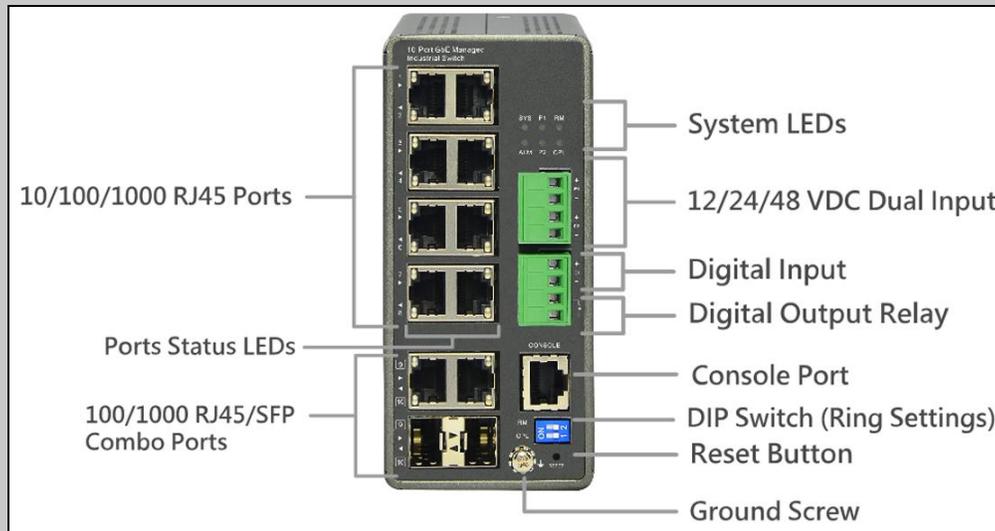


## HYC-TNS5310-C2 Industrial L2 Managed GbE Switch



### Overview

HYC-TNS5310-C2 Industrial L2 managed GbE switch is the next generation industrial grade Ethernet switch which offering powerful L2 and basic L3 features with better functionality and usability. In additional, the extensive management features and robust hardware design make this switch more suitable for industrial applications.

HYC-TNS5310-C2 delivers 8 RJ45 Ethernet ports (10/100/1000 Mbps), 2 Combo GbE RJ45/SFP ports and RJ45 console port. All these interfaces support high performance and environment flexibility for industrial applications.

The embedded Network Managed System with clear and simple well graphic design topology map, that provide users great benefits of easy-to-use / configure / install / troubleshoot in the video surveillance, wireless access, and other multiple applications. This industrial L2 managed GbE switch is ideal to deliver management simplicity, better user experience with best performance/cost ratio.

## Key Features

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- Rapid Ring (R-Ring)
- Built in Network Devices Management System with clear and simple well graphic design topology map.
- DHCP Server
- IEEE 802.3az Energy Efficient Ethernet standard for green Ethernet application
- IPv4/IPv6 L3 static route

## Benefits

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- **Feature-rich Specifications to Support Various Applications**

The switch delivers extensive industrial grade functionalities, including R-Ring. It also has enhanced L2/L3 features for better manageability and usability.

It offers users with better price/performance ratio in industrial application, and provides secure and reliable functionalities for metro Ethernet deployments.
- **Easy to Install, Configure and Troubleshoot by Network Devices Management System.**

The network devices management system provides embedded functions to facilitate devices management at anytime and anywhere. Its user-friendly interface helps users to manage devices intuitively.

It supports various IP device types (e.g. PC, IP-phone, IP-camera, WiFi-AP) for end users to enhance manageability and save time and cost during installation / maintenance stages.
- **Low Total Cost of Ownership (TCO) with Energy-efficient Design**

The switch is designed to help companies to save power needs and reduce TCO by Energy Efficient Ethernet (IEEE 802.3az). It can be used for customers to build a green Ethernet networking environment.

## Specifications

### Port Configuration

Total Ports	RJ45 (10M/100M/1G)	Uplinks (100M/1G)	Console	Ring Mgmt.	DI/DO
10	8	2 Combo	RJ45	DIP	1/1

### Hardware Performance

Forwarding Capacity (Mpps)	Switching Capacity (Gbps)	Mac Table (K)	Jumbo Frames (Bytes)
14.88	20	8	9216

### Environmental Range

Operating Temperature		Storage Temperature		Operating Humidity	Altitude	
Fahrenheit	Celsius	Fahrenheit	Celsius	5% to 95% non-condensing	Feet	Meters
-40 to 167	-40 to 75	-40 to 185	-40 to 85		< 10000	<3000

### Dimension, Weights, Mounting

Dimension (WxHxD)		Weight		Mounting Type
Millimeter	Inches	Kilograms	Pounds	
62x 135x 130	2.4x 5.3x 5.1	< 1	<2.2	DIN rail

### Voltage and Frequency

Primary Power Supply - DC Input Voltage	
DC Nominal	12/24/48 VDC dual inputs
DC Operating Range	9.6 to 57 VDC

### Certifications

Regulatory Compliance	
EMS	EN61000-4-2 ESD, EN61000-4-3 RS, EN61000-4-4 EFT, EN61000-4-5 Surge, EN61000-4-6 CS, EN61000-4-8 PFMF
EMI	FCC Part 15 Class A
Safety	CE
Mechanical Stability	
Vibration	IEC 60068-2-6
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32

## Software Features

Ring Management	
Rapid Ring	Enable self-recover time in less than 20ms
Device Embedded Management System (DEMS)	
Graphical Monitoring	<ul style="list-style-type: none"> <li>• Topology view: Support intuitive way to configure and manage switches and devices with visual relations</li> <li>• Floor view: It's easy to drag and drop PoE devices and help you to build smart workforces</li> <li>• Map view: Enhance efficiency to drag and drop devices and monitor surroundings on google map</li> </ul>
Find my Switch	Search and manage your real switches quickly.
Traffic Monitoring	Display visual chart of network traffic of all devices and monitor every port at any time from switches
Trouble Shooting	<ul style="list-style-type: none"> <li>• Network diagnostic between master switch and devices</li> <li>• Support protection mechanism, such as rate-limiting to protect your devices from brute-force downloading</li> </ul>
Layer 2 Switching	
Spanning Tree Protocol (STP)	<ul style="list-style-type: none"> <li>• Standard Spanning Tree 802.1d</li> <li>• Rapid Spanning Tree (RSTP) 802.1w</li> <li>• Multiple Spanning Tree (MSTP) 802.1s</li> </ul>
Trunking	<ul style="list-style-type: none"> <li>• Link Aggregation Control Protocol (LACP) IEEE 802.3ad</li> <li>• Up to 5 groups and up to 4 ports per group</li> </ul>
VLAN	<ul style="list-style-type: none"> <li>• Port-based VLAN</li> <li>• 802.1Q tag-based VLAN</li> <li>• MAC-based VLAN</li> <li>• Management VLAN</li> <li>• Private VLAN Edge (PVE)</li> <li>• Q-in-Q (double tag) VLAN</li> <li>• Voice VLAN</li> <li>• GARP VLAN Registration Protocol (GVRP)</li> </ul>
DHCP Relay	<ul style="list-style-type: none"> <li>• Relay of DHCP traffic to DHCP server in different VLAN.</li> <li>• Works with DHCP Option 82</li> </ul>
IGMP v1/v2/v3 Snooping	IGMP limits bandwidth-intensive multicast traffic to only the requesters. Supports 1024 multicast groups
IGMP Querier	IGMP querier is used to support a Layer 2 multicast domain of snooping switches in the absence of a multicast router
IGMP Proxy	IGMP snooping with proxy reporting or report suppression actively filters IGMP packets in order to reduce load on the multicast router
MLD v1/v2 Snooping	Delivers IPv6 multicast packets only to the required receivers
Multicast VLAN Registration (MVR)	It uses a dedicated manually configured VLAN, called the multicast VLAN, to forward multicast traffic over Layer 2 network in conjunction with IGMP snooping.
Layer 3 Switching	

IPv4 Static Routing	IPv4 Unicast: Static routing
IPv6 Static Routing	IPv6 Unicast: Static routing
<b>Security</b>	
Secure Shell (SSH)	SSH secures Telnet traffic in or out of the switch, SSH v1 and v2 are supported
Secure Sockets Layer (SSL)	SSL encrypts the http traffic, allowing advanced secure access to the browser-based management GUI in the switch
IEEE 802.1X	<ul style="list-style-type: none"> <li>• IEEE802.1X: RADIUS authentication, authorization and accounting, MD5 hash, guest VLAN, single/multiple host mode and single/multiple sessions</li> <li>• Supports IGMP-RADIUS based 802.1X</li> <li>• Dynamic VLAN assignment</li> </ul>
Layer 2 Isolation Private VLAN Edge	PVE (also known as protected ports) provides L2 isolation between clients in the same VLAN. Supports multiple uplinks
Port Security	Locks MAC addresses to ports, and limits the number of learned MAC address
IP Source Guard	Prevents illegal IP address from accessing to specific port in the switch
RADIUS/ TACACS+	Supports RADIUS and TACACS+ authentication. Switch as a client
Storm Control	Prevents traffic on a LAN from being disrupted by a broadcast, multicast, or unicast storm on a port
DHCP Snooping	A feature acts as a firewall between untrusted hosts and trusted DHCP servers
ACLs	Supports up to 256 entries. Drop or rate limitation based on: <ul style="list-style-type: none"> <li>• Source and destination MAC, VLAN ID or IP address, protocol, port,</li> <li>• Differentiated services code point (DSCP) / IP precedence</li> <li>• TCP/ UDP source and destination ports</li> <li>• 802.1p priority</li> <li>• Ethernet type</li> <li>• Internet Control Message Protocol (ICMP) packets</li> <li>• TCP flag</li> </ul>
Loop Protection	To prevent unknown unicast, broadcast and multicast loops in Layer 2 switching configurations.
<b>Quality of Service</b>	
Hardware Queue	Supports 8 hardware queues
Scheduling	<ul style="list-style-type: none"> <li>• Strict priority and weighted round-robin (WRR)</li> <li>• Queue assignment based on DSCP and class of service</li> </ul>
Classification	<ul style="list-style-type: none"> <li>• Port based</li> <li>• 802.1p VLAN priority based</li> <li>• IPv4/IPv6 precedence / DSCP based</li> <li>• Differentiated Services (DiffServ)</li> <li>• Classification and re-marking ACLs</li> </ul>
Rate Limiting	<ul style="list-style-type: none"> <li>• Ingress policer</li> <li>• Egress shaping and rate control</li> <li>• Per port</li> </ul>

Management	
HW Monitoring	Temperature Detection and Alarm
HW Watchdog	Supported to resume operation from CPU hang up
iPush	<ul style="list-style-type: none"> <li>• The real time alarm notification could lower technical support cost</li> <li>• Works with iOS and Android devices to make quick work of even the most demanding tasks.</li> </ul>
DHCP Server	Support DHCP server to assign IP to DHCP clients
Remote Monitoring (RMON)	Embedded RMON agent supports RMON groups 1,2,3,9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring and analysis
Port Mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to N-1 (N is Switch's Ports) ports can be mirrored to single destination port. A single session is supported.
UPnP	The Universal Plug and Play Forum, an industry group of companies working to enable device-to-device interoperability by promoting Universal Plug and Play
s-Flow	The industry standard for monitoring high speed switched networks. It gives complete visibility into the use of networks enabling performance optimization, accounting/billing for usage, and defense against security threats
IEEE 802.1ab (LLDP)	<ul style="list-style-type: none"> <li>• Used by network devices for advertising their identities, capabilities, and neighbors on an IEEE 802ab local area network</li> <li>• Support LLDP-MED extensions</li> </ul>
Web GUI Interface	Built-in switch configuration utility for browser-based device configuration
CLI	For users to configure/manage switches in command line modes
Dual Image	Independent primary and secondary images for backup while upgrading
SNMP	SNMP version1, 2c and 3 with support for traps, and SNMP version 3 user-based security model (USM)
Firmware Upgrade	<ul style="list-style-type: none"> <li>• Web browser upgrade (HTTP/ HTTPs) and TFTP</li> <li>• Upgrade through console port as well</li> </ul>
NTP	Network Time Protocol (NTP) is a networking protocol for clock synchronization between computer systems over packet-switched
Other Management	<ul style="list-style-type: none"> <li>• HTTP/HTTPs; SSH</li> <li>• DHCP Client/ DHCPv6 Client</li> <li>• Cable Diagnostics</li> <li>• Ping</li> <li>• Syslog</li> <li>• IPv6 Management</li> </ul>