

CTS7012G-M12-12GT

12-Port Layer 2 Gigabit Managed Rack Mount M12 Industrial Switch



- Support 12 x Gigabit copper ports with M12 connectors
- Two sets of Bypass functions can make the connections working even if power fails to ensure normal network operation
- Support ring network redundancy protocols such as MW-Ring, EAPS, ERPS, STP/RSTP/MSTP, enhancing network reliability
- Support multiple power input options, including DC24V, DC48V, DC110V
- High-strength aluminum alloy enclosure with an IP40 protection, fanless design for heat dissipation, the operating temperature from -40°C to +70°C

Product Description

CTS7012G-M12-12GT is a layer 2 full Gigabit managed rack-mount industrial Ethernet switch. It supports 12xGigabit copper ports with M12 connectors, meeting the requirements of the rail transportation industry standards to ensure tight and robust connections, suitable for scenarios with strong vibrations. The Gigabit copper ports support 2 sets of Bypass functions, which can be activated in case of power failure to bypass faulty nodes, preventing network interruptions and ensuring normal network operation.

This product uses a store-and-forward mechanism, offering powerful bandwidth processing capabilities, automatically detecting packet errors to reduce transmission failures, easily supporting Gigabit networking, and ensuring stable, reliable, and efficient data transmission. The product uses industrial-grade components, high-standard system design, and production control, featuring standard 19-inch 1U rack-mounted installation, a high-strength aluminum alloy enclosure for durability, efficient fanless cooling, and it can operate in a wide temperature range from -40°C to +70°C.

CTS7012G-M12-12GT complies with major communication standards in the industrial field, addressing issues like communication real-time performance and network security. The product provides various management methods for the switch, such as accessing the switch command line (CLI) through the CONSOLE port or TELNET/SSH protocol, accessing the switch's web interface through HTTP/HTTPS, and accessing device MIB via SNMP protocol. It also supports various network protocols and industry standards such as EAPS, ERPS, STP/RSTP/MSTP, VLAN, QoS, LACP, IGMP Snooping, GMRP, LLDP, 802.1X, ACL, SNTP, port mirroring, Ping, Tracert, etc..

Product Features

- Support broadcast, multicast, and unknown unicast storm suppression, and also support broadcast and multicast packet storm detection to prevent broadcast storms.
- Support both static link aggregation and dynamic link aggregation (LACP) to increase transmission bandwidth, improve link reliability, and achieve network load balancing.
- Support 802.1Q VLAN, providing Access, Trunk, and Hybrid interfaces for easy division of multiple broadcast domains, enhancing network security.
- Support VLAN segmentation based on port, MAC, protocol, IP subnet, and more, suitable for different network environments.
- Support GVRP protocol for dynamic distribution, registration, and propagation of VLAN properties, maintaining dynamic VLANs.
- Support MAC address table and aging time limits, static unicast/multicast MAC address binding to interfaces to ensure legitimate user usage.
- Support multicast protocols such as IGMP Snooping and GMRP to reduce multicast data broadcasting in the network, saving network resources.
- Support LLDP for obtaining LLDP neighbor device information, monitoring link status, and facilitating topology management and fault localization.
- Support ERPS (Ethernet Ring Protection Switching) for Ethernet multiple ring protection technology, providing multiple ring networking, link backup, rapid convergence, and improved network stability.
- Support EAPS (Ethernet Automatic Protection Switching) ring protection protocol and CS-Ringv2 private ring network protocol, enhancing system communication reliability.
- Support STP (Spanning Tree Protocol), RSTP (Rapid Spanning Tree Protocol), and MSTP (Multiple Spanning Tree Protocol) for generating tree protocols to eliminate network loops and enhance network reliability.
- Support network access through HTTP, HTTPS, TELNET, and SSH, with SSH providing secure remote login.
- Support SNMPv1/v2c/v3 for information querying, modification, and fault troubleshooting through the MIB network management system, enabling centralized management.
- Support QoS (Quality of Service) to prioritize voice, video, and critical data transmission in network devices, addressing network congestion.
- Support ACL (Access Control List) based on source/destination IP and MAC addresses to filter TCP/UDP/ICMP/IGMP and other packets.
- Support 802.1X port authentication for authenticating and controlling access permissions for connecting users

Technical Specifications

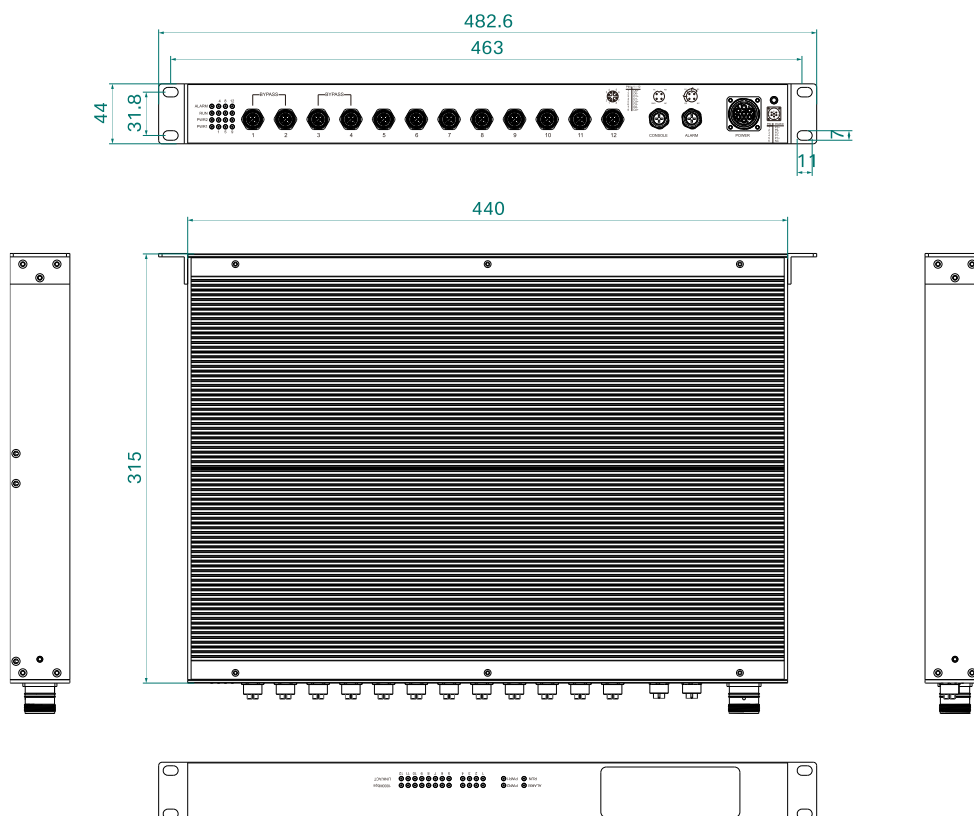
Software	
Switching	<p>Support port configuration, port rate limiting, storm suppression, storm detection, static port aggregation, and LACP</p> <p>Support 802.1Q VLAN, VLAN segmentation based on port/MAC/subnet/protocol, GVRP, and port isolation</p> <p>Support MAC address aging, static MAC address forwarding and filtering, and MAC address binding and learning restrictions</p>
Redundancy	<p>Support MW-RingV2 private ring network technology</p> <p>Support EAPS (Ethernet Automatic Protection Switching), and ERPS (Ethernet Ring Protection Switching)</p> <p>Support STP (Spanning Tree Protocol), RSTP (Rapid Spanning Tree Protocol), and MSTP (Multiple Spanning Tree Protocol)</p>
Multicast	<p>Support IGMP Snooping</p> <p>Support static multicast GMRP (GARP Multicast Registration Protocol)</p>
Security Management	<p>Support HTTP, HTTPS, TELNET, and SSH access methods</p> <p>Support ACL for filtering data at L2-L4 layers</p> <p>Support 802.1X port authentication and MAC address authentication</p> <p>Support loopback detection and alarms</p>
Management and Maintenance	<p>Support QoS, SNMP v1/v2c/v3, SNMPv1/v2c Traps, and LLDP</p> <p>Support port mirroring, Ping, and Tracert</p> <p>Support user privilege management, system logs, local time setting and synchronization, and SNTP network time synchronization</p> <p>Support online reboot, factory reset, system upgrades, and configuration file upload/download</p> <p>Support centralized management through upper-level software</p>
Switch Capability	
Processing Type	Store-and-Forward

Backplane Bandwidth	56Gbps
Buffer Size	12Mbit
MAC Table Size	16K
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-duplex/half-duplex and auto MDI/MDI-X. Additionally, it supports two sets of Bypass functions, where Port1 and Port2 form one set of Bypass, and Port3 and Port4 form another set of Bypass
Relay	1 relay alarm output port, using M12 (A-Code 4-Pin Female) connector
CONSOLE	1 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, Port indicator
Power Supply	
Input Voltage	DC18V~36V, DC36V~72V or DC50V~160V is optional
Power Consumption	< 15W@DC110V(full load)
Connection	M23(A-Code 6-Pin Male) connector
Physical Characteristics	
Dimensions (L*W*H / mm)	482.6 x 44 x 315 mm (mounting clips included)
Installations	Standard 19-inch 1U rack-mounted installation
IP Code	IP40
Working Environment	
Operating Temp	-40°C~+70°C
Storage Temp	-40°C~+85°C

Relative Humidity	5%~95% (non-condensing)
Industry Standard	
EMC	<p>IEC 61000-4-2 (ESD - Electrostatic Discharge): Contact Discharge $\pm 8\text{kV}$, Air Discharge $\pm 15\text{kV}$</p> <p>IEC 61000-4-5 (Surge): Power and Network Ports: Common Mode $\pm 2\text{kV}$, Differential Mode $\pm 2\text{kV}$</p> <p>IEC 61000-4-4 (EFT - Electrical Fast Transients): Power: $\pm 2\text{kV}$; Communication Port: $\pm 2\text{kV}$</p>
Certification	CE, FCC, RoHS

Dimensions

Unit: mm



Ordering Information

Standard Model	1G Copper Port	Input Voltage
CTS7012G-M12-12GT-DC24	12	DC18V~36V
CTS7012G-M12-12GT-DC48	12	DC36V~72V
CTS7012G-M12-12GT-DC110	12	DC50V~160V



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