

ICS5400TSN-24GT16GS4XS-LN Series

19-inch 1U Rack Mounting

44-Port Gigabit /10Gigabit Layer 3 TSN Industrial Ethernet Switch

- Support 24 Gigabit copper ports, 16 Gigabit SFP slots, 4 10Gigabit SFP+ slots
- Support Precision Time Protocol (PTP), provide sub-microsecond synchronization accuracy to meet requirements for high-precision time synchronization
- Support TSN (time sensitive networking) protocol standards such as IEEE802.1AS, IEEE802.1Qbv, IEEE802.1Qbu, IEEE802.1Qch, IEEE802.1CB and IEEE802.1Qci, which can provide deterministic transmission with low delay and high reliability for data
- Adopt Ring patented technology, support single ring, coupling ring, chain, Dual-homing function
- Support DC or AC dual power redundancy (optional), input voltage: 12~55VDC or 85~264VAC
- Support -40~75°C wide operating temperature range



Industrial Grade



Fanless Design



RPS

Introduction

ICS5400TSN-24GT16GS4XS-LN series are 44-port Gigabit/10Gigabit TSN (time sensitive network) switches, and layer 3 industrial Ethernet switches that integrates the characteristics of TSN. This series has 2 products, provides Gigabit copper port, Gigabit SFP slot and 10G SFP+ slot, 12~55VDC or 85~264VAC dual power supply input (optional). It adopts 1U rack-mounted installation to meet the requirements of different application sites.

TSN (Time Sensitive Networking) is a set of protocol standards developed by IEEE802.1 TSN task group. This standard defines the time sensitive mechanism of Ethernet data transmission, and ensures the transmission performance of business traffic in Ethernet by allowing some traffic packets to be forwarded first, clearing routes by using gating scheduling mechanism and bandwidth reservation. It adds certainty and reliability to the standard Ethernet to ensure that the Ethernet can provide stable and consistent service levels for the transmission of critical data. Currently, the supported basic TSN protocols include: IEEE 802.1AS, IEEE 802.1Qbv, IEEE 802.1Qbu, IEEE 802.1Qch, IEEE 802.1CB, IEEE 802.1Qci, etc.

The network management system supports various network protocols and industry standards, such as static routing, RIP, OSPF, OSPFv3, TSN, PTP, Ring, STP/RSTP/MSTP, ERPS, 802.1Q VLAN, QoS, NAS, GVRP, MVRP, DHCP Server/Snooping/Relay, IGMP/MLD Snooping, LLDP, LACP, etc. It also possesses complete management functions, support port configuration, port statistics, access control, 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.

This series product supports optional dual AC/DC power supply. The input power supply is two independent power supply circuits which can ensure the normal operation of the device when one power supply fails. 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 hardware adopts fanless, low power consumption and wide temperature design, and the external heat sink provides extraordinary heat dissipation performance. This series product has passed rigorous industrial standard tests, which can suit for the industrial scene environment with harsh requirements for EMC. It can be widely used in smart grid, rail transit, smart city, safety city, new energy, intelligent manufacturing and other industrial fields.

Features and Benefits

- ⦿ TSN supports 802.1 TSN series standards and timely delivery of time-sensitive streams.
 - IEEE 802.1 AS High Precision Clock Synchronization

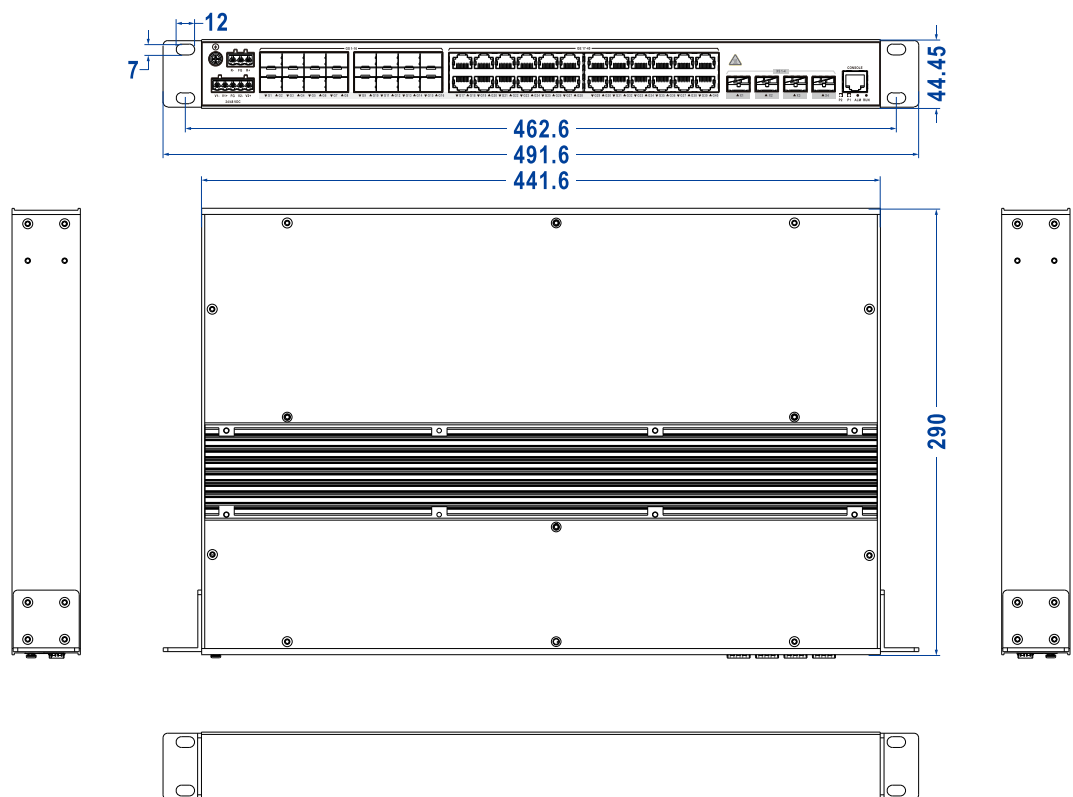
- IEEE 802.1 Qbv Time Aware Shaper
- IEEE 802.1 Qbu Frame Preemption
- IEEE 802.1 Qch Cyclic Queuing and Forwarding
- IEEE 802.1 CB Frame Replication and Elimination for Reliability
- IEEE 802.1 Qci Per-Stream Filtering and Policing
- ⊙ SNMPv1/v2c/v3 is used for network management of various levels
- ⊙ RMON can be used for efficient and flexible network monitoring
- ⊙ QoS supports real-time traffic classification and priority setting
- ⊙ Storm suppression can restrain broadcast, unknown multicast and unicast
- ⊙ Port statistics can be used for the port real time traffic statistics
- ⊙ Alarm log and log server can record user operation, system failure, system security and other information locally and remotely
- ⊙ Relay alarm is convenient for troubleshooting of construction site
- ⊙ CFM function can determine the scope and boundary of maintenance domain
- ⊙ 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
- ⊙ User privilege classification configuration can set user privilege level
- ⊙ Access Control can enhance network flexibility and security
- ⊙ SSH configuration and HTTPS configuration can improve device's management security and guarantee data access security
- ⊙ Support AAA service, which can provide security assurance for various services
- ⊙ Port Trunking and LACP can increase network bandwidth and enhance the reliability of network connection to achieve optimum bandwidth utilization
- ⊙ Link OAM function can monitor the health of the network and locate faulted link and fault conditions
- ⊙ IPMC file configuration can deploy access control on IP multicast flow
- ⊙ MVR configuration supports multicast communication forwarding on multicast VLAN
- ⊙ IGMP Snooping can be used for filtering multicast traffic to save the network bandwidth
- ⊙ MLD Snooping could be used for managing and controlling IPv6 multicast group
- ⊙ LLDP can achieve automatic topology discovery, which is convenient for visual management
- ⊙ VLAN is used for simplifying network planning
- ⊙ VCL function can divide VLAN based on MAC address, protocol, and IP subnet.
- ⊙ GVRP configuration could be used for registering and unregistering VLAN properties
- ⊙ Ring, ERPS, STP/RSTP/MSTP can achieve network redundancy, preventing network storm
- ⊙ RIP, OSPF, OSPFv3 could achieve dynamic routing configuration
- ⊙ Loop detection could efficiently eliminate the influence caused by port loopback by detecting the existence of loopback
- ⊙ Network diagnosis and troubleshooting could be conducted via Ping, Traceroute, Link OAM and cable detection

- Support DDM (digital diagnostic monitoring) function, which can monitor the optical power, temperature and other real-time parameters of SFP fiber module with DDM function, facilitating the link default diagnosis of optical fiber
- Port mirroring can conduct data analysis and monitoring, which is convenient for online debugging
- File management is convenient for the device rapid configuration and online upgrading

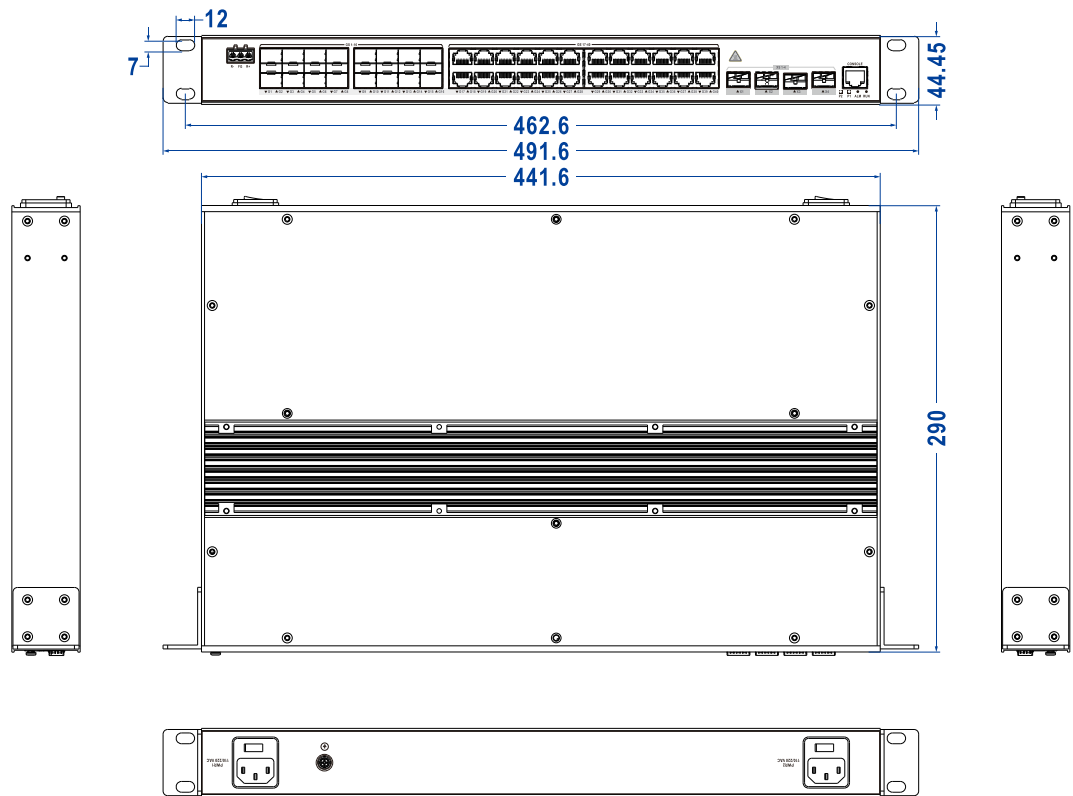
Dimension

Unit: mm

- ICS5400TSN-24GT16GS4XS-LN-2LV



- ICS5400TSN-24GT16GS4XS-LN-2HV



Specification

Standard & Protocol

- IEEE 802.3 for 10Base-T
- IEEE 802.3u for 100Base-TX
- IEEE 802.3ab for 1000Base-T
- IEEE 802.3z for 1000Base-X
- IEEE 802.3ae for 10GbE SFP+
- IEEE 802.1AS PTP for TSN
- IEEE 802.1Qbv
- IEEE 802.1Qbu
- IEEE 802.1Qch
- IEEE 802.1CB
- IEEE 802.1Qci
- 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
- IEEE802.1p for CoS
- IEEE 802.1AB for LLDP
- IEEE 802.3ad for LACP
- ITU-T G.8032 for ERPS

TSN

PTP clock synchronization, frame preemption, time-aware shaper TAS,

single stream filtering and management PSFP, frame reliability replication and FRER elimination

Management	SNMP v1/v2c/v3 Centralized Management of Equipment, RMON, QoS, LLDP, log information, Syslog server, CFM, port mirroring, DHCPv4 Server, DHCPv4/v6 Relay, file management, port statistics, DDMI
Security	User Privilege Classification, Authentication Method Configuration, SSH Configuration, HTTPS Configuration, Access Control, Port Security, NAS, ACL, IPv4/v6 Source Protection, ARP Detection, Radius Server Authentication, TACACS + Server Authentication, DHCPv4/v6 Snooping, Storm Suppression, Port Alarm, Power Supply Alarm, Loop Protection
Switch Function	802.1Q VLAN, Private VLAN, ACL, Port Trunking, Bandwidth Management, Flow Control, Port Isolation, MAC Address Table
Unicast / Multicast	IPMC, MVR, IGMP Snooping, MLD Snooping, MVRP, GVRP
Redundancy Technology	Ring, STP/RSTP/MSTP, ERPS
Routing Technique	RIP, OSPF, OSPFv3
Troubleshooting	Ping, Traceroute, Link OAM, cable detection
Time Management	NTP Client, Time Zone Configuration, PTP
Interface	Gigabit copper port: 10/100/1000Base-T(X) self-adaption or forced mode, RJ45, Automatic Flow Control, Full/Half Duplex Mode self-adaption, MDI/MDI-X Autotuning Gigabit SFP: 100/1000Base-X self-adaption or forced mode, SFP slot 10Gigabit SFP: 1G/2.5G//10GBase-X self-adaption or forced mode, SFP+ slot Relay: support 1 relay alarm information output, using 3-pin 5.08mm pitch terminal blocks, and the current load 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
Switch Property	Transmission mode: store and forward MAC address: 32K

	Buffer: 32Mbit Backplane bandwidth: 160G Switch time delay: <10μs
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Power Supply

ICS5400TSN-24GT16GS4XS-LN-2LV:

- Power supply range: 24VDC/48VDC (12~55VDC), dual power supply redundancy
- Connection mode: 5-pin 5.08mm pitch terminal blocks
- Connection protection: anti-reverse connection

ICS5400TSN-24GT16GS4XS-LN-2HV:

- Power supply range: 110VAC/220VAC (85~264VAC), dual power supply redundancy
- Connection mode: AC socket with switch

Power Consumption

ICS5400TSN-24GT16GS4XS-LN-2LV:

- No-load: 19.5W@24VDC
- Full-load: 47.3W@24VDC

Working Environment

Operating temperature: -40~75°C

Storage temperature: -40~85°C

Relative humidity: 5%~95% (no condensation)

Physical Characteristic

Housing: IP40 protection, metal

Installation: 19-inch 1U rack mounting

Dimension (W x H x D): 441.6mm×44.45mm×290mm (lugs are not included)

Industrial Standard

IEC 61000-4-2 (ESD, electrostatic discharge), Level 3

- Contact discharge: ±6kV
- Air discharge: ±8kV

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

- Power supply: ±2kV
- Signal: ±2kV

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

- Power supply: differential mode±1kV, common mode±2kV
- Signal: ±2kV

Shock: IEC 60068-2-27

Free fall: IEC 60068-2-32

Vibration: IEC 60068-2-6

Your Reliable Industrial Communication Expert

Authentication	CE, FCC, RoHS
Warranty	5 years



Ordering Information

Available Models	Gigabit Copper Port	Gigabit SFP	10Gigabit SFP+	Power Supply
ICS5400TSN-24GT16GS4 XS-LN-2LV	24	16	4	12~55VDC, dual power supply
ICS5400TSN-24GT16GS4 XS-LN-2HV	24	16	4	85~264VAC, dual power supply



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