



tET-P2R2
tET-PD2R1

tPET-P2R2
tPET-PD2R1

Tiny Ethernet Module with 2-ch DI, 2 or 1-ch Power Relay

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 10/100M 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-P2R2	tET-PD2R1	tPET-P2R2	tPET-PD2R1
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	0.8 W	1.0 W	1.0 W	1.1W
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			

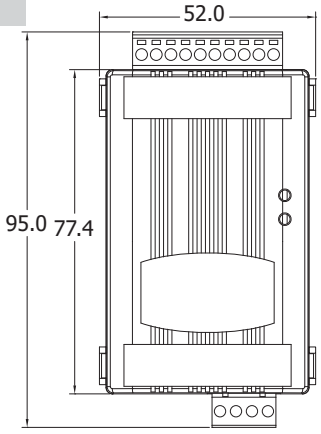
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

I/O Specifications

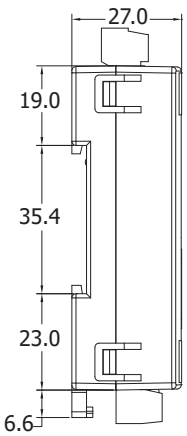
Model	t(P)ET-P2R2	t(P)ET-PD2R1
Digital Input/Counter		
Channels	2	
Type	Wet Contact	Dry Contact
Sink/Source (NPN/PNP)	Sink/Source	Source
ON Voltage Level	+10 ~ +50 VDC	Close to GND
OFF Voltage Level	+4 VDC (max.)	Open
Max. Counts	4,294,967,295 (32-bit)	
Frequency	3.5 kHz (without filter)	
Min. Pulse Width	0.15 ms	
Effective Distance	-	500 m (max.)
Isolation	3750 Vrms	
Input Impedance	10 kΩ	-
Overvoltage Protection	+70 VDC	-
Relay Output		
Channels	2	1
Type	Power Relay, Form A (SPST N.O.)	
Contact Rating	5.0 A/channel at 25°C	
Operate Time	6 ms	
Release Time	3 ms	
Electrical Endurance	5 A 250 VAC 30,000 ops (10 ops/minute) at 75 °C 5 A 30 VDC 70,000 ops (10 ops/minute) at 75 °C 5 A 250 VAC / 30 VDC 6,000 ops 3 A 250 VAC / 30 VDC 100,000 ops	
Mechanical Endurance	20,000,000 ops. At no load (300 ops./minute)	
Isolation	3000 Vrms	

Dimensions (Units: mm)

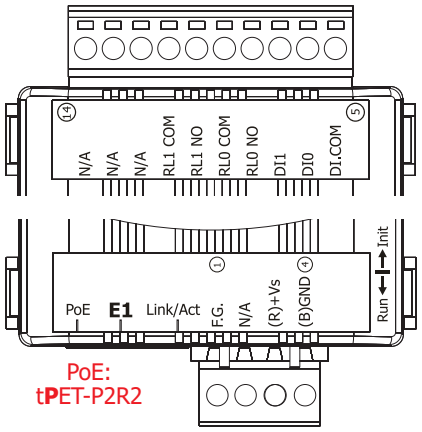
Front View



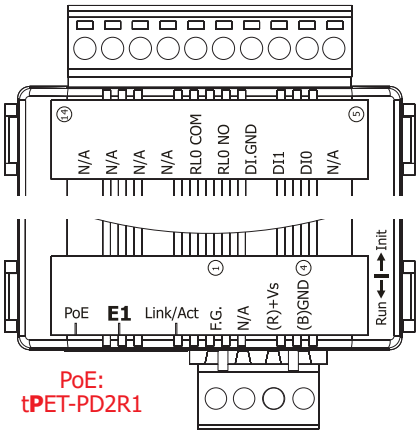
Left View



Pin Assignments



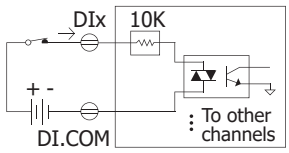
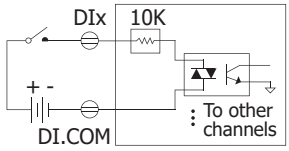
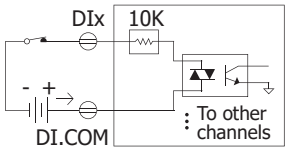
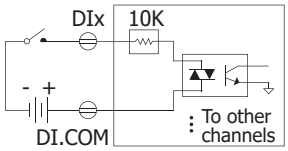
PoE:
tPET-P2R2

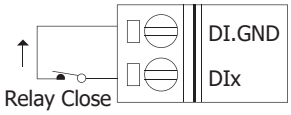
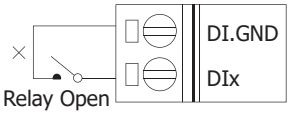


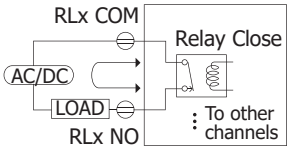
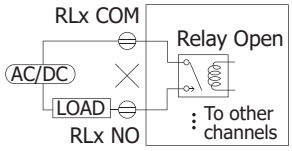
PoE:
tPET-PD2R1

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Wire Connections

Model	t(P)ET-P2R2	
Digital Input	**Readback as 1**	**Readback as 0**
	+10 ~ +50 V_{DC}	OPEN or <4 V_{DC}
Sink		
Source		

Model	t(P)ET-PD2R1	
Digital Input	**Readback as 1**	**Readback as 0**
	Relay ON	Relay OFF
Dry Contact		

Model	t(P)ET-P2R2/t(P)ET-PD2R1	
Digital Output	**Readback as 1**	**Readback as 0**
	Relay ON	Relay OFF
Relay Output		

Ordering Information

tET-P2R2 CR	Tiny Ethernet Module with 2-ch DI (Wet), 2-ch Power Relay (RoHS)
tET-PD2R1 CR	Tiny Ethernet Module with 2-ch DI (Dry), 1-ch Power Relay (RoHS)
tPET-P2R2 CR	Tiny PoE Ethernet Module with 2-ch DI (Wet), 2-ch Power Relay (RoHS)
tPET-PD2R1 CR	Tiny PoE Ethernet Module with 2-ch DI (Dry), 1-ch Power Relay (RoHS)

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000