3onedata
Reliable Connections



# ICS5428 Series

## 19-inch 1U Rack Mounting
## 28-port Gigabit /10Gigabit Layer 3 Industrial Ethernet Switch

- Support 4 10Gigabit SFP+ slots, 8 Gigabit COMBO (SFP slots or RJ45), 16 Gigabit copper ports
- Adopt Ring patented technology, support single ring, coupling ring, chain, Dual-homing function
- Support ERPS and loop detection, which can eliminate loop effectively and prevent broadcast storm caused by data loop
- 10 Gigabit bandwidth can transmit large amounts of video, voice and data with high performance and high speed
- DC product supports 2*24/48VDC (18~72VDC) redundant power inputs
- AC product supports 2*110/220VAC (85~264VAC/DC) power supply inputs
- Support -40~75℃ wide temperature operation

Industrial Grade Fanless Desig RPS

# Introduction

ICS5428 series is 28-port Gigabit/10 Gigabit layer 3 industrial Ethernet switch. It provides 10 Gigabit SFP+ slots, Gigabit copper ports and Gigabit COMBO ports. It adopts 1U rack mounting. Abundant numbers of interfaces, bandwidth of Gigabit/10Gigabit combination and ability to transmit large amounts of video, voice and data with high performance and high speed meet the application requirements of large-scale industrial network.

Network management system supports various network protocols and industrial standards, such as Static Routing, RIP, VRRP, NAT, STP/RSTP/MSTP, GMRP, EPRS, 802.1Q VLAN, QoS, DHCP Server, DHCP Client, IGMP Static Multicast, LLDP, Port Trunking, Port Mirroring, etc. It also possesses complete management functions, including Port Configuration, Port Statistics, Port IP Binding, Access Control, 802.1X Authentication, Network Diagnosis, Rapid Configuration, Online Upgrading and so on; and supports CLI, HTTP, HTTPS, Telnet, SSH and other access methods., Network management system could bring you great user experience through its friendly interface design and easy and convenient operation.

RESET button can reboot the device and restore factory defaults. This 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, ALM indicator will be bright and send out alarm, meanwhile, alarm device connected to the relay will send out alarm for rapid scene troubleshooting. Hardware adopts fanless, low power consumption, wide temperature and voltage design and 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

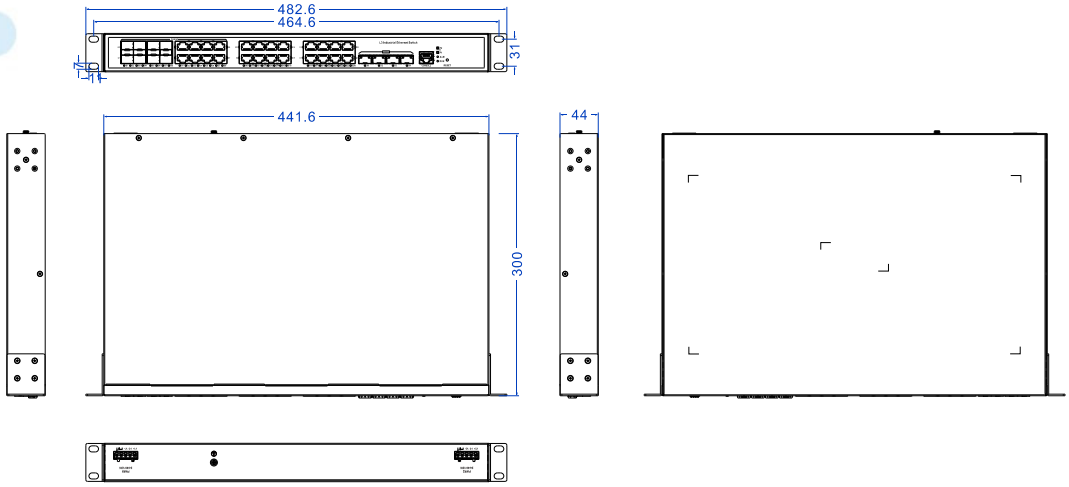
- SNMPv1/v2c/v3 is used for network management of various levels
- RMON can be used for efficient and flexible network monitoring
- QoS supports real-time traffic classification and priority setting
- LLDP can achieve automatic topology discovery, which is convenient for visual management
- DHCP server 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
- User privilege classification configuration can set user privilege level
- ACL can enhance the flexibility and security of the network, support ACL IN direction

- SSH configuration and HTTPS configuration can improve device's management security and guarantee data access security
- Support NAS network access service and provide security assurance for multiple services
- Ring, MRP, STP/RSTP/MSTP can achieve network redundancy, preventing network storm
- EPRS function can realize link backup and improve the reliability of network
- Relay alarm is convenient for troubleshooting of construction site
- Storm suppression can restrain broadcast, unknown multicast and unicast
- VLAN is used for simplifying network planning
- Port Trunking and LACP can increase network bandwidth and enhance the reliability of network connection to achieve optimum bandwidth utilization
- IGMP/MLD Snooping/GMRP can be used for filtering multicast traffic to save the network bandwidth
- IGMP/MLD can be used to manage and maintain multicast members
- ARP could be used for MAC address resolution
- VRRP, RIP/RIPng, ISIS, OSPF/OSPFv3 and BGP can realize dynamic routing configuration
- PIM-DM and PIM-SM can be used to create and maintain multicast routing table entries and realize multicast routing forwarding
- 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
- IPDT can track IP device status and realize interaction with other applications
- Smart Link link backup, providing reliable and efficient backup and fast switching mechanism
- Network diagnosis and troubleshooting could be conducted via Ping, Traceroute, Cable Diagnosis, SFP Digital Diagnosis
- Port mirroring can conduct data analysis and monitoring, which is convenient for online debugging

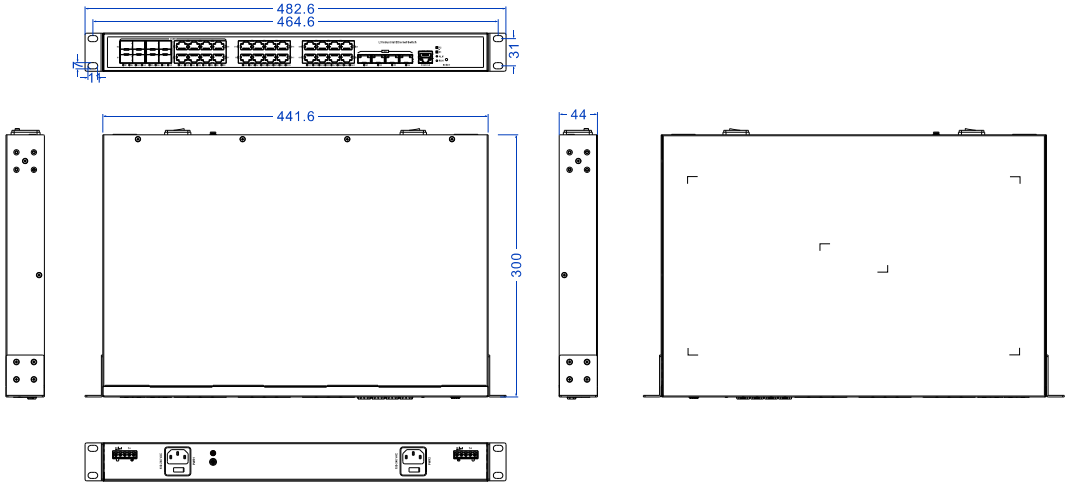
# Dimension

Unit: mm

- ICS5428-16GT8GC4XS-2LV




- ICS5428-16GT8GC4XS-2HV




# Specification

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|---|---|
| Standard & Protocol | IEEE 802.3 for 10Base-T<br>IEEE 802.3u for 100Base-TX<br>IEEE 802.3ab for 1000Base-T<br>IEEE802.3ae for 10GBase-X SFP+<br>IEEE 802.3x for Flow Control<br>IEEE 802.1D for Spanning Tree Protocol<br>IEEE 802.1w for Rapid Spanning Tree Protocol<br>IEEE 802.1s for Multiple Spanning Tree Protocol<br>ITU-T G.8032 for ERPS<br>IEEE 802.1Q for VLAN<br>IEEE 802.1p for CoS<br>IEEE 802.1AB for LLDP<br>IEEE 802.3ad for LACP |
| Management | SNMP v1/v2c/v3 Centralized Management of Equipment, QoS, DHCP Server, |

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| | DHCP Snooping, DHCP Relay, Static MAC Address, LLDP, Storm Suppression, User Password, Login Method, File Management, Log Management, Port Statistics |
| Security | User privilege classification, ACL, SSH/HTTPS protocol authorization, link flapping protection, port loop detection, access control, SNMP, RMON, IPDT, IPv6DT, Smart-Link, NAT, port alarm, power alarm, temperature alarm, network load alarm |
| Switch Function | 802.1Q VLAN, MAC, static aggregation, LACP, ARP, storm suppression |
| Unicast / Multicast | IGMP-Snooping, MLD-Snooping, GMRP, IGMP, MLD, PIM-SM, PIM-DM, IPv6-PIM-SM, IPv6-PIM-DM |
| Redundancy Technology | Ring, MRP, STP/RSTP/MSTP, ERPS |
| Troubleshooting | Ping, Traceroute, Network Cable Diagnosis, SFP Digital Diagnosis |
| Routing Technique | RIP, RIPng, OSPF, OSPFv3, ISIS, VRRP, IPv6 VRRP, BGP |
| Time Management | NTP, Time Zone Configuration |
| Interface | Gigabit copper port: 10/100/1000Base-T(X) self-adaptive RJ45, automatic flow control, support full/half duplex mode, MDI/MDI-X self-adaption<br>10Gigabit SFP+: 1G/2.5G/10GBase-X self-adaptive SFP+ slot<br>Combo port: 10/100/1000Base-T(X) RJ45 or 100/1000Base-X SFP slot<br>Console port: CLI command line management port(RS-232), RJ45<br>Alarm port: 2 5-pin 5.08mm pitch terminal blocks(relay occupies 2 pins), support 2 relay alarm outputs, current loading capacity is 2A@30VDC or 2A@220VAC |
| Indicator | Power indicator, running indicator, alarm indicator, interface indicator |
| Switch Property | Transmission mode: store and forward<br>MAC address: 16K<br>Buffer: 12Mbit<br>Backplane bandwidth: 128Gbps<br>Switch time delay: <10μs |
| Power Supply | DC products: |

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| | • Input voltage: 24/48VDC (18~72VDC)<br>• Redundant power supply: support dual power supply redundancy<br>• Connection protection: anti-reverse connection<br>• Access terminal: 5-pin 5.08mm pitch terminal blocks (power supply occupies 2 pins)<br><br>AC products:<br>• Input voltage: 110/220VAC (85~264VAC/DC)<br>• Access terminal: single-phase socket with rocker switch |
| Power Consumption | ICS5428-16GT8GC4XS-2LV:<br>• No-load at normal temperature: 9.39W@48VDC<br>• Full-load at normal temperature: 26.35W@48VDC<br>• Full-load at high temperature: 29.07W@48VDC<br><br>ICS5428-16GT8GC4XS-2HV:<br>• No-load at normal temperature: 9.76W@220VAC<br>• Full-load at normal temperature: 27.38W@220VAC<br>• Full-load at high temperature: 30.25W@220VAC |
| Working Environment | Operating temperature: -40~75℃<br>Storage temperature: -40~85℃<br>Relative humidity: 5%~95% (no condensation) |
| Mechanical Structure | Housing: IP40 protection, metal<br>Installation: 19-inch 1U rack mounting<br>Dimension (W x H x D): 482.6mm×44mm×300mm<br>Weight:<br>• ICS5428-16GT8GC4XS-2LV: 3.933kg<br>• ICS5428-16GT8GC4XS-2HV: 3.747kg |
| Industrial Standard | IEC 61000-4-2 (ESD, electronic static discharge), Level 4<br>• Air discharge: ±15kV<br>• Contact discharge: ±8kV<br><br>IEC 61000-4-4 (EFT, electrical fast transient), Level 4<br>• Power supply: ±4kV<br>• Ethernet interface: ±2kV<br>• Relay: ±2kV<br><br>IEC 61000-4-5 (Surge), Level 4<br>• Power supply: common mode ±4kV, differential mode ±2kV<br>• Ethernet interface: common mode±4kV<br>• Relay: common mode ±4kV, differential mode ±2kV |

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| | Shock: IEC 60068-2-27<br>Free fall: IEC 60068-2-31<br>Vibration: IEC 60068-2-6 |
| Authentication | CE, FCC, RoHS |
| Warranty | 5 years |

# Ordering Information

| Model | Gigabit Copper Port | Gigabit COMBO | 10Gigabit SFP+ Slot | Power Supply |
|---|---|---|---|---|
| ICS5428-16GT8GC4XS-2LV | 16 | 8 | 4 | 2*24/48VDC (18~72VDC) redundant power supply inputs |
| ICS5428-16GT8GC4XS-2HV | 16 | 8 | 4 | 2*110/220VAC (85~264VAC/DC) power supply inputs |

Address: 3/B, Zone 1, Baiwangxin High Technology Industrial Park, Song Bai Road, Nanshan District, Shenzhen, 518108, China
TEL.: +86-755-26702668 ext 835 FAX: +86-755-26703485
E-mail: ics@3onedata.com
Website: www.3onedata.com

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