
350 R	10 V	10 V	10 V

## Pin Assignments



## Wire Connections



## Ordering Information

<b>ET-7016 CR</b>	Ethernet I/O Module with 2-ch Strain Gauge Input, 2-ch DI, 2-ch DO (RoHS)
<b>PET-7016 CR</b>	PoE I/O Module with 2-ch Strain Gauge Input, 2-ch DI, 2-ch DO (RoHS)