

CTS8012G-M2-12GT

12-port Layer 3 Gigabit Managed Rack Mount M12 Industrial Ethernet Switch



- Support 12 x Gigabit Ethernet ports using M12 connectors
- Two sets of Bypass functions can be activated in case of device power loss to ensure uninterrupted network operation
- Support various network redundancy protocols such as MW-Ring, EAPS, ERPS, STP/RSTP/MSTP, enhancing network reliability
- Support static routing, RIPv1/v2, OSPF dynamic routing protocols, enabling route selection and packet forwarding
- Support multiple power input options, including DC24V, DC48V, DC110V
- Aluminum alloy enclosure, IP40 protection, fanless design, working temp from -40°C to +70°C

Product Description

CTS8012G-M12-12GT is a layer 3 full Gigabit managed rack-mount industrial Ethernet switch. It supports 12 x Gigabit copper ports using M12 connectors, meeting the requirements of the rail transportation industry standards, ensuring tight and secure connections suitable for environments with strong vibrations. The Gigabit Copper ports feature 2 sets of Bypass functions, which can be activated in case of a power loss to ensure uninterrupted network operation by bypassing faulty nodes and preventing network interruptions.

The switch is designed for standard 19-inch 1U rack-mounted installation and features a high-strength aluminum alloy enclosure. It is rugged and durable, with efficient fanless cooling. It can operate in a wide

temperature range from -40°C to +70°C and provides high-standard industrial protection, making it suitable

for various harsh working environments. CTS8012G-M12-12GT follows key communication standards in the industrial field, ensuring real-time communication and network security. It offers multiple management options, including accessing the switch's command line (CLI) through the CONSOLE port or via TELNET/SSH protocols, accessing the web interface through HTTP/HTTPS, and accessing device MIB through SNMP protocol. Additionally, it supports various network protocols and industry standards such as RIP, OSPF, VRRP, PIM, EAPS, ERPS, STP/RSTP/MSTP, VLAN, QoS, LACP, IGMP, IGMP Snooping, GMRP, LLDP, 802.1X, ACL, DHCP, SNTP, port mirroring, Ping, and Tracert. The switch also offers features like configuration file upload and download, online firmware upgrades, and other system management capabilities.

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 ERPS (Ethernet Ring Protection Switching) for Ethernet ring protection technology, providing ring networking, link backup, fast convergence, and improving network stability
- Support EAPS (Ethernet Automatic Protection Switching) and CS-RingV2 private ring network protocols, enhancing the reliability of system communication
- Support STP (Spanning Tree Protocol), RSTP (Rapid Spanning Tree Protocol), MSTP (Multiple Spanning Tree Protocol) to eliminate network loops and improve network reliability
- Support VRRP (Virtual Router Redundancy Protocol) to form a virtual router with multiple router devices for redundancy and backup
- Support IPv4 static route configuration, RIPv1/v2, OSPF dynamic routing protocols for routing selection and packet forwarding
- Support network access via HTTP, HTTPS, TELNET, SSH for secure remote login using SSH
- Support SNMPv1/v2c/v3 for information querying, modification, and troubleshooting through MIB (Management Information Base) network management system, enabling centralized management
- Support QoS (Quality of Service) to prioritize voice, video, and critical data transmission in network devices to resolve network congestion
- Support ACL (Access Control List) based on source/destination IP and MAC addresses to filter TCP/UDP/ICMP/IGMP packets
- Support 802.1X port authentication for user authentication and access control
- Support DHCPv4 server for centralized dynamic management and configuration of user IP addresses

Technical Specifications

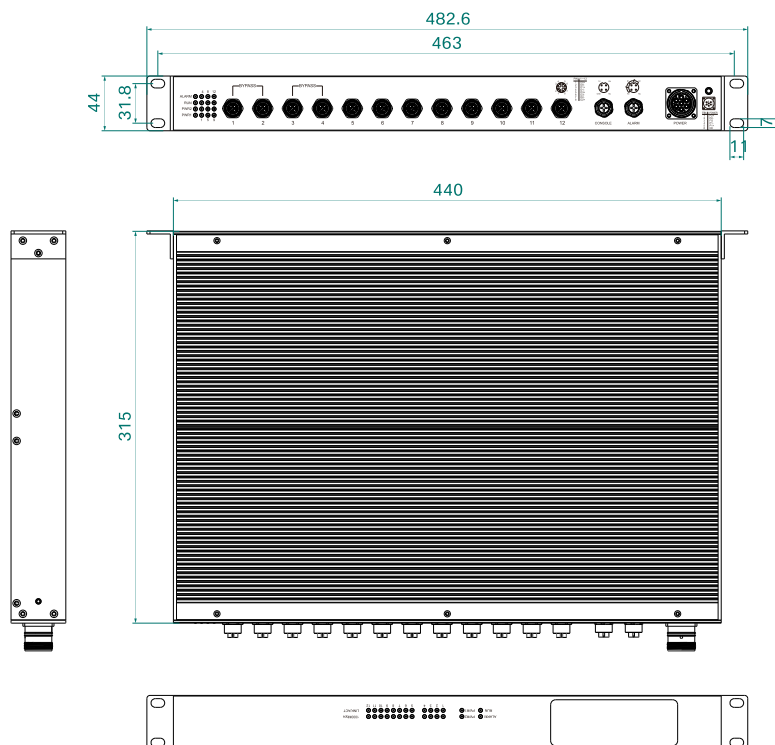
Software	
Switching	<p>Support port configuration, port rate limiting, storm suppression, storm detection, static port aggregation, and LACP</p> <p>Support 802.1Q VLAN, VLAN partitioning based on port/MAC/subnet/protocol, GVRP, and port isolation</p> <p>Support MAC address aging, static MAC address forwarding and filtering, and MAC address binding with learning restrictions</p>
Redundancy	<p>Support MW-RingV2 private ring network technology</p> <p>Support EAPS (Ethernet Automatic Protection Switching), ERPS (Ethernet Ring Protection Switching)</p> <p>Support STP (Spanning Tree Protocol), RSTP (Rapid Spanning Tree Protocol), MSTP (Multiple Spanning Tree Protocol)</p>
Multicast	<p>Support IGMPv1/v2/v3 and IGMP Snooping</p> <p>Support static multicast with GMRP</p> <p>Support PIM-DM (Protocol Independent Multicast - Dense Mode) and PIM-SM (Protocol Independent Multicast - Sparse Mode)</p>
Routing	<p>Support static routing</p> <p>Support RIPv1/v2 and OSPF dynamic routing</p> <p>Support VRRP (Virtual Router Redundancy Protocol)</p>
Security Management	<p>Support HTTP, HTTPS, TELNET, and SSH access methods</p> <p>Support ACL (Access Control List) for filtering data at Layer 2 to 4</p> <p>Support 802.1X port authentication and MAC address authentication.</p> <p>Support loopback detection and alarms</p>
Management and Maintenance	<p>Support DHCP Client/Server/Relay/Snooping</p> <p>Support QoS, SNMP v1/v2c/v3, SNMPv1/v2c Traps, and LLDP</p> <p>Support port mirroring, Ping, and Tracert</p> <p>Support user access control, system logs, local time setting synchronization, and SNTP network time synchronization</p> <p>Support online reboot, factory reset, system upgrade, and configuration file upload/download</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/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 relay alarm output, using an 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 DC50~160V is optional
Power Consumption	< 15W(full load)
Connection	M23(A-Code 6-Pin Male) connector
Physical Characteristics	
Dimensions(L*W*H)	482.6 × 44 × 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	IEC 61000-4-2 (ESD): contact discharge $\pm 8\text{kV}$, air discharge $\pm 15\text{kV}$ IEC 61000-4-5 (Surge): power, Ethernet: common mode $\pm 2\text{kV}$, differential mode $\pm 2\text{kV}$ IEC 61000-4-4 (EFT): power supply: $\pm 2\text{kV}$; communication port: $\pm 2\text{kV}$
Certification	CE, FCC, RoHS

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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