tET-P2A2
tET-P2C2

tPET-P2A2
tPET-P2C2

Tiny Ethernet module with Digital Input/Output

Features

- Built-in Web Server
- Cost-effective Tiny Ethernet I/O Modules
- Support Modbus TCP/UDP and MQTT Protocols
- I/O Pair Connection (Push and Pull)
- Redundant Power Inputs:
  PoE (IEEE 802.3af, Class 1) and DC input
- Supports Dual-watchdog
- Supports Web Configuration and Firmware Update Via Ethernet
- Supports Latched DI, 32-bit DI Counters, and Frequency Measurement
- DO Power-on and Safe Value

Introduction

The **tET/tPET** series is an IP-based Ethernet I/O monitoring and control module. The module can be remotely controlled through a 10/100 M Ethernet network by using Modbus TCP protocol.

The functionality of the tET/tPET series is almost the same as the ET-7000/PET-7000 series. The module can be used to create DI to DO pair-connect through the Ethernet. Once the configuration is completed, the tET/tPET series module can poll the status of the local DI channels and then use the Modbus/TCP protocol to continuously write to a remote DO device in the background.

The tET/tPET series provides a dual watchdog: CPU watchdog and host watchdog. The CPU watchdog automatically resets itself when the built-in firmware runs abnormally. The host watchdog monitors the host controller (PC or PLC), and the output of the module can go to a predefined state (safe value) when the host fails.

It features a powerful 32-bit ARM MCU to handle efficient network trafficking. The **tPET** series offers true IEEE 802.3af-compliant (classification, Class 1) Power over Ethernet (PoE) using a standard category 5 Ethernet cable to receive power from a PoE switch like the NS-205PSE. When there is no PoE switch on site, the tPET series accepts power input from the DC adapter.

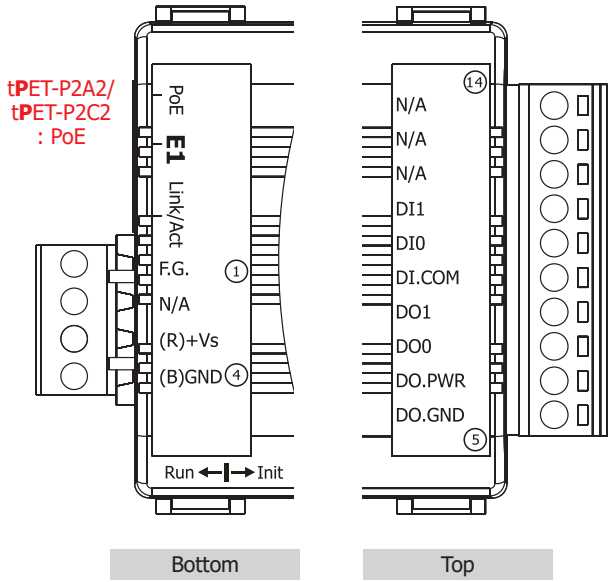
System Specifications

Model	tET-P2A2	tET-P2C2	tPET-P2A2	tPET-P2C2
CPU Module				
CPU	32-bit MCU			
Watchdog Timer	Module, Communication (Programmable)			
EMS Protection				
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			
LED Indicators				
Status	Run, Ethernet		Run, Ethernet, PoE	
Ethernet				
Ports	10/100 Base-TX, 8-Pin RJ-45 x1 Auto-negotiating, Auto-MDI/MDIX, LED indicator)			
Protocol	Modbus TCP, Modbus UDP, and MQTT			
Power				
Consumption	0.9 W		1.0 W	
Powered from PoE	-		IEEE 802.3af, Class 1	
Powered from Terminal Block	+12 to +48 VDC			
Mechanical				
Dimensions (mm)	52 x 95 x 27 (W x L x H)			
Installation	DIN-Rail mounting			
Environment				
Operating Temperature	-25 ~ +75 °C			
Storage Temperature	-30 ~ +80 °C			
Humidity	10 ~ 90% RH, Non-condensing			

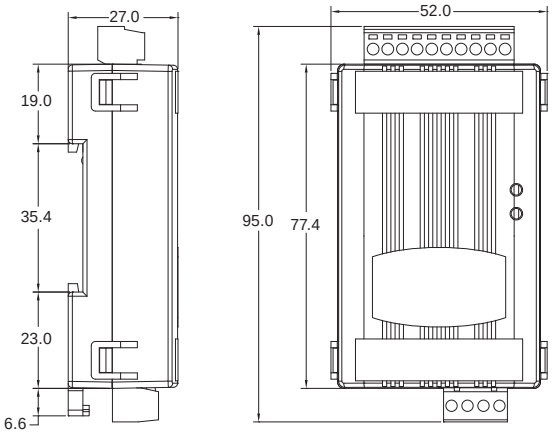
I/O Specifications

Model	t(P)ET-P2A2	t(P)ET-P2C2
Digital Input/Counter		
Channels	2	
Type	Wet Contact	
Sink/Source (NPN/PNP)	Sink/Source	
ON Voltage Level	+10 to +50 VDC	
OFF Voltage Level	+4 VDC (max.)	
Max. Counts	4,294,967,295 (32-bit)	
Frequency	3.5 kHz (without filter)	
Min. Pulse Width	0.15 ms	
Isolation	3750 Vrms	
Input Impedance	10 kΩ	
Overvoltage Protection	+70 VDC	
Digital Output		
Channels	2	
Type	Open Collector	
Sink/Source (NPN/PNP)	Source	Sink
Load Voltage	+10 to +40 VDC	+5 to +30 VDC
Load Current	650 mA/channel	100 mA/channel
Overvoltage Protection	+48 VDC	+60 VDC
Short-circuit Protection	Yes	-
Isolation	3750 Vrms	

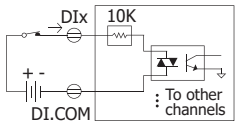
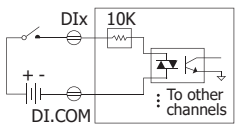
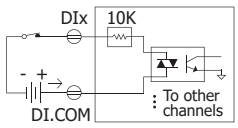
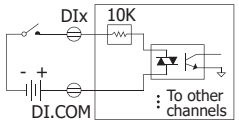
Pin Assignments

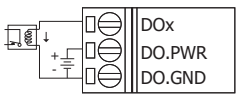
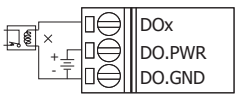
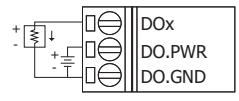
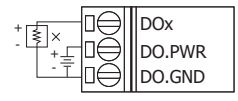


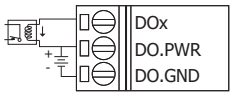
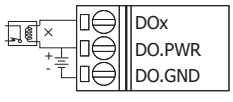
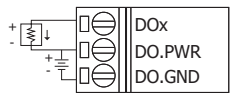
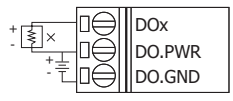
Dimensions (Units: mm)



Wire Connections

Digital Input	Readback as 1	Readback as 0
Sink	+10 ~ +50 VDC	OPEN or <4 VDC
		
Source	+10 ~ +50 VDC	OPEN 或 <4 VDC
		

Digital Output	Readback as 1	Readback as 0
(Source) Drive Relay	Relay ON	Relay OFF
		
(Source) Resistance Load	Relay ON	Relay OFF
		

Digital Output	Readback as 1	Readback as 0
(Sink) Drive Relay	Relay ON	Relay OFF
		
(Sink) Resistance Load	Relay ON	Relay OFF
		

Ordering Information

tET-P2A2 CR	Tiny Ethernet Module with 2-ch DI and 2-ch (Source-type, PNP) DO (RoHS)
tET-P2C2 CR	Tiny Ethernet Module with 2-ch DI and 2-ch (Sink-type, NPN) DO (RoHS)
tPET-P2A2 CR	Tiny PoE Ethernet Module with 2-ch DI and 2-ch (Source-type, PNP) DO (RoHS)
tPET-P2C2 CR	Tiny PoE Ethernet Module with 2-ch DI and 2-ch (Sink-type, NPN) DO (RoHS)