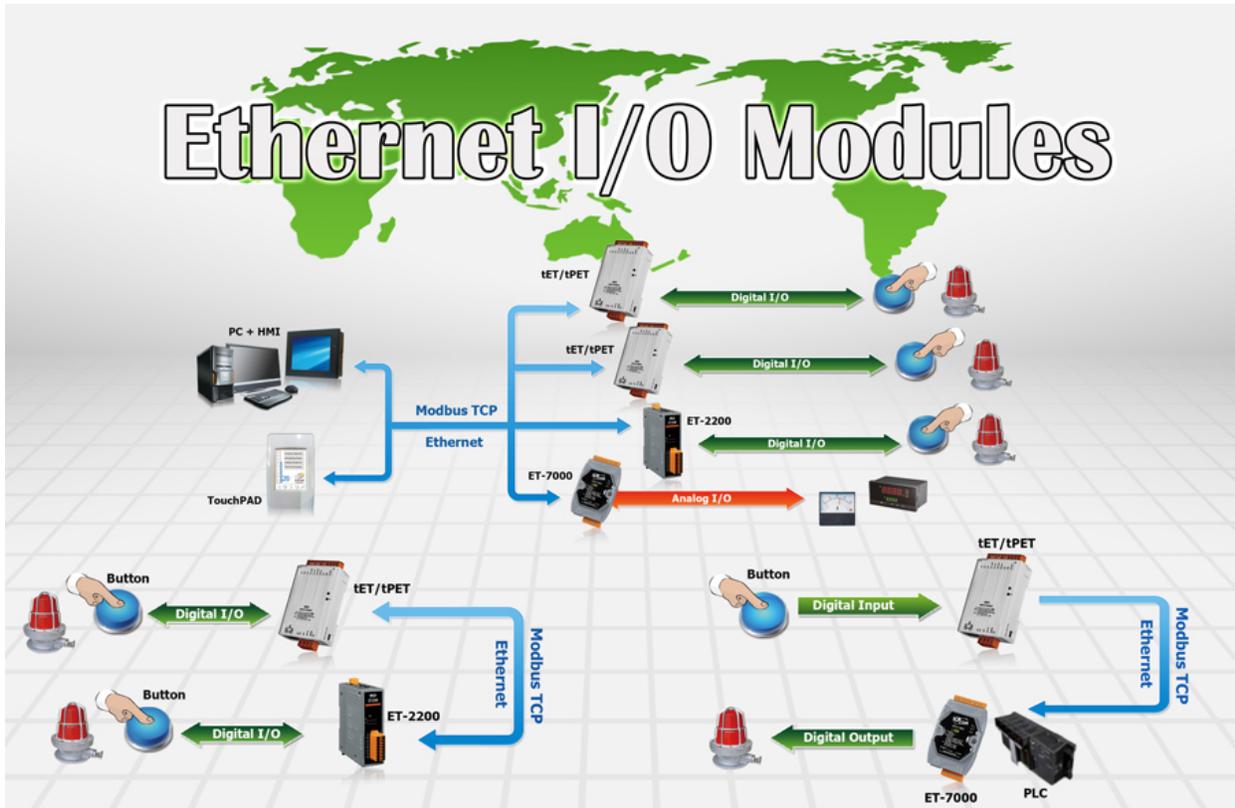Making Data Acquisition Easy

Ethernet I/O modules

Providing networking ability and various digital I/O functions, the PETL/tET/tPET/ET-2200 series are IP-based Ethernet I/O monitoring and control modules. The module can be remotely controlled through a 10/100 M Ethernet network by using Modbus TCP/UDP protocol. Modbus has become a standard communications protocol in industry, and is now the most commonly available means of connecting industrial electronic devices. This makes the PETL/tET/tPET/ET-2200 series perfect integration with the HMI, SCADA, PLC and other software systems.

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Product Lines Comparison Table

Comparison Item	ET-2200	tPET	PET-7000	ET-7200
Picture				
Ethernet	2-Port Switch, 10/100 M	10/100 M, PoE		2-Port Switch, 10/100 M
Modbus TCP/UDP	Yes			
Web HMI	Simplified		Yes	
Multi-client	Yes (12)	Yes (10)	Yes (12)	
IP Filter	Yes (white list)			
Latched DI	Yes			
DI as Counter	32-bit, 3 kHz		32-bit, 500 Hz	
I/O Pair-Connection	Yes (Poll/Push Mode)		Yes (Poll Mode)	
PWM	Yes (100 Hz max.)		-	
Frequency Measurement	Yes (3 kHz max.)		-	
Dual Watchdog	Yes (CPU, host)		Yes (Module, host)	
Form Factor	Slim Type	Tiny Size	Palm Size	
Space Occupied on DIN-Rail	3.3 cm	5.2 cm	7.2 cm	7.6 cm

The PETL/tET/tPET/ET-2200 series provides different numbers of digital input and output. ET-2200 comes with 2 Ethernet ports, it allows daisy chain connection which permits the flexibility in locating devices, eases installation and lowers infrastructure costs.

The PETL/tET/tPET/ET-2200 series modules can be used to create DI to DO pair-connect through the Ethernet. After configuration, modules can poll the status of the local DI channels and then use the Modbus/TCP protocol to continuously write to the remote DO devices.

For maximum space savings, the tET/tPET series is offered in an amazing tiny form-factor that makes it can be easily installed in anywhere, even directly embedded into a machine. It is equipped with two removable terminal block connectors for easy wiring, and 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 DC adapter.

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1. DIO Pair-Connection (Mirror)

The PETL/tET/tPET/ET-2200 series Ethernet I/O modules support various I/O types, like photo-isolated digital input, power relay, PhotoMOS relay, and open collector output. The module can be used to create DI to DO pair-connection (mirror) through the Ethernet. Once the configuration is completed, the modules can automatically read the local DI status and write to remote DO channels via the Modbus TCP protocol in the background.

Push mode is a new way to transfer local DI status, immediately and automatically, to remote device or computer once the DI status changes. Without busy polling, push mode effectively reduces the network loading and improves the performance of the whole system.

PETL/tET/tPET/ET-2200 series supports both polling and push mode to transfer the I/O data over the network. No programming is required in the tET/tPET series, and the push mode can be easily enabled through the web configuration interface. The solution makes the user set up system easily and quickly, and the system work more efficient.
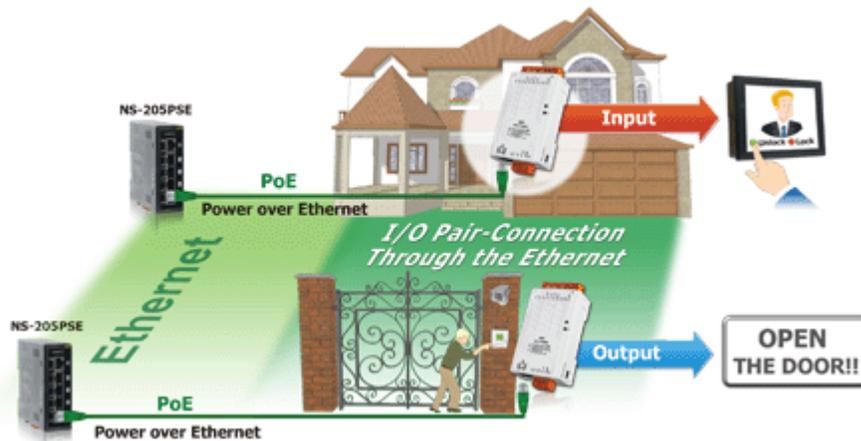
2. Network Configuration

DHCP minimizes configuration errors caused by manual IP address configuration, such as address conflicts caused by the assignment of an IP address to more than one computer or device at the same time. The PETL/tET/tPET/ET-2200 series module supports the DHCP client function, which allows to PETL/tET/tPET/ET-2200 easily obtain the necessary TCP/IP configuration information from a DHCP server. The module also contains a UDP responder that transmits its IP address information a UDP search from the eSearch utility program, making local management more efficient.

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3. Built-in Web Server

The series of Ethernet I/O modules features a powerful 32-bit MCU to enable efficient handling of network traffic. It also has a built-in web server that provides an intuitive web management interface to allow users to modify the settings of the module including DHCP/Static IP, gateway/mask and serial ports.

4. Built-in Dual Watchdog

The module provides dual watchdog: CPU watchdog (hardware function) and host watchdog (software function). The CPU watchdog which automatically resets the CPU if the built-in firmware is operating abnormally, while the host watchdog set the digital output with predefined safe-value when there is no communication between the module and the host (PC or PLC) for a period of time (watchdog timeout). The dual watchdog is an important feature that ensures the module operates continuously, even in harsh environments.

5. PWM (Pulse Width Modulation)

The DOs on the PETL/tET/tPET/ET-2200 series provide PWM (pulse generation) function. Uses can set different frequency and duty cycle for each digital output channel. In addition, the two DO channels can work independently or simultaneously. The t(P)ET/PETL series product reduces the complexity of the control system and enhances the timing accuracy.

6. Frequency Measurement

The PETL/tET/tPET/ET-2200 series module also provides the function of the frequency measurement; it gets the DI count in a certain time and calculate the frequency. Rather than polling by the remote host, our module can count out the frequency directly, reduce the communication delay caused by two ends and also increase the accuracy of frequency measurement. In order to applying for more applications, this module provides 3 scan modes and 4 moving average methods for user to select the best way in their applications. This feature can be used for rotation and speed measurements.
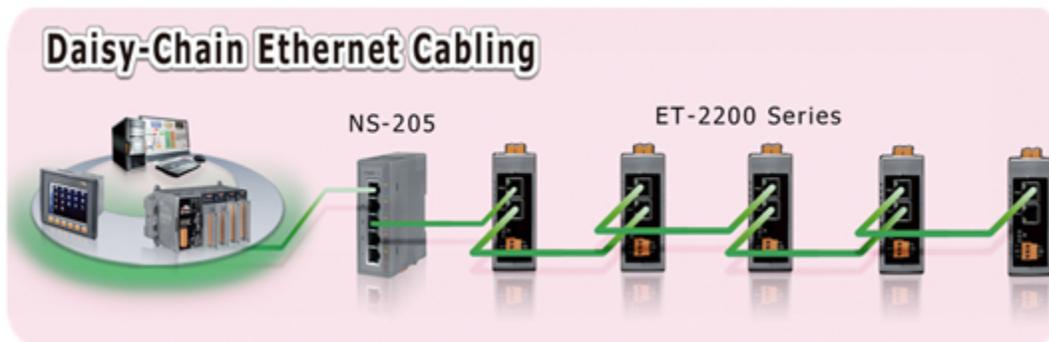
7. Daisy-Chain Ethernet Cabling

The ET-2200 series has a built-in two-port Ethernet switch to implement daisy-chain topology. The cabling is much easier and total costs of cable and switch are significantly reduced.

8. LAN Bypass

LAN Bypass feature guarantees the Ethernet communication. It will automatically active to continue the network traffic when the ET-2200 series loses its power.

9. Low Power Consumption

The PETL/tPET series module 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 such as the NS-205PSE. If there is no PoE switch on site, the module will also accept power input from a DC adapter. The PETL/tET/tPET/ET-2200 series is designed for ultra-low power consumption, reducing hidden costs from increasing fuel and electricity prices, especially when you have a huge amount of device servers installed. Reducing the amount of electricity consumed by choosing energy-efficient equipment can have a positive impact on maintaining a green environment.

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10. Convenience

The module is equipped with removable terminal block connectors to allow easy wiring. For maximum space savings, the tET/tPET series is offered in an amazing tiny form-factor while the PETL/ET-2200 series is palm-size form-factor; this makes them can be easily installed in anywhere, even directly embedded into a machine.

ET-2200

https://www.icpdas-usa.com/modbustcp_dual_ethernet_io_modules.html

tPET

https://www.icpdas-usa.com/poe_tpet_modules.html

tET

https://www.icpdas-usa.com/tet_modules.html

PET-7000

https://www.icpdas-usa.com/poe_ethernet_i_o_modules.html

ET-7200

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If you have other PoE or Ethernet data acquisition requirements or have some questions, we can certainly help you to choose the best solution. Please call our technical support team at (310) 517-9888 X102