ET-7284   PET-7284

Ethernet I/O Module with 4-/8-channel Counter/Frequency/
Encoder Input and 4-channel DO

Features

- Built-in Web Server
- Web HMI
- Support for both Modbus TCP and Modbus UDP Protocols
- Communication Security
- Dual Watchdog
- Wide Operating Temperature Range: -25 to +75°C
- I/O Pair Connection
- Built-in I/O
  - Counter/Frequency/Encoder: 4/8 Channels
  - Digital Output: 4 Channels

Introduction

The ET-7284/PET-7284 is a 32-bit high-speed Counter/Frequency/Encoder input and 4-channel Digital Output module that offers a variety of input mode options, including "Up Counter", "Frequency Input", "Up/Down Counter", "Direct/Pulse Counter" and "A/B Phase Counter". The mode can be individually configured for all 8 channels, where, for example, some channels can be set to "Up Counter" mode, and other channels can be individually set to "Frequency", "Up/ Down Counter" or "Encoder input" mode. The built-in programmable low pass filter can be used to eliminate noise where the width of the high/low pulse is narrower than the minimum high/low width of the low pass filter.

The ET-7284/PET-7284 module is equipped with FRAM memory to retain the counter values. FRAM is a type of non-volatile memory that can be used to store written data, even after the module has been powered off. This storage feature can be either enabled or disabled, and the data can be retained for up to 10 years.

System Specifications

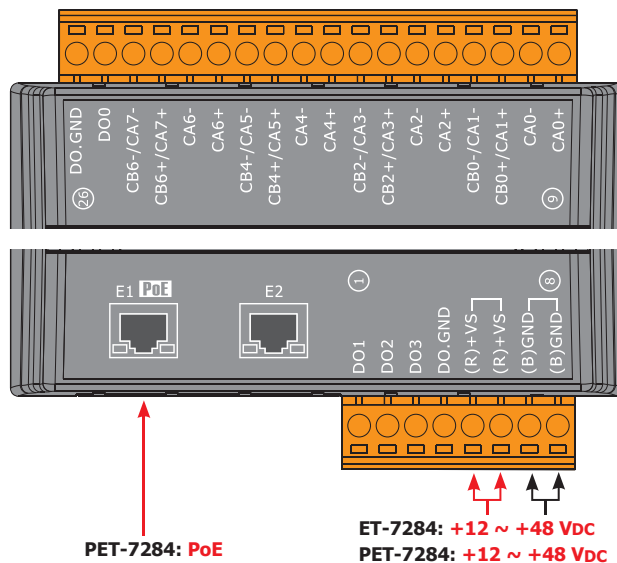| Model	ET-7284	PET-7284
Software		
Built-in Web Server	Yes	
Web HMI	Yes	
I/O Pair Connection	Yes	
Communication		
Ethernet Port	2 x RJ-45, 10/100 Base-TX, Swtich Ports	
PoE	-	Yes
Protocol	Modbus TCP, Modbus UDP	
Security	ID, Password and IP Filter	
Dual Watchdog	Yes, Module (0.8 seconds), Communication (Programmable)	
LED Indicators		
for System Running	Yes	
for Ethernet Link/Act	Yes	
for DI/DO status	Yes	
for PoE Power	-	Yes
2-Way Isolation		
Ethernet	1500 V$_{DC}$	-
I/O	2500 V$_{DC}$	
EMS Protection		
ESD (IEC 61000-4-2)	±4 kV Contact for Each Terminal and ±8 kV Air for Random Point	
EFT (IEC 61000-4-4)	±4 kV for Power Line	
Surge (IEC 61000-4-5)	±2 kV for Power Line	
Power		
Reverse Polarity Protection	Yes	
Powered from Terminal Block	12 ~ 48 V$_{DC}$	
Powered from PoE	-	Yes, IEEE 802.3af, Class1
Consumption	4.2 W	4.4 W
Mechanical		
Dimensions (L x W x H)	120 mm x 76 mm x 38 mm	
Installation	DIN-Rail or Wall Mounting	
Environment		
Operating Temperature	-25 to +75°C	
Storage Temperature	-30 to +80°C	
Humidity	10 to 90% RH, Non-condensing	

■ I/O Specifications

Counter/Frequency/Encoder Input

Counter/Frequency/Encoder Input	4-channel Up/Down Counter (CW/CCW) 4-channel Dir/Pulse Counter (Bi-directional) 4-channel A/B Phase (Quadrant Counting) 8-channel Up Counter 8-channel Frequency
Contact	Wet
Sink/Source (NPN/PNP)	Sink
Types	Counter, Frequency or Encoder
Counter/Encoder bits	32-bit (4,294,967,295)
On Voltage Level	+3.5 VDC ~ +30 VDC
Off Voltage Level	+1 VDC Max.
Programmable Low Pass Filter	1 ~ 32767 µs
Individual Channel Configuration	Yes
Max. Speed	3.5 VDC ~ 10 VDC: 200 kHz 10 VDC ~ 30 VDC: 150 kHz
Frequency Accuracy	1 Hz ~ 200 kHz: ±0.025% of Input Frequency (Note1)
Count Value Retention	Yes

Digital Output

Channels	4
Type	Isolated Open Collector
Sink/Source (NPN/PNP)	Sink
Max. Load Current	650 mA/channel
Load Voltage	+5 VDC ~ +50 VDC
Overvoltage Protection	60 VDC
Overload Protection	1.4 A
Short-circuit Protection	Yes
Power-on Value	Yes, Programmable
Safe Value	Yes, Programmable

Note1:

Frequency Range	Frequency Error (typical)
1 Hz ~ 10 Hz	0.01 Hz
10 Hz ~ 10 KHz	0.5 Hz
10 KHz ~ 100 KHz	15 Hz
100 KHz ~ 200 KHz	30 Hz

■ Pin Assignments

PET-7284: PoE

ET-7284: +12 ~ +48 VDC
PET-7284: +12 ~ +48 VDC

■ Wire Connections

	Counter Type
Up	Up+ — CAx+ Up - — CAx-
Up/Down	Up+ — CAx+ Up - — CAx- Down+ — CBx+ Down - — CBx-
Dir/Pulse	Pulse+ — CAx+ Pulse - — CAx- Dir+ — CBx+ Dir - — CBx-
A/B Phase	A0+ — CAx+ A0 - — CAx- B0+ — CBx+ B0 - — CBx-

	Frequency Type
Frequency	Freq+ — CAx+ Freq - — CAx-

Digital Output	ON State Readback as 1	OFF State Readback as 0
Open Collector (Sink)	LOAD — DOx / DO.GND 5 ~ 50 VDC	LOAD — DOx / DO.GND 5 ~ 50 VDC

■ Ordering Information

ET-7284 CR CR	Ethernet I/O Module with 4-/8-channel Counter/Frequency/Encoder Input and 4-channel Digital Output (RoHS)
PET-7284 CR	PoE Ethernet I/O Module with 4-/8-channel Counter/Frequency/Encoder Input and 4-channel Digital Output (RoHS)