Rugged Switch with High Resilience



DS310

Industrial 8+2G L2 Managed Ethernet Switch

DS310 is an industrial L2 managed Ethernet switch equipped with 8 Fast Ethernet ports and 2 RJ45/SFP Gigabit Ethernet combo ports for uplink connection; prioritized stream such as video and VoIP are also optimized.
For the best traffic control, management side features LACP, VLAN, QinQ, IGMP snooping, QoS, and ITU-T G.8032 v1/v2 ERPS redundancy.

FC CE ERPS G.8032v2 IEC61000-6-2 IEC61000-6-4 EN50121-4

Features & Benefits

High Throughput Ethernet Switching

- 10-port Ethernet, including 8-port Fast Ethernet and 2-port **RJ45/SFP Combo**
- Combo ports provide high flexibility of cable types and distances
- DDM function for high quality fiber connectivity monitoring
- **8K** MAC address table
- Stores and Forwards with non-blocking Switch Fabric

Management Features

- Various configuration paths, including WebGUI, CLI, Telnet, SNMPv1/v2c/v3 and RMON
- IEEE 1588v1 PTP time management
- LLDP topology control
- USB for easy field side configuration and firmware update
- Software utility interface for LAN devices management
- NMS system for individual component monitoring

ITU-T G.8032 v1/v2 ERPS Ring Redundancy

- An ITU standard Ring redundancy Protocol
- Provides sub-50ms protection and recovery switching for Ethernet traffic
- Interoperates with 3rd party industrial switch and still remains fast recovery time
- Interoperates with commercial switch instead of STP/RSTP
- Efficient network interconnection and topology with ERPS Chain, multiple chains

Enhanced Cyber Security for Critical Applications

- **802.1X/RADIUS** port-based access control
- Port MAC secure learning
- Private VLAN/IP Security/Port Security
- HTTPs/SSH/ Management IP secure access

Rugged Design for IP Surveillance

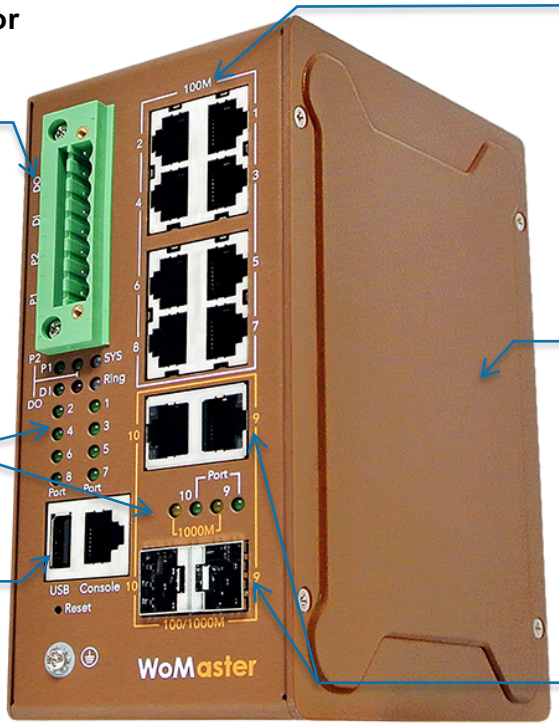
- Robust design protects from mechanical deformation
- Ribbed side panels for effective heat dissipation
- Wide operating temperature range **-40~75°C**
- IEC 61000-6-2/4 Heavy Industrial Environment
- EN50121-4 railway trackside EMC

Interfaces

Integrated Power Connector
- 1 x 8-pin terminal block
  4 pin for redundant power input
  2 pin DI
  2 pin DO
- Easy installation

System LED
- 2 x Power
- 1 x System Status
- 1 x DO
- 1 x DI
- 1 x Ring Status
- 8 x Ethernet Port
- 2 x SFP Port
- 2 x SFP 1000M

Easy System Management
- USB for Configuration/Firmware update
- RS232 console



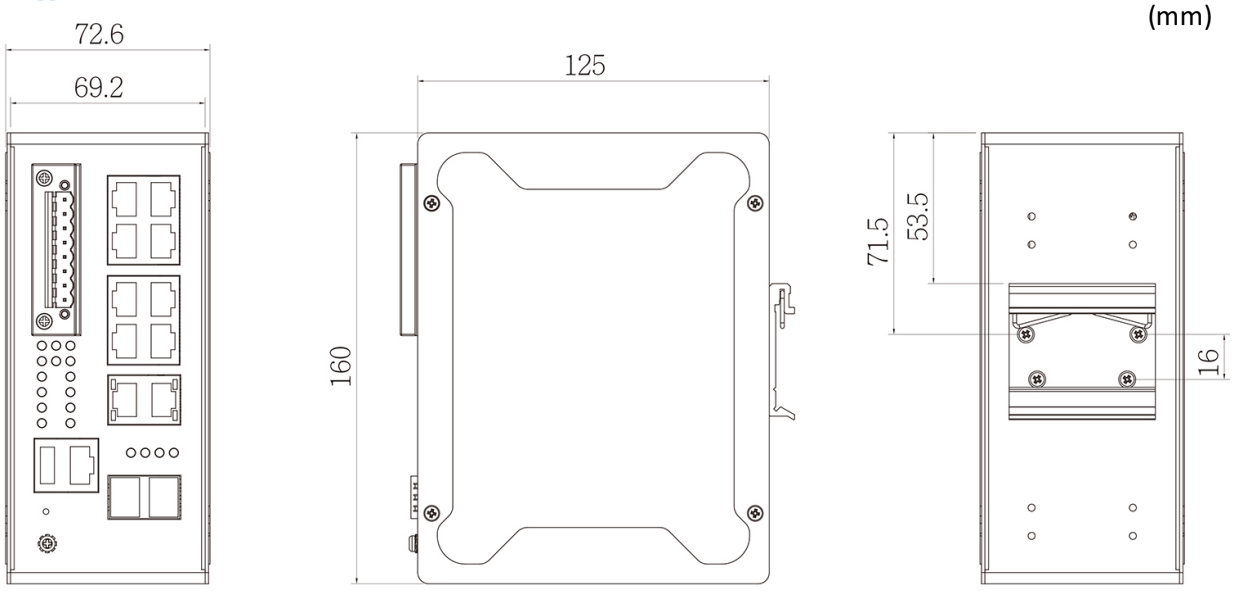
8-port 10/100MBase-TX

DIN Clip

Dual Gigabit Uplink
- 2-port 100/1000M RJ45/SFP combo

Dimensions

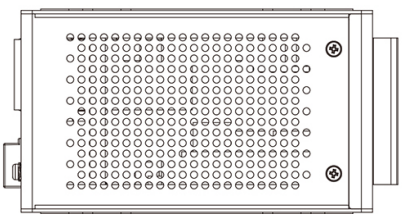
(mm)



Top



Bottom



Specifications

Technology	
Standard	IEEE 802.3 10Base-T Ethernet
	IEEE 802.3u 100Base-TX Fast Ethernet
	IEEE 802.3u 100Base-FX Fast Ethernet Fiber
	IEEE 802.3ab 1000Base-T Gigabit Ethernet copper
	IEEE 802.3z Gigabit Ethernet Fiber
	IEEE 802.3x Flow Control and back-pressure
	IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
	IEEE 802.1p Class of Service (CoS)
	IEEE 802.1Q VLAN and GVRP
	ITU-T G.8032 Ethernet ring protection switching (ERPS)
	IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP)
	IEEE 802.1Q-2005 Multiple Spanning Tree Protocol (MSTP)
	IEEE 802.3ad Link Aggregation Control Protocol (LACP)
	IEEE 802.1x Port based Network Access Protocol
	IEEE 1588 Precision Time Protocol v1
Performance	
Switch Technology	Store and Forward Technology with Non-Blocking Switch Fabric
Number of MAC Address	8K
Packet Buffer Memory	1M bits
Transfer performance	10Base-T: 14,880pps, 100Base-TX/FX: 148,800pps, 1000Base-TX/FX: 1,488,100pps
VLAN	256 VLANs
VLAN ID	1~4094
Class of Service	4 Priority Queues per Port
Watchdog	Hardware-based 10 seconds timer
Interface	
Ethernet Port	8 x 10/100BaseTX RJ45, Auto Negotiation 2 x 100/1000M RJ45/SFP Combo, Auto Negotiation/DDM
System LED	2 x Power: Green 1 x System Status: Ready: Green On, Firmware Updating: Green Blinking 1 x DO: Red On 1 x DI : Green On 1 x Ring: Off: Ring disabled, Green On: Ring normal (Not RPL Owner), Green Blinking: Ring normal (RPL Owner), Amber On: Ring abnormal, Amber Blinking: Ring port fail 8 x Ethernet Port: Link (Green On), Activity (Green Blinking) 2 x SFP Port: Link (Green On), Activity (Green Blinking) 2 x SFP 1000M: Speed 1000M (Amber On), Speed 100M (Off)
Ethernet Port LED	Port: Link (Green On), Activity (Green Blinking) 1000M: Speed 1000M (Amber On) Speed 100M (Off)
Reset	System Reboot(2-6 Seconds)/Default Settings Reset(over 7 Seconds)
Console	1 x RS232 for System Configuration. Baud Rate: 9600.n.8.1
USB	1 x USB for Configuration/Firmware Update

Power Input, Digital Input, Digital Output	8-Pin Removable Terminal Block Connector 4 Pins for Redundant Power 4 Pins for DI, DO (Relay Alarm) Digital Output: Dry Relay Output with 0.5A /24V DC Digital Input with Photo-Coupler Isolation Digital High: DC 11V~30V Digital Low: DC 0V~10V
Power Requirement	
Input Voltage	24/48VDC(18~60VDC)
Reverse Polarity Protect	Yes
Input Current	0.15A@48V
Power Consumption	Max 7.2W@48VDC full traffic, suggest to reserve 15% tolerance
Software	
Management Interface	CGI WebGUI, Command Line Interface (CLI), Telnet, SNMP
Time Management	NTP, IEEE 1588 Precision Time Protocol v1
Network Management	IPv4/IPv6, SNMP v1/v2c/v3/Trap, MIBs, RMON, LLDP, DHCP server/client/Option 82, TFTP, System Log, SMTP
Traffic Management	Flow Control, Port Trunk/802.3ad LACP, VLAN, Private VLAN, GVRP, GMRP, QinQ, Class of Service, Traffic Prioritize, IGMP Snooping v1/v2/v3, Rate Control, Port Mirror
Security	IEEE 802.1X/RADIUS, Port MAC Secure Learning, Management IP, Management VLAN, SSH, SSL
Redundancy	Rapid Spanning Tree Protocol (RSTP)/Multiple Spanning Tree Protocol (MSTP) ITU-T G.8032 v1/v2 Ethernet Ring Protection Switching (ERPS)
Mechanical	
Installation	DIN Rail
Enclosure Material	Steel Metal with Aluminum
Dimension	82.2 x 160 x 125 mm (W x H x D) / without DIN Rail Clip
Ingress Protection	IP31
Weight	1.4KG (device) / 1.8KG (full package)
Package	240(W)x200(L)x130(H)mm (package) 16pcs / carton 410(W)x 550(L)x490(H)mm (1.5KG)
Environmental	
Operating Temperature & Humidity	-40°C~75°C , 0%~95% Non- Condensing
Storage Temperature	-40°C~85°C
Hi-Pot Insulation	AC1.5KV
MTBF	>200,000 hours
Warranty	5 years

Standard	
Safety	EN60950-1 Compliant
EMC	EN61000-6-2/EN61000-6-4
EMI	CISPR 22, FCC part 15B Class A
EMS	EN61000-4-2 ESD: 8KV(Air), 6KV(Contact) EN61000-4-3 RS: 20V/m(80M~1GHz), 10V/m(1.4G~2.1GHz), 5V/m(2.1G~2.5GHz) EN61000-4-4 EFT: 2KV (Power, Signal Port, GND) EN61000-4-5 Surge: Power: 2KV/1KV(Line to Ground/Line to Line), Signal Port: 2KV(Line to Ground) EN61000-4-6 CS: 10Vrms(Power, Signal Port) EN61000-4-8 Magnetic Field: 30A/m continues/300A for 1~3s
Railway	EN50121-4

Ordering Information

Model Name	Description
DS310	Industrial 8+2G L2 Managed Ethernet Switch
	Package List
	1 x Product Unit (Without SFP transceiver)
	1 x 8-pin Removable Terminal Connector
	1 x Attached Din Clip
	1 x Quick Installation Guide

Optional Accessory

Item	
MK-D1-2	Wall-mounting kit with 2 plates and 8 screws
CBL-RJ45F9-1.5M	Serial RS232 console cable RJ45 to DB9 Female 1.5Meter
PSD60-48	60W/48VDC DIN-rail power supply
SFPGEM05	SFP, 1000Mbps, LC, multi, 550M, 0~70°C
SFPGEM05T	SFP, 1000Mbps, LC, multi, 550M, -40~85°C
SFPGEM05D	SFP, 1000Mbps, LC, multi, DDM, 550M, 0~70°C
SFPGEM05DT	SFP, 1000Mbps, LC, multi, DDM, 550M, -40~85°C
SFPGEM2	SFP, 1000Mbps, LC, multi, 2KM, 0~70°C
SFPGEM2T	SFP, 1000Mbps, LC, multi, 2KM, -40~85°C
SFPGEM2D	SFP, 1000Mbps, LC, multi, DDM, 2KM, 0~70°C
SFPGEM2DT	SFP, 1000Mbps, LC, multi, DDM, 2KM, -40~85°C
SFPGES10	SFP, 1000Mbps, LC, single, 10KM, 0~70°C
SFPGES10T	SFP, 1000Mbps, LC, single, 10KM, -40~85°C
SFPGES10D	SFP, 1000Mbps, LC, single, DDM, 10KM, 0~70°C
SFPGES30	SFP, 1000Mbps, LC, single, 30KM, 0~70°C
SFPGES30T	SFP, 1000Mbps, LC, single, 30KM, -40~85°C
SFPGES30D	SFP, 1000Mbps, LC, single, DDM, 30KM, 0~70°C
SFPXGM03D	SFP+, 10Gbps, LC, multi, DDM, 300M, 0~70°C
SFPXGS10D	SFP+, 10Gbps, LC, single, DDM, 10KM, 0~70°C
SFPGES10-A	SFP, 1000Mbps, LC, single, 10KM, BiDi TX-1310nm RX-1550nm, 0~70°C
SFPGES10-B	SFP, 1000Mbps, LC, single, 10KM, BiDi TX-1550nm RX-1310nm, 0~70°C
SFPGES10T-A	SFP, 1000Mbps, LC, single, 10KM, BiDi TX-1310nm RX-1550nm, -40~85°C
SFPGES10T-B	SFP, 1000Mbps, LC, single, 10KM, BiDi TX-1550nm RX-1310nm, -40~85°C
SFPGES10D-A	SFP, 1000Mbps, LC, single, DDM, 10KM, BiDi TX-1310nm RX-1550nm, 0~70°C
SFPGES10D-B	SFP, 1000Mbps, LC, single, DDM, 10KM, BiDi TX-1550nm RX-1310nm, 0~70°C

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