TNS5800 Series

1U Rack Mounting

12/20-Port Layer 3 EN50155 Industrial Ethernet Switch

- Support 4 Gigabit M12 interfaces (with 2 groups of Bypass function), 8/16 100M or Gigabit PoE M12 interfaces (optional)
- Adopt Ring patented technology, support single ring, coupling ring, chain, Dual-homing function
- Support 2 110VDC or 24VDC power supply inputs
- Support IP40 protection grade
- Support -40~75℃ wide operating temperature range

Industrial Grade PoE RPS EN 50155 EN 50121 Bypass

ROBUST INDUSTRIAL CONNECTION

Introduction

TNS5800 series belongs to layer 3 EN50155 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 series has 5 products. They provide 110VDC power or 24VDC input and adopt rack-mounted installation, 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, OSPF, VRRP, STP/RSTP/MSTP, ERPS, 802.1Q VLAN, QoS function, 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 power supply or 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 input power supply is two independent power supply circuits which can ensure the normal operation of the device when one power supply fails. The hardware adopts fanless, low power consumption and wide temperature design, and the external heat sink provides extraordinary heat dissipation performance. This device 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

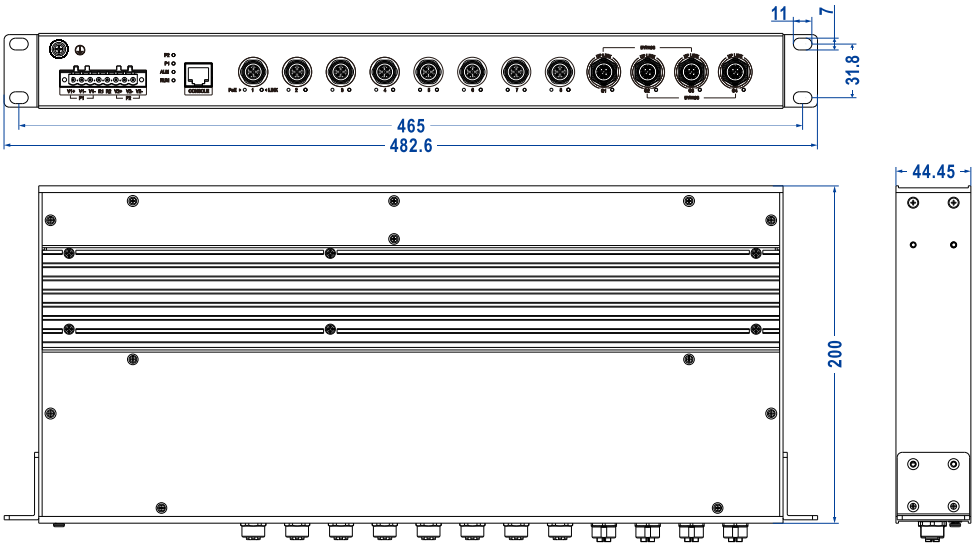
- SNMPv1/v2c/v3 is used for network management of various levels
- RMON can be used for efficient and flexible network monitoring
- Port mirroring can conduct data analysis and monitoring, which is convenient for online debugging
- QoS supports real-time traffic classification and priority setting
- LLDP can achieve automatic topology discovery, which is convenient for visual management
- DHCP server can be used for distributing IP address with different strategies
- File management is convenient for the device rapid configuration and online upgrading
- Port statistics can be used for the port real time traffic statistics
- ARP could be used for MAC address resolution

- User password can conduct user hierarchical management to improve the device management security
- Access control, ACL and 802.1X authentication can enhance the flexibility and security of the network
- 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, and 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

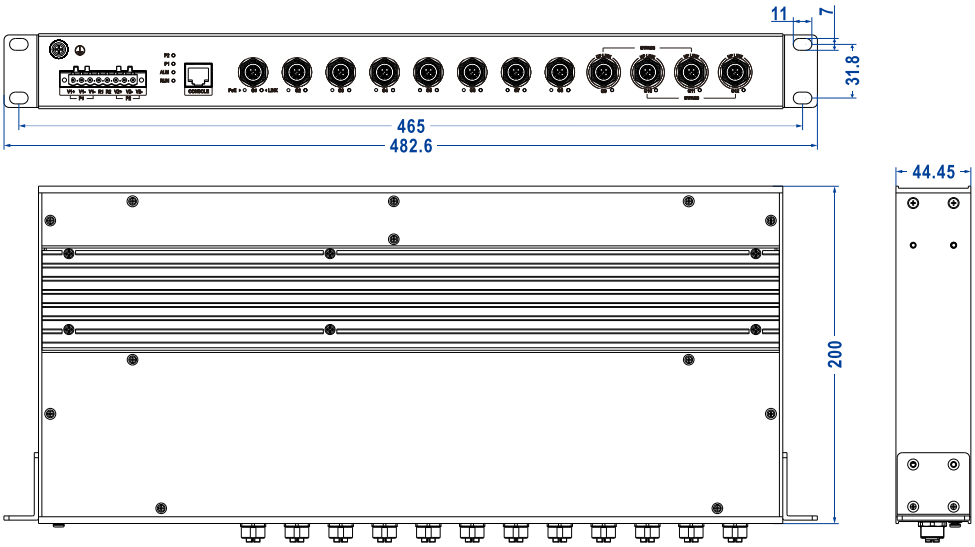
Dimension

Unit: mm

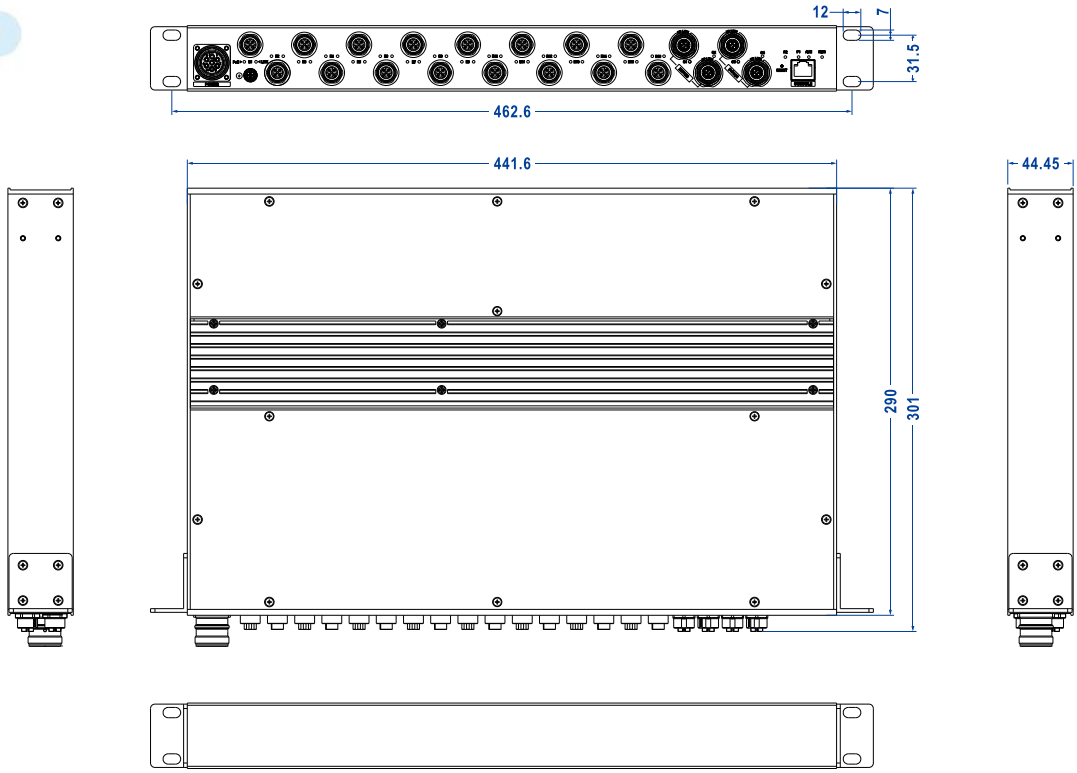
- TNS5800-8P4GT-2P110



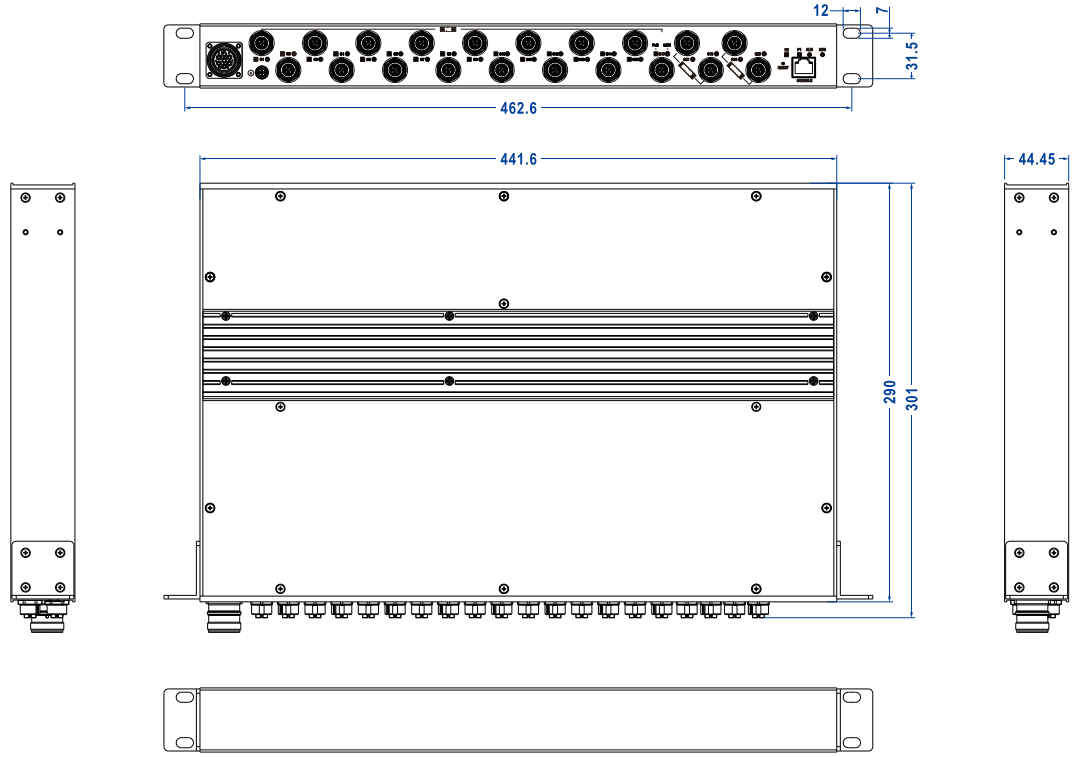
- TNS5800-8GP4GT-2P110



- TNS5800-16P4GT-2P110, TNS5800-16P4GT-2P24



- TNS5800-16GP4GT-2P110



Specification

Standard & Protocol	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX IEEE 802.3ab for 1000Base-T IEEE 802.3x for Flow Control IEEE 802.1D for Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1Q for VLAN IEEE 802.1p for CoS IEEE 802.1X for 802.1X Authentication IEEE 802.1AB for LLDP IEEE 802.3af for PoE IEEE 802.3at for PoE+ ITU-T G.8032 for ERPS
Management	SNMP v1/v2c/v3 Centralized Management of Equipment, RMON, Port Mirroring, QoS, LLDP, DHCP Server, File Management, Port Statistics, Log Information, Static ARP, PoE Management
Security	Classification of User Permissions, ACL, NAT, 802.1X Authentication, Radius Server Authentication, Port Alarm, Power Alarm, Storm Suppression, SSHD Configuration, Telnet Configuration, Loop Detection, Aggregation Protection, Link Flapping Protection, DHCP Snooping
Switch Function	802.1Q VLAN, Port Trunking, Bandwidth Management, Flow Control, Port Isolation
Unicast / Multicast	Static Multicast, IGMP-Snooping, PIM-SM, PIM-SM
Redundancy Technology	Ring, STP/RSTP/MSTP, ERPS
Troubleshooting	Ping, Traceroute, Port Loopback
Routing Technique	VRRP, RIP, OSPF
Time Management	NTP
Interface	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; The maximum capacity of a single port is 30W PoE power supply output. Pin 1 and 2 of PoE power supply are positive, while pin 3 and 4 are negative Gigabit M12: 10/100/1000Base-T(X), M12(Female), 8-Pin X-Coded,

	Automatic Flow Control, Full/half Duplex Mode, MDI/MDI-X Autotunning; it supports two groups of Bypass 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 Alarm port: 8-pin 5.08mm pitch terminal blocks (relay occupies 2 pins) or 7-pin Male M23 port (relay occupies 2 pins) , support 1 relay alarm outputs, current loading capacity is 1A@30VDC or 0.3A@125VAC Console port: CLI command line management port (RS-232), RJ45
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: 128Gbps Switch time delay: <10μs
Power Supply	TNS5800-8P4GT-2P110, TNS5800-8GP4GT-2P110: ● Power supply range: 110VDC (66~156VDC), dual power supply redundancy ● Connection method: 8-pin 5.08mm pitch terminal blocks (includes 6-pin power supply) ● Connection protection: anti-reverse connection TNS5800-16P4GT-2P110, TNS5800-16GP4GT-2P110: ● Power supply range: 110VDC, dual power supply redundancy ● Connection method: 7-pin Male M23 (includes 4-pin power supply) ● Connection protection: anti-reverse connection TNS5800-16P4GT-2P24: ● Power supply range: 24VDC (18~36VDC), dual power supply redundancy ● Connection method: 7-pin Male M23 (includes 4-pin power supply) ● Connection protection: anti-reverse connection

Power Consumption	Full load (no PoE load): < 20W Full load (including PoE load): ＜120W
Working Environment	Operating temperature: -40~75℃ Storage temperature:-40~85℃ Relative humidity: 5%~95%(no condensation)
Mechanical Structure	Housing: IP40 protection, metal Installation: 1U rack mounting Dimension (W x H x D): 482.6mm×44.45mm×200mm (lugs are included for 12-Port device) 441.6mm × 44.45mm × 290mm (no lugs for 20-Port device) Weight: 3.71kg (12-Port device) 4.43kg (20-Port device)
Industrial Standard	EN 50121--3--2: 2016 standard, Table 5.3 (Electrostatic Discharge), Class A ● Air discharge:± 8kV ● Contact discharge: ±6kV EN 50121--3--2: 2016 standard, Table 3.3 (Surge), Class A ● Power supply: common mode±2kV, differential mode±1kV EN 50121--3--2: 2016 standard, Table 3.2 (Electrical Fast Transient Pulses), Class A ● Power supply: ±2kV ● Signal: ±2kV EN 50121--3--2: 2016 standard, Table 5.1, 5.2 (Radio Frequency Electromagnetic), Class A ● 80MHz~800MHz, 20V/m ● 800MHz~1GHz, 20V/m ● 1.4GHz~2.0GHz, 10V/m ● 2.0GHz~2.7GHz, 5V/m ● 5.1GHz~6GHz, 3V/m EN 50121--3--2: 2016 standard, Table 3.1, 4.1 (Conducted Disturbance Induced by RF Fields), Class A ● Power supply: 0.15MHz~80MHz, 10V ● Signal: 0.15MHz~80MHz, 10V EN 50121--3--2: 2016 standard, table 3.1 (Power Supply Conducted Disturbance)

	● 150kHz~500kHz, 79dBμV quasi-peak value ● 500kHz~30MHz, 73dBμV quasi-peak value EN 50121--3--2: 2016 standard, table 3.1 (Radiation Disturbance) ● 30MHz~230MHz, ＜40dBμV/m quasi-peak value ● 230MHz~1GHz, ＜47dBμV/m quasi-peak value Shock: IEC 61373 Free fall: IEC 60068-2-31 Vibration: IEC 61373
Authentication	CE, FCC, RoHS, EN50155, EN50121-3-2, IEC61373
Warranty	5 years

Ordering Information

Available Models	100M PoE M12	Gigabit PoE M12	Gigabit Bypass M12	Power Supply
TNS5800-8P4GT-2P110-N	8	–	4	110VDC redundant power supply
TNS5800-8GP4GT-2P110-N	–	8	4	
TNS5800-16P4GT-2P110-N	16	–	4	
TNS5800-16GP4GT-2P110-N	–	16	4	
TNS5800-16P4GT-2P24-N	16	–	4	18~36VDC redundant power supply