



## TNS5800D 12-Port Series

Wall Mounting

12-port Layer 3 EN50155 Industrial Ethernet Switch

- Support 4 Gigabit M12 interfaces (with 2 groups of Bypass function)
- Support 8 100M M12 interfaces or Gigabit M12 interface, PoE function (optional)
- Adopt Ring patented technology, support single ring, coupling ring, chain, Dual-homing function
- Support optional 2 24VDC or 110VDC power supply inputs
- Support IP67 protection grade
- Support -40~75°C wide operating temperature range



Industrial Grade



EN 50155



EN 50121



# Introduction


TNS5800D 12-Port series are layer 3 industrial Ethernet switches. The product conforms to the requirements of industrial standard EN50155 and EN50121 Ethernet interfaces use firm and reliable M12 connectors which can adapt to usage scenario with vibration and shock. PoE power supply conforms to IEEE802.3af/at protocol standard, and it can power device over Ethernet, thus decreasing the cable connection of powered devices. This product supports 24VDC or 110VDC power supply input and adopts wall mounting, which can meet the needs of different application sites.

The network management system supports various network protocols and industry standards, such as static routing, RIP, VRRP, NAT, STP/RSTP/MSTP, ERPS, 802.1Q VLAN, QoS function, DHCP Client, DHCP Server, IGMP Snooping, LLDP, port trunking, port mirroring, etc. It also possesses complete management functions, support port configuration, port statistics, port IP binding, access control, 802.1X authentication, network diagnosis, rapid configuration, online upgrade, etc.; CLI, WEB, Telnet, SNMP, SSH and other access methods can be supported. Network management system could bring you great user experience through its friendly interface design and easy and convenient operation.

When port has link failure, ALARM indicator will be bright and send out alarm, meanwhile, alarm device connected to the relay will send out alarm for rapid scene troubleshooting. The hardware adopts fanless, low power consumption and wide temperature design, and the external heat sink provides extraordinary heat dissipation performance. This devices have passed rigorous industrial standard tests, which can suit for the industrial scene environment with harsh requirements for EMC. It can be widely used in systems such as train network, signal, on-board PIS, CCTV.

## Features and Benefits

- ⦿ SNMPv1/v2c/v3 is used for network management of various levels
- ⦿ RMON can be used for efficient and flexible network monitoring
- ⦿ Port mirroring can conduct data analysis and monitoring, which is convenient for online debugging
- ⦿ QoS supports real-time traffic classification and priority setting
- ⦿ LLDP can achieve automatic topology discovery, which is convenient for visual management
- ⦿ DHCP server and DHCP client could be used for allocating IP address of different strategies
- ⦿ DHCP Snooping can ensure DHCP client gets IP address from legal DHCP server
- ⦿ DHCP relay function can realize IP address, gateway, DNS configuration cross network segment
- ⦿ File management is convenient for the device rapid configuration and online upgrading
- ⦿ Port statistics can be used for the port real time traffic statistics

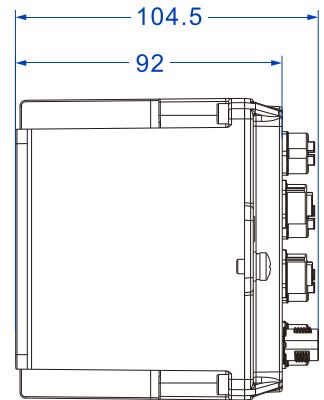
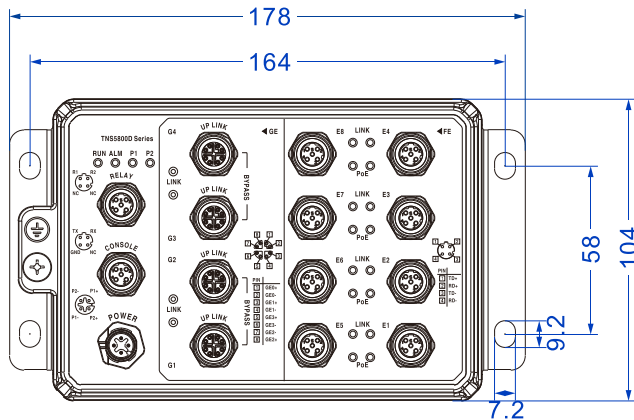
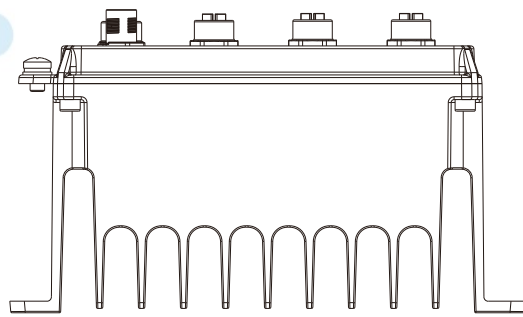
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- ⦿ ARP could be used for MAC address resolution
  - ⦿ User password can conduct user hierarchical management to improve the device management security
  - ⦿ Access Control can enhance network flexibility and security
  - ⦿ Storm suppression can restrain broadcast, unknown multicast and unicast
  - ⦿ SSHD configuration could encrypt transmitted data, prevent DNS and IP spoofing
  - ⦿ TELNET configuration and SSH configuration guarantee secure access to data
  - ⦿ VLAN can be set to simplify network planning
  - ⦿ Port Trunking can increase network bandwidth and enhance the reliability of network connection to achieve optimum bandwidth utilization
  - ⦿ Bandwidth management can reasonably distribute network bandwidth, preventing unpredictable network status
  - ⦿ Port isolation could achieve port isolation in the same VLAN and save VLAN resources
  - ⦿ PIM-DM/PIM-SM, IGMP Snooping and static multicast can be used to filter multicast data to save network bandwidth
  - ⦿ Ring, ERPS, STP/RSTP/MSTP can achieve network redundancy, preventing network storm
  - ⦿ Ping, Traceroute, Port Loopback could achieve network diagnosis and troubleshooting
  - ⦿ VRRP, RIP, OSPF could implement dynamic router configuration
  - ⦿ Bypass function can prevent communication breakdown caused by power supply failure
  - ⦿ NAT maps private IP address to the legal IP address of external network, which can slow the consumption of IP address space
  - ⦿ PoE could power device via Ethernet, which has greatly saved the cost of device power supply
  - ⦿ Loop detection could efficiently eliminate the influence caused by port loopback by detecting the existence of loopback

## Dimension

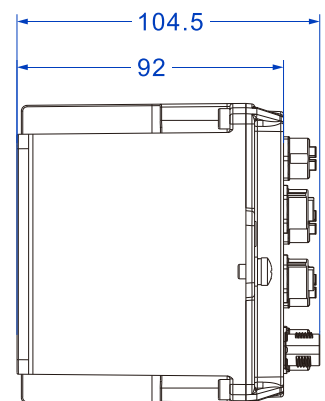
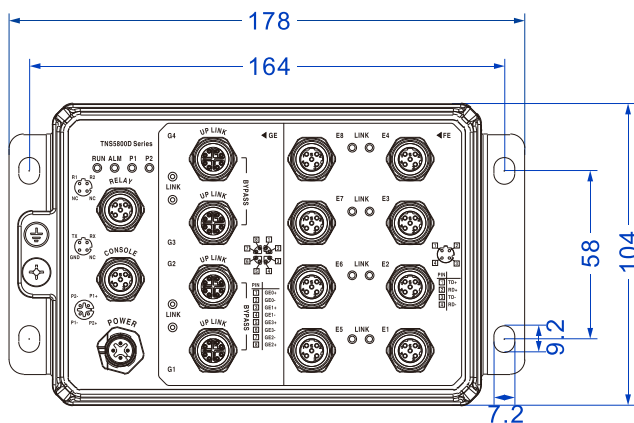
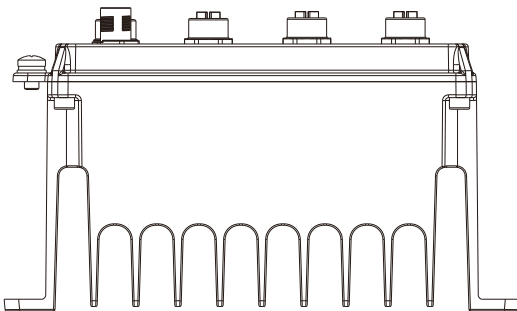
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Unit: mm

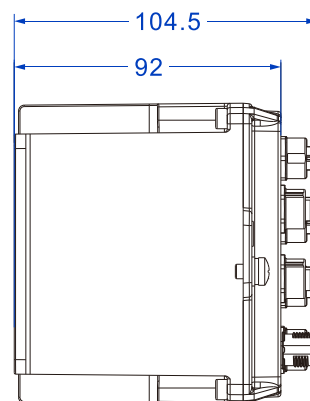
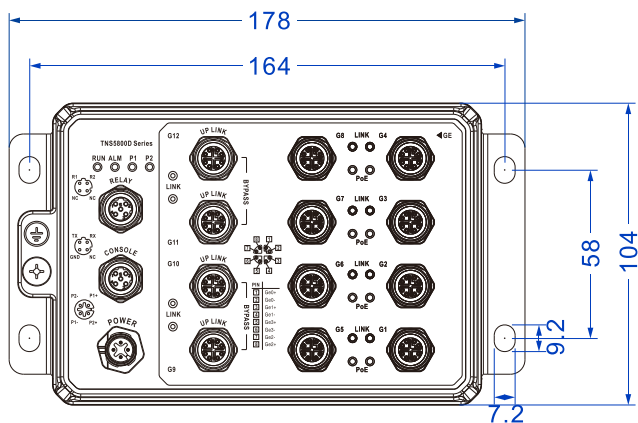
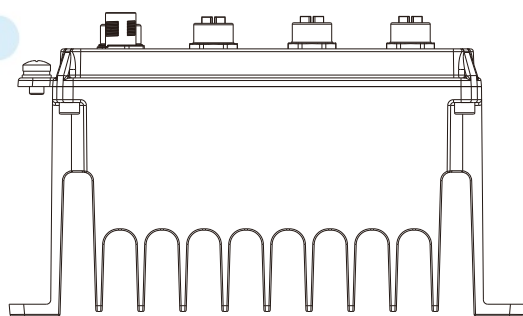
- TNS5800D-8P4GT-P24 and TNS5800D-8P4GT-P110



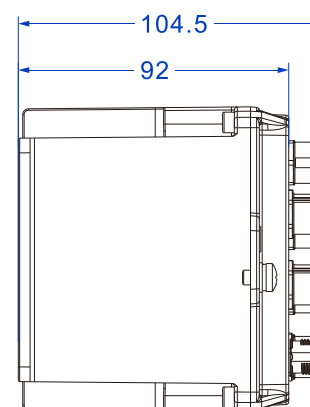
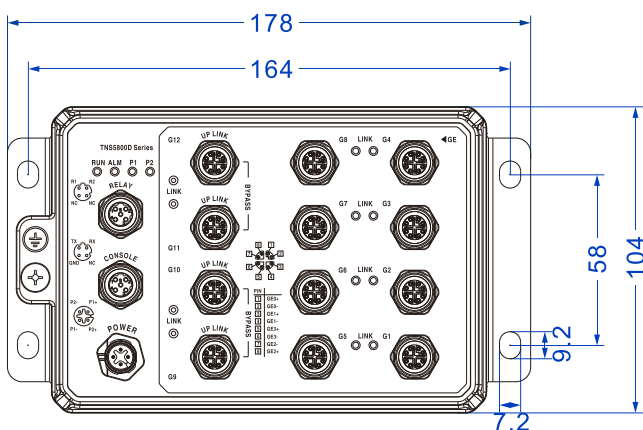
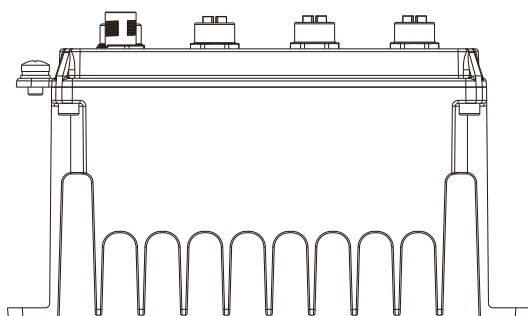
● TNS5800D-8T4GT-P24 and TNS5800D-8T4GT-P110



● TNS5800D-8GP4GT-P24 and TNS5800D-8GP4GT-P110



● TNS5800D-12GT-P110



## Specification

Standard & Protocol	<p>IEEE 802.3 for 10Base-T</p> <p>IEEE 802.3u for 100Base-TX</p> <p>IEEE 802.3ab for 1000Base-T</p> <p>IEEE 802.3x for Flow Control</p> <p>IEEE 802.1D for Spanning Tree Protocol</p> <p>IEEE 802.1w for Rapid Spanning Tree Protocol</p> <p>IEEE 802.1s for Multiple Spanning Tree Protocol</p> <p>IEEE 802.1Q for VLAN</p> <p>IEEE 802.1p for CoS</p> <p>IEEE 802.1AB for LLDP</p> <p>IEEE 802.3af for PoE</p> <p>IEEE 802.3at for PoE+</p> <p>ITU-T G.8032 for ERPS</p>
Management	<p>SNMP v1/v2c/v3 Centralized Management of Equipment, RMON, Port Mirroring, QoS, LLDP, DHCP Client, DHCP Server, File Management, Port Statistics, Log Information, Static ARP, PoE Management (for PoE version)</p>
Security	<p>Classification of User Permissions, NAT, 802.1X Authentication, DHCP Snooping, Radius Server Authentication, Port Alarm, Storm Suppression, SSHD Configuration, Telnet Configuration, Loop Detection, Link Flapping Protection, Aggregation Protection</p>
Switch Function	<p>802.1Q VLAN, Port Trunking, Bandwidth Management, Flow Control, Port Isolation</p>
Unicast / Multicast	<p>Static Multicast, Multicast Routing, IGMP-Snooping, PIM-SM, PIM-DM</p>
Redundancy Technology	<p>Ring, STP/RSTP/MSTP, ERPS, Loop Detection</p>
Troubleshooting	<p>Ping, Traceroute, Port Loopback</p>
Time Management	<p>NTP</p>
Interface	<p>Gigabit M12: 10/100/1000Base-T(X), M12(Female), 8-Pin X-Coded, Automatic Flow Control, Full/half Duplex Mode, MDI/MDI-X Autotuning ; it supports two groups of Bypass</p> <p>Gigabit PoE M12:10/100/1000base-T (X), M12 (Female), 8-Pin X-Coded, automatic flow rate control, full/half duplex mode, MDI/MDI-X automatic detection; support two groups of Bypass function. The maximum capacity of a single port is 30W PoE power supply output. Pin 1 and 3 of PoE power supply are positive, while Pin 2 and 4 are negative</p>

	<p>100M M12: 10/100Base-T(X), M12(Female), 4-Pin D-Coded, Automatic Flow Control, Full/half Duplex Mode, MDI/MDI-X Autotuning</p> <p>100M PoE M12:10/100base-T (X), M12 (Female), 4-Pin D-Coded, automatic flow rate control, full/half duplex mode, MDI/MDI-X automatic detection; The maximum capacity of a single port is 30W PoE power supply output. Pin 1 and 3 of PoE power supply are positive, while pin 2 and 4 are negative</p> <p>Alarm port: M12 (Female), 4-Pin D-Coded, support 1 relay alarm output, current load capability is 1A@30VDC or 0.3A@125VAC</p> <p>Console port: CLI command line management port (RS-232), M12(Female), 4-Pin D-Coded</p>
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#### Indicator

Power indicator, alarm indicator, running indicator, interface indicator, PoE indicator

#### Switch Property

Transmission mode: store and forward  
MAC address: 16K  
Packet buffer size: 12Mbit  
Backplane bandwidth: 56G  
Switch time delay: <10μs

#### Power Supply

Power supply range:

- TNS5800D-8P4GT-P24: 24VDC(18~36VDC)
- TNS5800D-8P4GT-P110: 110VDC(66~156VDC)
- TNS5800D-8T4GT-P24: 24VDC(9~36VDC)
- TNS5800D-8T4GT-P110: 110VDC(66~156VDC)
- TNS5800D-8GP4GT-P24: 24VDC (18~36VDC)
- TNS5800D-8GP4GT-P110: 110VDC(66~156VDC)
- TNS5800D-12GT-P110: 110VDC(66~156VDC)

Connection method: M12(Male), 4-Pin A-Coded

Connection protection: anti-reverse connection

#### Power Consumption

TNS5800D-8P4GT-P110

- Full load (without PoE load): 15.8W@110VDC
- Full load (with PoE load): 124.6W@110VDC

#### Working Environment

Operating temperature: -40~75°C  
Storage temperature:-40~85°C  
Relative humidity: 5%~95%(no condensation)

#### Physical Characteristic

Housing: IP67 protection, metal  
Installation: wall mounting  
Dimension (W x H x D): 178mm×104mm×92mm  
Weight: 1.57kg

#### Industrial Standard

IEC 61000-4-2 (ESD, electrostatic discharge), Level 4

- Air discharge: ±15kV
- Contact discharge: ±8kV

IEC 61000-4-4 (EFT, electrical fast transient pulses), Level 3

- Power supply: ±4kV
- Ethernet interface: ±2kV
- Relay: ±4kV

IEC 61000-4-5 (Surge), Level 3

- Power supply: common mode ±4kV, differential mode ±2kV
- Relay: common mode ±4kV, differential mode ±2kV
- Ethernet interface: common mode ±4kV

Shock: IEC 61373

Free fall: IEC 60068-2-32

Vibration: IEC 61373

#### Authentication

CE, FCC, RoHS, EN50155, EN50121-3-2, IEC61373, EN45545

#### Warranty

5 years

## Ordering Information

Available Models	100M M12	100M PoE M12	Gigabit M12 LAN Port	Gigabit PoE M12	Gigabit M12 LAN Port With Bypass	Power Supply
TNS5800D-8P4GT-P24	—	8	—	—	4	24VDC (18~36VDC)
TNS5800D-8P4GT-P110	—	8	—	—	4	110VDC (66~156VDC)
TNS5800D-8T4GT-P110	8	—	—	—	4	110VDC (66~156VDC)
TNS5800D-8T4GT-P24	8	—	—	—	4	24VDC (9~36VDC)
TNS5800D-8GP4GT-P24	—	—	—	8	4	24VDC (18~36VDC)
TNS5800D-8GP4GT-P110	—	—	—	8	4	110VDC (66~156VDC)
TNS5800D-12GT-P110	—	—	8	—	4	110VDC (66~156VDC)



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