TNS5800 Series (12 Ports)

1U Rack Mounting

12-port Layer 3 Industrial Ethernet Switch for Rail Transit

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

Industrial Grade RPS EN 50155 EN 50121 Bypass

ROBUST INDUSTRIAL CONNECTION

Introduction

TNS5800 series is layer 3 industrial Ethernet switch designed for rail transit. 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. This series has 2 products. They provide 110VDC power supply 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. It can provide users with good experience with friendly design of network management system interface, simple and convenient operation.

When power supply or port has link failure, ALM 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 has passed rigorous industrial standard tests, which can suit for the industrial scene environment with harsh requirements for EMC. It is designed for rail transit industrial and can be widely used in systems such as train control, on-board PIS, CCTV.

Features and Benefits

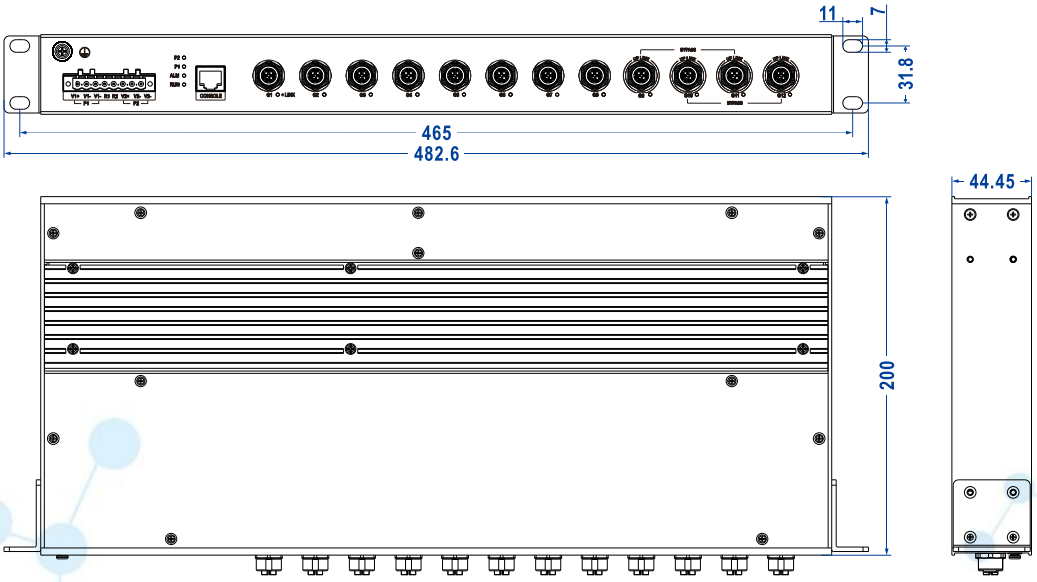
- SNMPv1/v2c/v3 is used for network management of various levels
- RMON can be used for efficient and flexible network monitoring
- Port mirroring can conduct data analysis and monitoring, which is convenient for online debugging
- QoS supports real-time traffic classification and priority setting
- 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, 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
- Loop detection could efficiently eliminate the influence caused by port loopback by detecting the existence of loopback

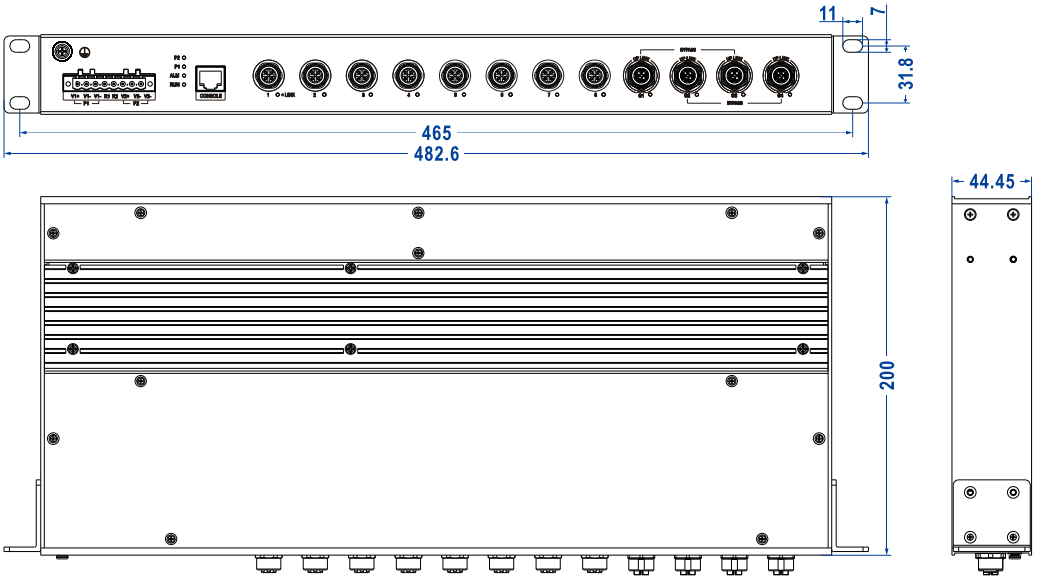
Dimension

Unit: mm

- TNS5800-12GT-X-2P110



- TNS5800-8T4GT-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 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
Security	Classification of User Permissions, ACL, NAT, 802.1X authentication, Radius server authentication, port alarm, power alarm, storm suppression, SSHD configuration, Telnet configuration
Switch Function	802.1Q VLAN, Port Trunking, Bandwidth Management, Flow Control, Port Isolation
Unicast / Multicast	Static Multicast, IGMP-Snooping

Redundancy Technology	Ring, STP/RSTP/MSTP, ERPS, Loop Detection
Troubleshooting	Ping, Traceroute, Port Loopback
Routing Technique	VRRP, RIP, OSPF
Time Management	NTP
Interface	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 M12: 10/100Base-T(X), M12(Female), 4-Pin D-Coded, Automatic Flow Control, Full/half Duplex Mode, MDI/MDI-X Autotunning Alarm ports: 8-pin 5.08mm pitch terminal blocks, relay occupies 2 pins and 1 relay alarm information output is supported, the current load capability 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
Switch Property	Transmission mode: store and forward MAC address: 16K Packet buffer size: 12Mbit Backplane bandwidth: 128G Switch time delay: <10μs
Power Supply	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
Power Consumption	< 20W
Working Environment	Operating temperature: -40~75℃ Storage temperature: -40~85℃ Relative humidity: 5%~95% (no condensation)
Physical Characteristic	Housing: IP40 protection, metal Installation: 1U rack mounting Dimension (W x H x D): 482.6mm×44.45mm×200mm (lugs are included)

	Weight: 3.49kg
Industrial Standard	EN 50121-3-2: 2016 standard, Table 5.3 (Electrostatic Discharge), Level A ● Air discharge: ±8kV ● Contact discharge: ±6kV EN 50121-3-2: 2016 standard, Table 3.3 (Surge), Level A ● Power supply: common mode±2kV, differential mode±1kV EN 50121-3-2: 2016 standard, Table 3.2 (Electrical Fast Transient Pulses), Level A ● Power supply: ±2kV ● Signal: ±2kV EN 50121-3-2: 2016 standard, Table 5.1, 5.2 (Radio Frequency Electromagnetic), Level 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), Level 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- 32 Vibration: IEC 61373
Authentication	CE, FCC, RoHS, EN50155, EN50121-3-2, IEC61373

Warranty	5 years

Ordering Information

Available Models	100M M12	Gigabit M12	Gigabit Bypass M12	Power Supply
TNS5800-12GT-X-2P110-N	–	8	4	110VDC redundant power supply
TNS5800-8T4GT-2P110-N	8	–	4	