

Rugged Rackmount Switch for Control Room

RS328

Industrial 24+4G L2+ Rackmount Managed Ethernet Switch

The industrial designed rackmount switch RS328 is equipped with 24+4G combo ports for control room applications that require high product reliability and longevity. The wide operation temperature from -40C to 75C degrees allows applications under severe environment, such as oil and gas, railway, highway, or unmanned control rooms. It is compliant to railway EN50121-4 and NEMA TS2, as the best industrial solutions for rackmount managed switch.



Features & Benefits

High Throughput Ethernet Switching

- 28-port Ethernet, including 24-port Fast Ethernet and 4-port GbE **RJ45/SFP Combo**
- Combo ports provide high flexibility of cable types and distances
- DDM function for high quality fiber connectivity monitoring
- **16K** MAC address table
- 1.5MBytes packet buffer
- Stores and Forwards with non-blocking Switch Fabric

Management Features

- Various configuration paths, including CGI WebGUI, CLI, SNMP and RMON
- IEEE **1588v1/v2 PTP** time management
- LLDP topology control
- USB for easy field configuration and firmware update
- Software utility interface for LAN devices management

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 Wayside Network Switching with Wide Power Input Range

- **NEMA-TS2** compliance for wayside traffic control assemblies
- Excellent heat dissipation design for operating in **-40~75°C** environments
- High level **EMC protection** exceeding traffic control and heavy industrial standards' requirements

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)
	RFC 2460 Internet Protocol, Version 6 (IPv6)
	IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP)
	IEEE 802.1S 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/v2	
Performance	
Switch Technology	Store and Forward Technology with Non-Blocking Switch Fabric
Number of MAC Address	16K
Packet Buffer Memory	1.5Mbytes
Transfer performance	10Base-T: 14,880pps, 100Base-TX/FX: 148,800pps, 1000Base-TX/FX: 1,488,100pps
VLAN	256 VLANs
VLAN ID	1~4094
Traffic Prioritize	8 Priority Queues per Port
Watchdog	Hardware-based 10 seconds timer
Interface	
Ethernet Port	24 x 10/100Base-T RJ45, Auto Negotiation 4 x 100/1000M RJ45/SFP Combo, Auto Negotiation/DDM
System LED	2 x Power: Green On 1 x System Status: Ready: Green On, Firmware Updating: Green Blinking 1 x DO: Red On 1 x Ring Status: Normal (Green On), Wrong Port (Green Blinking), Abnormal (Amber On), Port Fail (Amber Blinking)
10M/100M Ethernet Port LED	Link (Green On), Activity (Green Blinking), Duplex (Amber On)
Giga Ethernet Port LED	Link (Green On), Activity (Green Blinking), Speed 1000M(Amber On), Speed 10M/100M (Amber Off)
Giga SFP LED	Port: Link (Green On), Activity (Green Blinking)
Console	1 x RJ45 RS232 for System Configuration. Baud Rate: 9600.n.8.1
USB	1 x USB for Configuration/Firmware Update
Digital Output (AC model)	1x Digital Output: Dry Relay Output with 1A@24V DC

Power Requirement	
Operating Voltage	AC110/220 (90-264VAC)
Software	
Management Interface	CGI WebGUI, Command Line Interface (CLI), Telnet, SNMP
Time Management	NTP, IEEE 1588 Precision Time Protocol v1/v2
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 Ethernet Ring Protection Switching (ERPS)
Mechanical	
Installation	Rackmount
Enclosure Material	Steel Metal
Dimension	438mm x 44mm x 170mm (W x H x D)
Ingress Protection	IP30
Weight	2.7KG (full package)
Environmental	
Operating Temperature & Humidity	-40°C~75°C , 0%~95% Non- Condensing
Storage Temperature	-40°C~85°C
MTBF	>230,000 hours
Warranty	5 years
Standard	
Safety	UL60950-1 Compliance
Traffic Control	NEMA TS2 Compliance
Railway	EN50121-4 Compliance
EMI	CISPR 22, FCC part 15B Class A
NEMS TS2/EN50121-4 EMC Level	IEC61000-4-2 ESD: 8KV(Air), 4KV(Contact) IEC61000-4-3 RS: 10V/m(80M~1GHz), 10V/m(1.4G~2.1GHz), 10V/m(2.1G~2.5GHz) IEC61000-4-4 EFT: 2KV (Power), 1KV (Signal Port,) IEC61000-4-5 Surge: Power: 2KV/1KV(Line to Ground/Line to Line), Signal Port: 1KV(Line to Ground) IEC61000-4-6 CS: 10Vrms(Power, Signal Port)



Ordering Information

Model Name	Description
RS328	Industrial 24+4G L2+ Managed Ethernet Switch
	Package List
	1 x Product Unit (Without SFP Transceiver)
	1 x Power Cord
	1 x Console Cable
	1 x Quick Installation Guide



Optional Accessory

Item	
SFP-2111-10	SFP, 1000Mbps, LC, single, DDM, 10KM, 0~70°C
SFP-2111-10-A	SFP, 1000Mbps, LC, single, DDM, 10KM, BiDi TX-1310nm RX-1550nm, 0~70°C
SFP-2111-10-AT	SFP, 1000Mbps, LC, single, DDM, 10KM, BiDi TX-1310nm RX-1550nm, -40~85°C
SFP-2111-10-B	SFP, 1000Mbps, LC, single, DDM, 10KM, BiDi TX-1550nm RX-1310nm, 0~70°C
SFP-2111-10-BT	SFP, 1000Mbps, LC, single, DDM, 10KM, BiDi TX-1550nm RX-1310nm, -40~85°C
SFP-2111-30	SFP, 1000Mbps, LC, single, DDM, 30KM, 0~70°C
SFP-2112-10	SFP, 1000Mbps, LC, single, 10KM, 0~70°C
SFP-2112-10-A	SFP, 1000Mbps, LC, single, 10KM, BiDi TX-1310nm RX-1550nm, 0~70°C
SFP-2112-10-AT	SFP, 1000Mbps, LC, single, 10KM, BiDi TX-1310nm RX-1550nm, -40~85°C
SFP-2112-10-B	SFP, 1000Mbps, LC, single, 10KM, BiDi TX-1550nm RX-1310nm, 0~70°C
SFP-2112-10-BT	SFP, 1000Mbps, LC, single, 10KM, BiDi TX-1550nm RX-1310nm, -40~85°C
SFP-2112-10-T	SFP, 1000Mbps, LC, single, 10KM, -40~85°C
SFP-2112-30	SFP, 1000Mbps, LC, single, 30KM, 0~70°C
SFP-2112-30-T	SFP, 1000Mbps, LC, single, 30KM, -40~85°C
SFP-2121-2	SFP, 1000Mbps, LC, multi, DDM, 2KM, 0~70°C
SFP-2121-2-T	SFP, 1000Mbps, LC, multi, DDM, 2KM, -40~85°C
SFP-2121-550M	SFP, 1000Mbps, LC, multi, DDM, 550M, 0~70°C
SFP-2121-550M-T	SFP, 1000Mbps, LC, multi, DDM, 550M, -40~85°C
SFP-2122-2	SFP, 1000Mbps, LC, multi, 2KM, 0~70°C
SFP-2122-2-T	SFP, 1000Mbps, LC, multi, 2KM, -40~85°C
SFP-2122-550M	SFP, 1000Mbps, LC, multi, 550M, 0~70°C
SFP-2122-550M-T	SFP, 1000Mbps, LC, multi, 550M, -40~85°C