# Overview

**The RS-IS-310 Series Industrial Gigabit Managed Switches are designed specifically to withstand wide temperature range, vibrations and shock.**

The Rubisec RS-310-10GP model are the highly reliable managed industrial PoE switches with 8-port 10/100/1000-T PoE and 2-port 1000/2500Base-X fiber optical interfaces. They comply with IEEE802.3af, IEEE802.3at standard PoE protocol, the Max power consumption can reach 30W (PoE+) per port.They support ERPS redundant network and the self-recovery mechanism is less than 20ms on full load which allows you to scheme a reliable Ethernet network by building a redundant ring topology as your back-up solution. Rubisec RS-310-10GP model also support alarm DO and robust layer 2 management function, which can fulfill the special needs of industrial automation applications.

Rubisec RS-310-10GP modelare the high cost-effective easy-to-use devices, which provide essential industrial Ethernet networking function, including wide range power input 44-57VDC, redundant power design with polarity reverse protection, robust IP40 fan-less housing with Din-rail installation, wide operation temperature from -40°C to 80°C as well as high-level EMI/EMC capability. They are the best choice for heavy industrial factory, transportation, oil & gas, chemical, IP Surveillance and processing automation area where environmental conditions are harsh and critical.

| Models | RS-IS-310-10GP |
|---|---|
| **Interface Characteristics** | |
| Console Port | 1*RJ45 Console port (115200,8,N,1) |
| Fixed Port | 8*10/100/1000Base-T RJ45 PoE, 2*1G/2.5GBase-X SFP |
| Power Input | 2 set of V+, V- redundant DC power interface<br>(4 Pin block terminal block), |
| Alarm Switch/Relay | Alarm Relay port |
| Ethernet Port | 10/100/1000Base-T(X) ports supports auto-sensing, full/ half duplex MDI/ MDI-X self-adaption, Watchdog |
| Twisted Pair Transmission | 10BASE-T: Cat3,4,5 UTP(≤100 meters)<br>100BASE-TX: Cat5 or later UTP(≤100 meters)<br>1000BASE-T: Cat5e or later UTP(≤100 meters) |
| Optical Fiber Port | Gigabit SFP optical fiber port and 10G SFP+ optical fiber port, default no include optical modules<br>(optional single-mode / multi-mode, single fiber / dual fiber optical module. LC) |
| Optical Cable / Distance | Multi-mode: 850nm/ 0-500m(1G)<br>Single-mode:1310nm/ 0-40km, 1550nm/ 0-120km. |
| **Chipset Parameters** | |
| Network Management Type | L2+ |
| Network Protocol | IEEE802.3 10BASE-T, IEEE802.3i 10Base-T, IEEE802.3u 100Base-TX,<br>IEEE802.3ab 1000Base-TX, IEEE802.3z 1000Base-X, IEEE802.3x |
| Forwarding Mode | Store and Forward (Full Wire Speed) |
| Switching Capacity | 26Gbps (Non-blocking) |
| Forwarding Rate@64byte | 38Mpps |
| CPU | Marvell AC5 series 1.2GHz |
| DRAM | 512MB |
| FLASH | 512MBs |
| MAC | 16K |
| Buffer Memory | 12Mbit |
| Jumbo Frame | 10K |
| LED Indicators | 1-8 (Copper ports indicators) Green -- Off: ports link down, On: ports link up, Blinking: data on TX/RX<br>1-8 (PoE status indicators) Yellow-- Off: PoE not working, On: PoE working |

| PoE & Power Suply | |
|---|---|
| PoE Port | 1 to 8, IEEE 802.3 af/at |
| PoE Management | Port PoE working status display<br>Port PoE output priority configuration<br>PoE power supply total power limit configuration<br>Power delay start, PoE work and time scheduling<br>Port PoE output power distribution, PoE on/off, af/at power distribution |
| Power Supply Pin | Removable 4-pin terminal block |
| Max Power Per Port | 30W, IEEE 802.3 af/at |
| Total PWR / Input Voltage | Input current: 5.8A Max,<br>2*120W-240W/48VDC |
| Power Consumption | Full loading without PoE ≤10W<br>PoE power budget ≤240W<br>Supports reverse polarity protection<br>Supports Over-current protection |
| Input Voltage / Interface | 44-57VDC (802.3af)<br>52-57VDC (802.3at)<br>redundant power input |
| Power Supply | No, optional 48V/120W or 48V/240W industrial power supply |

| Physical Parameters | |
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| Operation TEMP / Humidity | -40°C~+80°C, 5%~95% RH Non condensing |
| Storage TEMP / Humidity | -40°C~+85°C, 5%~95% RH Non condensing |
| Ingress Protection | IP40 |
| Lighting Protection | 4KV 8/20us<br>IEC61000-6-2 (Common Industrial Standard)<br>IEC61000-4-2 (ESD): ±8kV contact discharge, ±15kV air discharge<br>IEC61000-4-3 (RS):10V/m (80~1000MHz)<br>IEC61000-4-4(EFT): Power cable: ±4kV; data cable: ±2kV<br>IEC61000-4-5 (Surge): Power cable: CM±4kV/ DM±2kV, data cable: ±4kV<br>IEC61000-4-6 (Radio frequency transmission): 10V(150kHz~80MHz)<br>IEC61000-4-8 (Power frequency magnetic field): 100A/m, 1000A/m, 1s to 3s<br>IEC61000-4-9 (Pulsed magnet field): 1000A/m<br>IEC61000-4-10 (Damped oscillation): 30A/m 1MHz<br>IEC61000-4-12/18 (Shockwave): CM 2.5kV, DM 1kV<br>IEC61000-4-16 (Common-mode transmission): 30V, 300V, 1s |
| Mechanical Properties | IEC60068-2-6 (anti vibration), IEC60068-2-27 (anti shock), IEC60068-2-32 (free fall) |

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| Dimension (L*W*H) | 54*115*158mm |
| Net / Gross Weight | 1.40kg |
| Installation | DIN rail |
| Certification | CCC, CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class B, RoHS |

## Software Features

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| Port aggregation | Support GE port aggregation<br>Support 2.5GE aggregation<br>Support static aggregation<br>Support LACP dynamic aggregation<br>Up to 64 aggregation groups and up to 8 ports per group |
| Port features | Support IEEE802.3x flow control,<br>Support interface counters,<br>Support port isolation,<br>Port mirroring ( One-to-One, Many-to-One)<br>Support loop detection(Port-based; VLAN-based)<br>Support broadcast storm suppression(broadcast; unknown multicast; unknown unicast) |
| Mac-address table management | Support static Mac-address management<br>Support dynamic Mac-address Management<br>Support filtering Mac-address<br>Support MAC limit based on port and VLAN<br>Support MAC flapping based on port and VLAN<br>16K Mac-address table size |
| VLAN | IEEE802.1Q tagged VLAN, Mac based VLAN, IP based VLAN, Protocol based VLAN, Voice VLAN, specially divide VLAN for specially voice data flow, Private VLAN, divide a VLAN broadcast domain into multiple sub-domains to form a double-layer VLAN structure, VLAN range: 1-4094, Support access mode/trunk mode/ hybrid mode |
| STP | 802.1D STP, 802.1W RSTP, 802.1S MSTP, BPDU Guard<br>Number of Single Ring Device Connections: 20 |
| Routing | Support VLAN interface and route port, IPv4 static routing table entry configuration, ARP dynamic learning and static configuration, IPv6 static routing table entry configuration, Neighbor discovery and static configuration, Routing prefix table size 4k for IPv4, for IPv6 divide by 4 |
| GVRP | Normal mode, Fixed mode, Forbidden mode |
| QinQ | Port-based QinQ, VLAN-based QinQ, VLAN mapping, Flow-based QinQ |
| LLDP | Link Layer Discovery Protocol, LLDP-MED |
| SPAN | Number of Sessions: 7<br>Many-to-one |
| RSPAN | Remote Switch Port Analyzer |
| QoS | QoS Class, Remarking, Support SP, WRR Queue Scheduling, Ingress Port-based Rate-limit<br>Egress Port-based Rate-limit, Egress port-queue shaper<br>Policy-based QoS, Port Queue Numbers: 8 |

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| ACL | IP Standard ACL, IP Extended ACL, MAC extend ACL, IPv6 ACL, Time Range, ACL apply on VLAN,<br>ACL Entrys include input and output |
| ERPS G.8032 | Major ring, Sub ring, Recovery time ≤20ms<br>Number of Single Ring Device Connections: No limit |
| PoE management | Support 802.3af/802.3at, Support PD watchdog<br>Support PoE priority management, Support Max PoE power configuration for each port, Support alarm threshold configuration, Support reserved power configuration, Support PoE schedule<br>Support POE legacy mode |
| Multicast | IGMP v1, v2, v3, IGMP Snooping v1/v2/v3,<br>Fast Leave, Multicast Table Size: 1K<br>PIM-SM |
| ACL | IP Standard ACL, IP Extended ACL, MAC extend ACL, IPv6 ACL, Time Range, ACL apply on VLAN,<br>ACL Entrys include input and output |
| Security | DAI: Dynamic ARP Inspection<br>ARP-check: Support ARP-check and ARP packet filtering for illegal users<br>Ddos: Ddos attack protection<br>Access control: Support Telnet/SSH/HTTP/HTTPS user access control, Port-security<br>IP source guard IPSG: IP Source Guard, Port-based IP/Mac Binding Access<br>AAA: RADIUS authentication access switch, TACACS authentication access switch, Authorization<br>DHCPv4 Snooping: DHCP snooping trust port, DHCP snooping option-82, DHCP snooping circuit-id and remote-id customized |
| DHCP | DHCP Client, DHCP Snooping, DHCP Server, DHCP relay |
| Fault Detection | Ping/Traceroute, For IPv4 and IPv6, Dying gasp, Optical transceiver DDM<br>One click fault information collection, Cable detection |
| Management | CPU real-time utilization status view, SNMP V1/V2/V3, RMON ,Console/Telnet Server/ Telnet Client, CLI configuration, One-key recovery, LLDP LLDP-MED, FTP, TFTP, SCP, SFTP file upload and download management, Ping detection, System work log, Web network management (HTTPS), Web Management, Support HTTP V1.1, ICMP, ping, ssh control and management, DHCP Server/Relay/Client for ipv4/v6,<br>SSHv2 Support login based on user password-SSH2, support SSH IPv4, IPv6, MQTT, sflow,<br>DNS, Up to 8 users online simultaneously,<br>FTP/TFTP based remote configuration import and export,<br>USB flash drives based local configuration import and export,<br>Network Time Protocol NTP, For IPv4 and IPv6,<br>NTP support domain name configuration,<br>Firmware upgraded by WEB, Firmware upgraded by CLI, Dual partition,<br>Up to 8 users online simultaneously, Access control based on IPv4 or IPv6 ACL,<br>IPv4 and IPv6 Dual Stack Management |
| User Management | Support password protection, support MD5/SHA256/SHA512 algorithm<br>Local Management of User Privilege<br>Remote authorization by RADIUS or TARCAS<br>Enable privilege protection<br>User password complexity requirements<br>User login fail protection<br>User Privilege Level 0 to 15 |
| Firmware Management | Firmware upgraded by WEB<br>Firmware upgraded by CLI<br>Dual partition |

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| System Log Management | Syslog Level 7 to 0<br>Corresponding Debug/Info/Notice/Warning/ Err/ Critical/ Alert<br>Support connecting up to 3 Servers<br>For IPv4 and IPv6 |

| Packing List | Content | Qty | Unit |
|---|---|---|---|
| Packing List | L2+ managed industrial PoE+ switch | 1 | SET |
| | User Guide | 1 | PC |
| | Warranty Card | 1 | PC |

| Model | Description |
|---|---|
| **Order Information** | |
| RS-IS-310-10GP | L2+ Managed industrial PoE switch with 8*10/100/1000Base-T RJ45 PoE ports and 2*1G/2.5GBase-X SFP slots, supports Alarm/DO, complies with IEEE802.3af, IEEE802.3at PoE standard protocol, DC44-57V input, redundant dual power supply, Din-rail installation; Operation temperature: -40°C  +80°C |

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