Rackmount 28G Switch for Power Substation

RS428

Industrial 28G L2+ Rackmount Managed Ethernet Switch

RS428 is a power substation compliant rackmount 28G switch with 16 Giga copper ports, 8 Giga combo ports, and 4 Giga fiber ports. Up to 12 fiber Giga ports help to link more field switches with long distance fiber connections. The 28 full giga ports enhance the overall throughput for video surveillance applications. Rugged design and high EMC immunity makes RS428 an ideal solution for power substation applications.

IEC61000-6-2
IEC61000-6-4
IEC61850-3
IEEE1613
EN50121-4
LISTED
IPv6

Features & Benefits

High Throughput Ethernet Switching

- **28-port Full GbE**, by **16-port GbE RJ45 and 8-port GbE RJ45/SFP Combo, and 4 GbE SFP fiber ports.**
- Up to **12 GbE fiber ports** add more fiber links to field switches
- DDM function for high quality fiber connectivity monitoring
- **16K** MAC address table
- **1.5Mbytes** Packet Buffer

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

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

Rugged Design for Wayside Network Switching with Wide Power Input Range

- **IEC61850-3/IEEE1613** compliance for power substation applications
- Excellent heat dissipation design for operating in **-40~75ºC** environments
- High level EMC protection exceeding traffic control and heavy industrial standards' requirements
- IEC 61000-6-2/4 Heavy Industrial Environment
- EN50121-4 railway trackside EMC

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
	RFC 2460 Internet Protocol, Version 6 (IPv6)
	ITU-T G.8032 Ethernet ring protection switching(ERPS)
	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	16 x 100/1000M RJ45, Auto Negotiation 8 x 100/1000M RJ45/SFP Combo, Auto Negotiation 4 x 1000M SFP, DDM
System LED	4 x Power: Green On 1 x System Status: Ready: Green On, Firmware Updating: Green Blinking 1 x Alarm: Red On 1 x Ring Status: Normal (Green On), Wrong Port (Green Blinking), Abnormal (Amber On), Port Fail (Amber Blinking)
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 based RS232 for System Configuration. Baud Rate: 115200.n.8.1
USB	1 x USB for Configuration/Firmware Update
Digital Output (Alarm)	1x Digital Output: Dry Relay Output with 1A /24V DC

Power Requirement	
Operating Voltage	Power 1: AC110/220V (90-264VAC), 88~300VDC Power 2: DC24V (18-36VDC)
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	431 x 44 x 375 mm(W x H x D)
Ingress Protection	IP40
Weight	4.5KG (full package)
Environmental	
Operating Temperature & Humidity	-40°C~75°C , 0%~95% Non- Condensing
Storage Temperature	-40°C~85°C
MTBF	>445,000 hours
Warranty	5 years
Standard	
Safety	UL60950-1 Compliance
Railway	EN50121-4 Compliance
Power Substations	IEC61850-3, IEEE1613 Compliance
EMI	CISPR 22, FCC part 15B Class A
IEC61850-3/IEEE1613 EMC Level	IEC61000-4-2 ESD: 15KV(Air), 8KV(Contact) IEC61000-4-3 RS: 20V/m(80M~1GHz) IEC61000-4-4 EFT: 4KV(Power), 2KV(Signal Port, GND) IEC61000-4-5 Surge: Power: 4KV(Line to Ground/Line to Line), Signal Port: 4KV(Line to Ground/Line to Line) IEC61000-4-6 CS: 10Vrms(Power, Signal Port) IEC61000-4-8 Magnetic Field: 100A/m continues /1000A for 1~3s

Ordering Information

Model Name	Description
RS428	Industrial 28G 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	
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