tET-P2A2
tET-P2C2

tPET-P2A2
tPET-P2C2

Tiny Ethernet Module with 2-ch DI, 2-ch DO

Features

- Web Server for Configuration
- Cost-effective Tiny Ethernet I/O Modules
- Support Modbus TCP/UDP and MQTT Protocols
- I/O Pair Connection (Push and Pull)
- Redundant Power Inputs: (tPET series only) PoE (IEEE 802.3af, Class 1) and DC input
- Supports Dual-watchdog
- Supports Firmware Update via Ethernet
- Supports Latched DI, 32-bit DI Counters, and Frequency Measurement
- DO Power-on Value 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 function: a CPU watchdog and a host watchdog. The CPU watchdog automatically resets the system when the built-in firmware runs abnormally. The host watchdog monitors the host controller (PC or PLC), and the module's output can switch to a predefined "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.

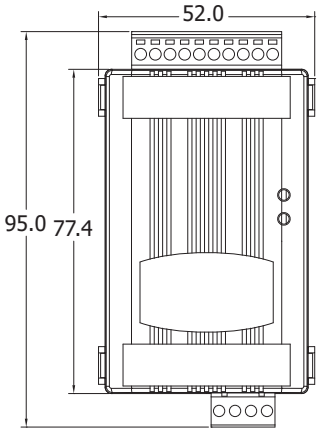
System Specifications

Model	tET-P2A2	tET-P2C2	tPET-P2A2	tPET-P2C2
Software				
Built-in Web Server	Yes			
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	1 x RJ-45, 10/100 Base-TX			
PoE	-		Yes	
Access Control	Password and IP Filter			
Protocol	Modbus TCP, Modbus UDP, MQTT			
Power				
Reverse Polarity Protection	Yes			
Consumption	0.9 W		1.0 W	
Powered from PoE	-		IEEE 802.3af, Class 1	
Powered from Terminal Block	+12 ~ +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			

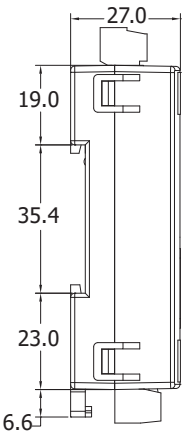
I/O Specifications

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 ~ +50 V_{DC}	
OFF Voltage Level	+4 V_{DC} (max.)	
Max. Counts	4,294,967,295 (32-bit)	
Frequency	3.5 kHz (without filter)	
Min. Pulse Width	0.15 ms	
Isolation	3750 V_{rms}	
Input Impedance	10 kΩ	
Overvoltage Protection	+70 V_{DC}	
Digital Output		
Channels	2	
Type	Open Collector	
Sink/Source (NPN/PNP)	Source	Sink
Load Voltage	+10 ~ +40 V_{DC}	+5 ~ +30 V_{DC}
Load Current	650 mA/channel	100 mA/channel
Overvoltage Protection	+48 V_{DC}	+60 V_{DC}
Short-circuit Protection	Yes	-
Isolation	3750 V_{rms}	

Dimensions (Units: mm)

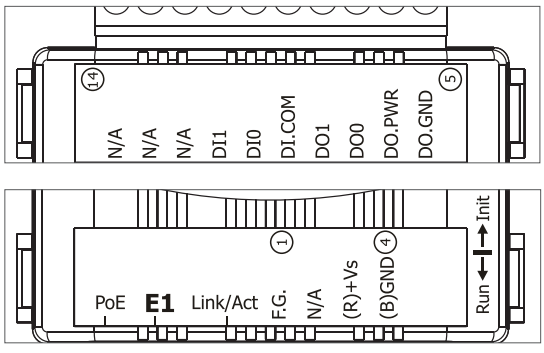


Front View



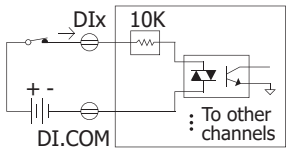
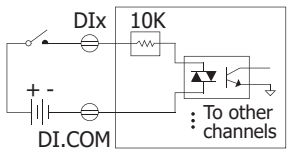
Left View

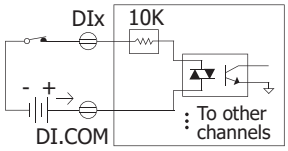
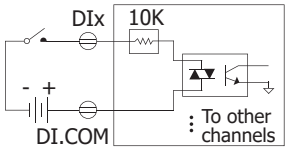
Pin Assignments

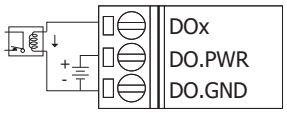
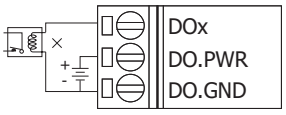
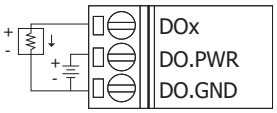
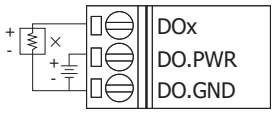


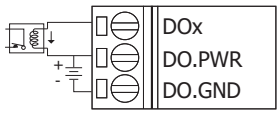
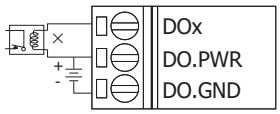
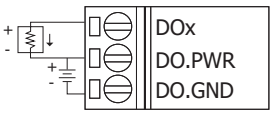
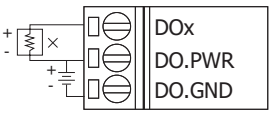
PoE: t**P**ET-P2A2/t**P**ET-P2C2

Wire Connections

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

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

Model	t(P)ET-P2A2	
Digital Output	**Readback as 1**	**Readback as 0**
(Source) Drive Relay	Relay ON	Relay OFF
		
(Source) Resistance Load		

Model	t(P)ET-P2C2	
Digital Output	**Readback as 1**	**Readback as 0**
(Sink) Drive Relay	Relay ON	Relay OFF
		
(Sink) Resistance Load		

Ordering Information

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