

## ● Selection Guide

### tET/tPET Selection Guide

Model Name		Bus	Protocol	I/O Specification		
Ethernet	PoE			Isolation	DI	DO
tET-P6	tPET-P6	Ethernet 10/100 M	Modbus TCP/UDP	Yes	6-ch (Sink/Source)	-
tET-C4	tPET-C4			Yes	-	4-ch (NPN, Sink)
tET-A4	tPET-A4			Yes	-	4-ch (PNP, Source)
tET-P2C2	tPET-P2C2			Yes	2-ch (Sink/Source)	2-ch (NPN, Sink)
tET-P2A2	tPET-P2A2			Yes	2-ch (Sink/Source)	2-ch (PNP, Source)
tET-P2POR2	tPET-P2POR2			Yes	2-ch (Sink/Source)	2-ch Form A PhotoMos Relay
tET-P2R2	tPET-P2R2			Yes	2-ch (Sink/Source)	2-ch Form A Power Relay



## Features

- Cost-effective tiny Ethernet I/O modules (Modbus TCP/UDP)
- Contains a 32-bit MCU that efficiently handles network traffic
- 10/100 Base-TX Ethernet, RJ-45 x1 (Auto-negotiating, auto MDI/MDIX, LED Indicators)
- Includes redundant power inputs: PoE and DC input
- Supports TCP, UDP, HTTP, DHCP, BOOTP and TFTP protocols
- Supports UDP responder for device discovery
- Supports web configuration and firmware update via Ethernet
- Supports PWM (Pulse Width Modulation) in DO channels
- Supports latched D/I and 32-bit low-speed counter functions
- Supports I/O pair-connection through the Ethernet
- Dual-watchdog with power-on and safe value
- Tiny form-factor with easy DIN-Rail mounting
- RoHS compliant & no Halogen
- Made from fire retardant materials (UL94-V0 Level)
- Low power consumption (about 1.7 W only)








## System Specifications

Moduls	tET Series	tPET Series
<b>System</b>		
CPU	32-bit MCU	
Dual Watchdog	Yes	
<b>Communication</b>		
Ethernet Port	10/100 Base-TX, 8-Pin RJ-45 x1, (Auto-negotiating, Auto-MDI/MDIX, LED indicator)	
	-	PoE (IEEE 802.3af, Class 1)
<b>LED Display</b>		
S1	-	PoE indicator (Green)
	System indicator (Red)	
E1	Link/Act indicator (Green)	
	10/100 M indicator (Yellow)	
<b>Mechanical</b>		
Dimensions	52 mm x 27 mm x 98 mm	
Installation	DIN-Rail mounting	
<b>Environment</b>		
Operating Temperature	-25 °C ~ +75 °C	
Storage Temperature	-30 °C ~ +80 °C	
Humidity	10 ~ 90 % RH, non-condensing	
<b>Power Requirements</b>		
Power Input	-	PoE: IEEE 802.3af, Class 1
	Terminal block: +12 ~ 48 V <sub>DC</sub> (non-regulated)	
Power Consumption	0.04 A @ 24 V <sub>DC</sub> for tET-P2R2	0.03 A @ 48 V <sub>DC</sub> for tPET-P2R2

## I/O Specifications

### Digital Input/Output Series

Models				
	tET-C4/tPET-C4		tET-A4/tPET-A4	
<b>Digital Output</b>				
Output Channels	4			
Output Type (Module)	Sink, Open Collector (NPN)		Source, Open Collector (PNP)	
Output Voltage	+5 V <sub>DC</sub> ~ +30 V <sub>DC</sub>		+10 V <sub>DC</sub> ~ +40 V <sub>DC</sub>	
Max. Load Current	100 mA/channel at 25 °C Direct drive power relay module		650 mA/channel at 25 °C	
PWM	100 Hz Max. (High/Low duty cycle range = 5 ~ 65,535 ms)			
Over-Voltage	+60 V <sub>DC</sub>		+48 V <sub>DC</sub>	
Short Circuit Protection	-		Yes	
Output Isolation	3750 Vrms			

Models						
	tET-P6/tPET-P6		tET-P2C2/tPET-P2C2		tET-P2A2/tPET-P2A2	
<b>Digital Input</b>						
Input Channels	6		2			
Input Type (Device)	Wet Contact (Sink, Source)					
On Voltage Level	+10 V <sub>DC</sub> ~ +50 V <sub>DC</sub>					
Off Voltage Level	+4 V <sub>DC</sub> max.					
Input Impedance	10 k Ohm					
Counters	Max. Count: 4,294,967,285 (32 bits)					
	Max. Input Frequency: 3.5 kHz (without filter)					
	Min. Pulse Width: 0.15 ms					
Frequency Measurement	3.5 kHz in Mode "1000 ms" (+/-1 Hz error)					
Overvoltage Protection	+70 V <sub>DC</sub>					
Isolation	3750 Vrms					
<b>Digital Output</b>						
Output Channels	-		2			
Output Type (Module)	-		Sink, Open Collector (NPN)		Source, Open Collector (PNP)	
Output Voltage	-		+5 V <sub>DC</sub> ~ +30 V <sub>DC</sub>		+10 V <sub>DC</sub> ~ +40 V <sub>DC</sub>	
Max. Load Current	-		100 mA/channel at 25 °C Direct drive power relay module		650 mA/channel at 25 °C	
PWM	100 Hz Max. (High/Low duty cycle range = 5 ~ 65,535 ms)					
Over-Voltage	-		+60 V <sub>DC</sub>		+48 V <sub>DC</sub>	
Short Circuit Protection	-		-		Yes	
Output Isolation	-		3750 Vrms			

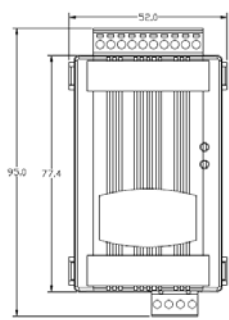
## Digital Input/Relay Output Series

Models	tET-P2POR2/tPET-P2POR2	tET-P2R2/tPET-P2R2	
<b>Digital Input</b>			
Input Channels	2		
Input Type (Device)	Wet Contact (Sink, Source)		
On Voltage Level	+10 V <sub>DC</sub> ~ +50 V <sub>DC</sub>		
Off Voltage Level	+4 V <sub>DC</sub> Max.		
Input Impedance	10 k Ohm		
Counters	Max. Count: 4,294,967,285 (32 bits)		
	Max. Input Frequency: 3.5 kHz (without filter)		
	Min. Pulse Width: 0.15 ms		
Frequency Measurement	3.5 kHz in Mode "1000 ms" (+/-1 Hz error)		
Overtoltage Protection	+70 V <sub>DC</sub>		
Isolation	3750 Vrms		
<b>Relay Output</b>			
Output Channels	2	2	
Output Type (Module)	PhotoMOS Relay, Form A	Power Relay, Form A (SPST N.O.)	
Load Voltage	60 V <sub>DC</sub> / V <sub>AC</sub>	-	
Load Current	60 V/1.0 A (Operating Temperature -25°C ~ -40°C)	-	
	60 V/0.8 A (Operating Temperature +40°C ~ +60°C)	-	
	60 V/0.7 A (Operating Temperature +60°C ~ +75°C)	-	
Turn ON Time	1.3 ms (Typical)	-	
Turn Off Time	0.1 ms (Typical)	-	
Output Isolation	3000 Vrms	3000 Vrms	
Output Voltage Range	-	250 V <sub>AC</sub> /30 V <sub>DC</sub>	
Max. Load Current	-	5.0 A/channel at 25 °C	
Operate Time	-	6 ms	
Release Time	-	3 ms	
PWM	50 Hz Max. (High/Low duty cycle range= 10 ~ 65,535 ms)		
Electrical Life (Resistive load)	VED	-	5 A 250 V <sub>AC</sub> 30,000 ops (10 ops/minute) at 75 °C
		-	5 A 30 V <sub>DC</sub> 70,000 ops (10 ops/minute) at 75 °C
	UL	-	5 A 250 V <sub>AC</sub> /30 V <sub>DC</sub> 6,000 ops
		-	3 A 250 V <sub>AC</sub> /30 V <sub>DC</sub> 100,000 ops
Mechanical Life	-	20,000,000 ops. At no load (300 ops./ minute)	

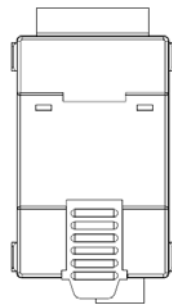
## Pin Assignments

<b>tET/tPET-C4</b> <b>tET/tPET-A4</b>  E1 01 F.G. 02 N/A 03 (R)+Vs 04 (B)GND	<b>tET/tPET-C4</b> <b>tET/tPET-A4</b> 14 N/A 13 N/A 12 N/A 11 N/A 10 DO3 09 DO2 08 DO1 07 DO0 06 DO.PWR 05 DO.GND	<b>tET/tPET-P6</b>  E1 01 F.G. 02 N/A 03 (R)+Vs 04 (B)GND	<b>tET/tPET-P6</b> 14 N/A 13 N/A 12 N/A 11 DI5 10 DI4 09 DI3 08 DI2 07 DI1 06 DI0 05 DI.COM
<b>tET/tPET-P2C2</b> <b>tET/tPET-P2A2</b>  E1 01 F.G. 02 N/A 03 (R)+Vs 04 (B)GND	<b>tET/tPET-P2C2</b> <b>tET/tPET-P2A2</b> 14 N/A 13 N/A 12 N/A 11 DI1 10 DI0 09 DI.COM 08 DO1 07 DO0 06 DO.PWR 05 DO.GND	<b>tET/tPET-P2POR2</b> <b>tET/tPET-P2R2</b>  E1 01 F.G. 02 N/A 03 (R)+Vs 04 (B)GND	<b>tET/tPET-P2POR2</b> <b>tET/tPET-P2P2</b> 14 N/A 13 N/A 12 N/A 11 RL1 COM 10 RL1 NO 09 RLO COM 08 RLO NO 07 DI1 06 DI0 05 DI.COM

### Dimensions (Unit: mm)



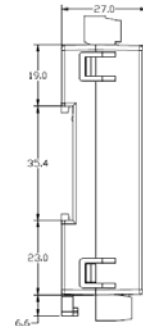
Front View



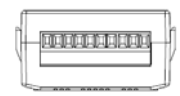
Rear View



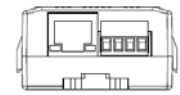
Right Side View



Left Side View



Top View



Bottom View

### Ordering Information

tET Series	
tET-P6 CR	Tiny Ethernet module with 6-ch DI (RoHS)
tET-C4 CR	Tiny Ethernet module with 4-ch DO (NPN, Sink) (RoHS)
tET-A4 CR	Tiny Ethernet module with 4-ch DO (PNP, Source) (RoHS)
tET-P2C2 CR	Tiny Ethernet module with 2-ch DI and 2-ch DO (NPN, Sink) (RoHS)
tET-P2A2 CR	Tiny Ethernet module with 2-ch DI and 2-ch DO (PNP, Source) (RoHS)
tET-P2POR2 CR	Tiny Ethernet module with 2-ch DI and 2-ch Form A PhotoMos relay (RoHS)
tET-P2R2 CR	Tiny Ethernet module with 2-ch DI and 2-ch Form A relay (RoHS)
tPET Series	
tPET-P6 CR	Tiny Ethernet module with PoE, and 6-ch DI (RoHS)
tPET-C4 CR	Tiny Ethernet module with PoE, and 4-ch DO (NPN, Sink) (RoHS)
tPET-A4 CR	Tiny Ethernet module with PoE, and 4-ch DO (PNP, Source) (RoHS)
tPET-P2C2 CR	Tiny Ethernet module with PoE, 2-ch DI and 2-ch DO (NPN, Sink) (RoHS)
tPET-P2A2 CR	Tiny Ethernet module with PoE, 2-ch DI and 2-ch DO (PNP, Source) (RoHS)
tPET-P2POR2 CR	Tiny Ethernet module with PoE, 2-ch DI and 2-ch Form A PhotoMos relay (RoHS)
tPET-P2R2 CR	Tiny Ethernet module with PoE, 2-ch DI and 2-ch Form A power relay (RoHS)

### Accessories

NS-205 CR	Unmanaged 5-Port Industrial Ethernet Switch (RoHS)
NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)
NS-205PSE-24V CR	Unmanaged 5-Port 10/100 Mbps PoE (PSE) Ethernet Switch; 24 V <sub>DC</sub> Input (RoHS)
LP1050D-24SDA	24 V/2.1 A, 50 W Power Supply with DIN-Rail Mounting
DLP1025D-48S	48 V/0.52 A, 25 W Power Supply with Din-Rail Mounting (for NS-205PSE)
LP1025D-24S	24 V/1 A, 25 W Power Supply with Din-Rail Mounting



NS-205 CR



NS-205PSE CR



NS-205PSE-24V CR



LP1050D-24SDA



DLP1025D-48S



LP1025D-24S