CTS8012G-M12-12GT

12-Port Layer 3 Managed Rack Mount M12 Industrial Gigabit Switch



- Support 12 x 1G copper ports using M12 connectors
- Support two sets of Bypass functions, enabling direct connectivity after a power outage
- Support MW-Ring (recovery time < 20 ms @ 200 switches), EAPS, ERPS, MSTP (compatible with RSTP/STP), and MRP for network redundancy
- Support static routing, RIPv1/v2, OSPF dynamic routing protocols
- Support multiple power input options including DC24, DC48, or DC110, dual inputs supporting power redundancy
- High-strength aluminum alloy shell, IP40-rated housing protection, fanless design
- -40 to 70°C operating temperature range

Product Description

The CTS8012G-M12-12GT is a 12-port Layer 3 gigabit managed rack mount M12 industrial Ethernet switch. It supports 12 x 1G copper ports with M12 connectors, meeting rail transit industry standards to ensure secure and robust connections, making it ideal for environments subject to strong vibration. The gigabit copper ports support two sets of bypass functions, which automatically create a direct connection in the event of power failure, bypassing faulty nodes to prevent network interruptions and ensure continuous operation. Utilizing a store-and-forward mechanism, it delivers powerful bandwidth processing capability, automatically detects packet errors, reduces transmission faults, and easily supports gigabit networking to ensure stable, reliable, and efficient data transmission. Built with industrial-grade components and high-standard system design and production control, the switch features a standard 19-inch 1U rack-mounted design, a rugged high-strength aluminum alloy enclosure with fanless heat dissipation, an operating temperature range of -40℃ to +70℃, and high-level industrial protection, making it suitable for harsh environments with stable communication performance.

The CTS8012G-M12-12GT Layer 3 switch complies with major communication standards in the industrial sector, addressing requirements for real-time communication and network security. It offers multiple management options, including CLI access via CONSOLE port or TELNET/SSH protocols, WEB interface access via HTTP/HTTPS, and

device MIB access via SNMP. It supports a wide range of network protocols and industry standards such as RIP, OSPF, VRRP, MW-Ring, EAPS, ERPS, STP/RSTP/MSTP, MRP, VLAN, GVRP, QoS, LACP, PIM, IGMP, IGMP Snooping, GMRP, LLDP, RMON, 802.1X, ACL, DHCP Server/Relay/Security/Snooping, NTP client/server, port mirroring, Ping, and Tracert, enhancing network performance, reliability, and security to meet complex networking needs. Undergoing rigorous functional, high/low temperature, safety, and EMC testing, the product is suitable for diverse network scenarios and demanding industrial environments, and is widely applicable in industrial automation, integrated energy, smart cities, rail transit, intelligent transportation, smart mining, and smart manufacturing.

Product Features

- Support storm suppression for broadcast, multicast, and unknown unicast packets, including broadcast and multicast data packet storm detection, to prevent broadcast storms
- Support both static and dynamic link aggregation (LACP), which can increase transmission bandwidth, improve link reliability, and achieve network load balancing
- Support 802.1Q VLAN, providing Access, Trunk, and Hybrid interfaces for easy partitioning of multiple broadcast domains, enhancing network security
- Support VLAN partitioning based on port, MAC address, protocol, IP subnet, and other methods, suitable for different network environments
- Support GVRP protocol for dynamic distribution, registration, and propagation of VLAN attributes, maintaining dynamic VLANs
- Support MAC address table with aging time limit, static unicast/multicast MAC address binding with interfaces to ensure the use of legitimate users
- Support multicast protocols such as PIM, IGMP, GMRP, IGMP Snooping, etc., reducing multicast data broadcast in the network and saving network resources
- Support LLDP (Link Layer Discovery Protocol) for obtaining LLDP neighbor device information, monitoring link status, facilitating topology management, and fault location
- Support MSTP (Multi-Spanning Tree Protocol), compatible with RSTP/STP, eliminates network loops, and enhances network reliability
- Support ERPS (Ethernet Ring Protection Switching) for Ethernet ring protection technology, providing ring networking, link backup, fast convergence, and improving network stability
- Support EAPS (Ethernet Auto-Protection System) loop protection protocol and MW-Ring proprietary ring network protocol, enhancing the reliability of system communication

- Support the MRP (Media Redundancy Protocol) to enhance network reliability, with a reconfiguration time of ≤500ms
- Support loopback detection to prevent network loops from triggering network storms
- Support static routing configuration, RIPv1/v2, and OSPF dynamic routing protocols to enable routing selection and packet forwarding
- Support SNMPv1/v2c/v3, enabling information queries, modifications, and fault diagnosis through an MIB network management system for centralized management
- Support RMON remote network monitoring, providing statistics and alerts for various types of data frames, suitable for remote monitoring and management via a network management system
- Support QoS (Quality of Service) to prioritize the transmission of voice, video, and important data through network devices, addressing network congestion
- Support ACL (Access Control List) to filter TCP/UDP/ICMP/IGMP packets based on source/destination IP and MAC addresses
- Support 802.1X port authentication for user identity verification and access control
- Support DHCP server for centralized dynamic management and configuration of user IP addresses
- Support dual power supply redundancy, power failure relay alerts, and upper-level machine alerts, as well as port disconnection alerts on the upper-level machine

Technical Specifications

Software	
Switching	Support port configuration, port rate limiting, storm suppression, storm detection, port aggregation, LACP, and port statistics Support 802.1Q VLAN, VLAN based on

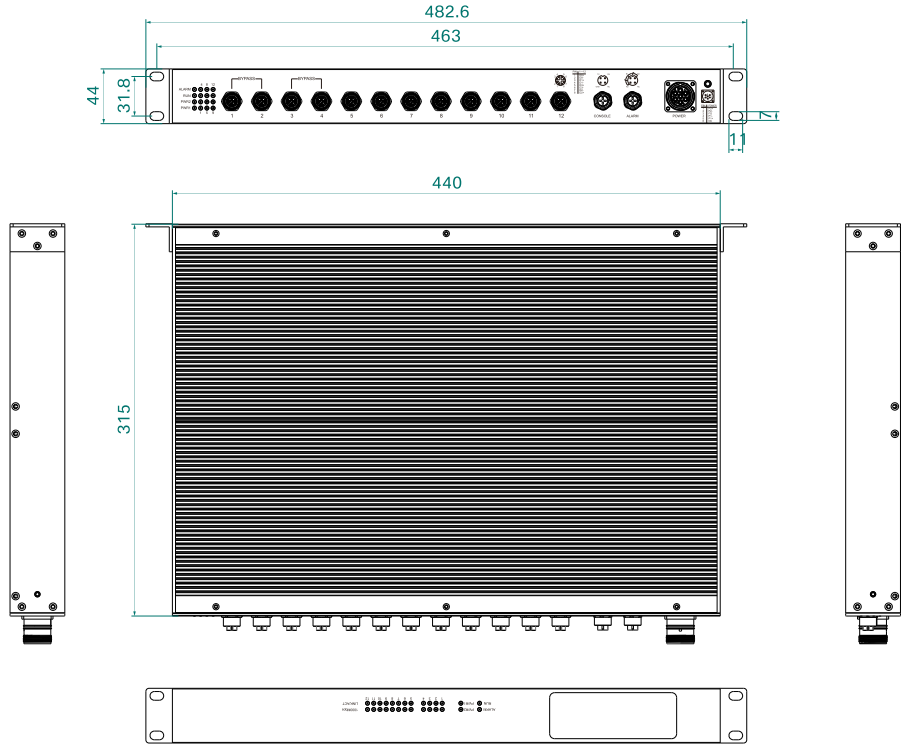
	port/MAC/protocol/subnet, GVRP, and port isolation Support MAC address aging and learning restrictions, static MAC address forwarding and filtering, and MAC address binding
Redundancy	Support MW-Ring proprietary ring network technology Support EAPS, ERPS Support MSTP, compatible with RSTP/STP Support MRP
Multicast	Support IGMP Snooping Support static multicasting and GMRP Support IGMPv1/v2/v3 Support PIM-DM and PIM-SM
Routing	Support static routing Support RIPv1/v2 and OSPF dynamic routing Support VRRP (Virtual Router Redundancy Protocol)
Security Management	Support HTTP, HTTPS, TELNET, and SSH access methods Support ACL (Access Control List) for filtering data at Layer 2 to 4 Support 802.1X port authentication and MAC address authentication Support loopback detection
Management and Maintenance	Support DHCP Server/Relay/Security/Snooping Support QoS, SNMPv1/v2c/v3, SNMPv1/v2c TRAP, LLDP, RMON Support port mirroring, Ping, Tracert Support user management with different permissions, system logs, local time synchronization, NTP client/server Support online reboot, factory reset, system upgrade, and configuration file upload/download Support MW-NMPv2 private network management interface protocol and MixView, MaxView upper-level computer management
Switch Capability	
Processing Type	Store-and-Forward

Backplane Bandwidth	56Gbps
Buffer Size	12Mbit
MAC Table Size	16K
LPM Routing Entries	512
Interface	
1G Copper Port	12 x 10/100/1000Base-T(X) auto-sensing copper ports, using M12 (X-Code 8-Pin Female) connectors, supporting full/half duplex, auto MDI/MDI-X. Support two sets of Bypass functions, where port 1 and port 2 form one set of Bypass, and port 3 and port 4 form another set of Bypass
Relay	1 x relay alarm output, using an M12 (A-Code 4-Pin Female) connector
CONSOLE	1 x Console port with RS232 signals, using an M12 (A-Code 4-Pin Female) connector, used for device debugging and command-line configuration
Status LED	Power indicator, operation indicator, alarm indicator, interface connection/activity indicator
Power Supply	
Input Voltage	DC18V~36V, DC36V~72V or DC50~160V is optional, dual input supporting power redundancy
Power Consumption	＜15W@DC110V(full load)
Connection	M23(A-Code 6-Pin Male) connector
Physical Characteristics	
Dimensions(L*W*H)	482.6 × 44 × 315 mm (excluding connectors, including mounting brackets)
Installations	Standard 19-inch 1U rack-mounted installation
IP Code	Aluminum alloy shell, IP40 protection rating
Weight	About 3kg
Working Environment	
Operating Temp	-40℃~+70℃

Storage Temp	-40℃~+85℃
Relative Humidity	5%~95% (non-condensing)
Industry Standard	
EMC	IEC 61000-4-2 (ESD): contact discharge ±8kV, air discharge ±15kV IEC 61000-4-5 (Surge): power, Ethernet: common mode ±2kV, differential mode ±2kV IEC 61000-4-4 (EFT): power supply: ±2kV; communication port: ±2kV

Dimensions

Unit: mm



Ordering Information

Standard Model	1G Copper Port	Input Voltage
CTS8012G-M12-12GT-DC24	12	DC18V~36V
CTS8012G-M12-12GT-DC48	12	DC36V~72V
CTS8012G-M12-12GT-DC110	12	DC50V~160V

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