

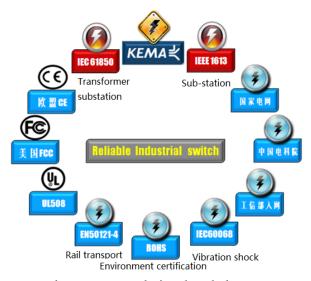


Gazelle S1010i GE NMS-manageable Industrial Switch



Brief introduction

The Gazelle S1010i GE NMS-manageable industrial switch is specially designed for the Automatic Control System (ACS) in the industrial field, which can operate stably for a long time in harsh environments. The Gazelle S1010i features leading ring network technologies in the industry, supports multiple redundant ring network protocols, through which any interface can form a ring with other devices, and supports chain, star, dual-star, ring, tangent ring, intersecting ring, and coupling ring, with sub-50ms self-healing of the ring network. Featuring high reliability, security, and manageability, the Gazelle S1010i ensures secure transmission of key data. It also supports remote management and can work with Raisecom NView



NNM system for cluster management, implementing seamless network management during the whole process.

The Gazelle S1010i is highly adaptive to industrial environments in terms of mechanical stability, climate adaptability, electromagnetic environment adaptability, and so on. It is IP40 rated, and supports dual redundant power supplies, adopts low-power fanless cooling technology, and ensures up to 35-year Mean Time Between Failures (MTBF) and a 3-year warranty. The Gazelle S1010i can be widely used in electric power, transportation, maritime transport, coal, petroleum, metallurgy, water treatment and other industries.









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GE uplink and wire-speed switching

The Gazelle S1010i supports the bus bandwidth of 7.4 Gbit/s, enabling all interfaces with Layer 2 wire-speed switching capabilities and also supports GE uplink. Therefore, it can meet the high bandwidth requirements of the current multi-service big data.

Abundant product forms

The Gazelle S1010i includes multiple product forms and provides different interface combinations, including 10/100 Mbit/s electrical interfaces, 100 Mbit/s optical interfaces, and 1000 Mbit/s optical interfaces. The optical interfaces support SC, ST, SFP, and other forms. Therefore, the Gazelle S1010i can be widely used in various scenarios.

Complete security control policy

The Gazelle S1010i supports IEEE 802.1x authentication which can authenticate users when they access the network, and supports multiple binding groups such as MAC + interface, storm control, and port lock to ensure the validity of the access user.

The Gazelle S1010i supports port mirroring to monitor services and traffic of the monitoring port, which helps optimize deployment and monitor malicious attacks.

Fast self-healing Ethernet ring network

Any interface on the S1010i can form a ring with other devices and the Gazelle S1010i supports multiple Ethernet ring protocols, including RRPS, spanning tree, and G.8032 (ERPS). The sub-50ms self-healing of the ring network ensures reliable data transmission between nodes.

Carrier-grade QoS

The Gazelle S1010i supports 4 output queues for each interface, and 4 queue scheduling algorithms: Strict Priority (SP), Weighted Round Robin (WRR), 1SP+3WRR, and 2SP+2WRR, through which packets can be distributed to interface output queues based on different priorities. It also supports bidirectional rate limiting on the interface





with a minimum rate-limiting granularity of 64 Kbit/s. With Carrier-grade QoS, the Gazelle S1010i meets users' requirements for multi-service identification, classification, and resource scheduling.

Easy management and maintenance

The Gazelle S1010i supports SNMP and Raisecom NView NNM system. It supports network topology discovery and implements centralized management (uniformly manages multiple devices) and maintenance of devices by working with Raisecom NView NNM system, thus reducing the management costs. The Gazelle S1010i also supports multiple management methods, such as CLI, SSH, Web network management, and Telnet, facilitating device management.

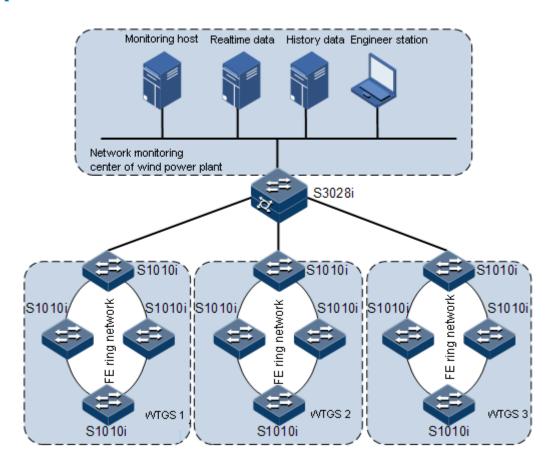






Typical application

Wind power solution





Technical specifications

Model	Gazelle S1010i
Description	Eight 100Base-TX Ethernet electrical interfaces

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Model	Gazelle S1010i	
	Two 100/1000 Mbit/s auto-negotiation Combo interfaces + eight 100Base-TX Ethernet electrical interfaces	
	Three 1000Base-X Ethernet SFP optical interfaces + seven 100Base-TX Ethernet electrical interfaces	
	• Four 100Base-FX 1×9 Ethernet optical interfaces + six 100Base-TX Ethernet electrical interfaces	
	• Three 100Base-FX 1×9 Ethernet optical interfaces + seven 100Base-TX Ethernet electrical interfaces	
	• Two 100Base-FX 1×9 Ethernet optical interfaces + six 100Base-TX Ethernet electrical interfaces	
	• Two 100Base-FX 1×9 Ethernet optical interfaces + eight 100Base-TX Ethernet electrical interfaces	
	All-metal enclosure	
	Fanless design	
	Compact structure	
	• IP40-compliant	
Basic information		
Service interfaces	Eight 100Base-TX RJ45 electrical interfaces	
	Two 100/1000 Mbit/s auto-negotiation Combo interfaces + eight 100Base-TX RJ45 electrical interfaces	
	Three 1000Base-X SFP optical interfaces + seven 100Base-TX RJ45 electrical interfaces	
	• Four 100Base-FX 1×9 optical interfaces + six 100Base-TX RJ45 electrical interfaces	
	• Three 100 Base-FX 1×9 optical interfaces + seven 100Base-TX RJ45 electrical	





Model	Gazelle S1010i	
	interfaces	
	Two 100Base-FX 1×9 optical interfaces + six 100Base-TX RJ45 electrical interfaces	
	Two 100Base-FX 1×9 optical interfaces + eight 100Base-TX RJ45 electrical interfaces	
	SFP optical modules should be purchased separately.	
Dimensions (Width × Height × Depth)	80 mm × 150 mm × 121 mm	
Weight	1.2 kg	
Installation mode	Wall-mount, DIN guide-rail, and rack installation	
Protection grade	IP40	
MTBF	35 years	
Operating voltage	DC12	
	Rated voltage: 12/24 VDC	
	Voltage range: 10–36 VDC	
	DCW48	
	Rated voltage: 24/48 VDC	
	Voltage range: 20–72 VDC	
	AC/DC	
	Rated voltage: 110/220 VAC, 110/220 VDC	
	• Voltage range: 85–264 VAC, 88–300 VDC	
Power consumption	< 11 W	
Operating temperature	-40 ℃ to +85 ℃	





Model	Gazelle S1010i	
Storage temperature	-40 ℃ to +85 ℃	
Relative humidity	5%–95%, non-condensing	
Backplane bandwidth	7.4 Gbit/s	
MAC address table	8K, automatic learning	
Relay alarm interface	1 SPDT alarm interface	
Console	1 RJ45 management interface	
Features	res	
Switching mode	Store and Forward, 1 Mbit switching cache	
Frame length	Support a maximum frame length of 1632 bytes.	
Storm control	Support storm control over broadcast, unknown multicast, and unknown unicast packets based on the number of bytes (bps).	
Interface loop detection	 When a loop is detected, the interface can be automatically shut down. When the loop is eliminated, the interface can be automatically unblocked again. You can configure the detection interval. 	
Multicast	 Support IGMP Snooping v1, v2, and v3. Support filtering multicast packets and discarding unknown multicast packets. Support static multicast groups. Support 1024 multicast groups. 	
Spanning tree Industrial ring network	 Support STP, MSTP, and RSTP. Support G.8032 (ERPS). Support up to 63 rings. Each ring supports up to 1024 devices. 	

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protocols	• The self-healing time of the ring network is less than 50ms.
Interface aggregation	 Support 16 trunk groups with 8 physical members in each group. Support load balancing mode based on MAC address and IP address.
Mirroring	Support multiple-to-one port mirroring, namely, multiple source ports and one mirroring port. Support respective mirroring in the ingress and egress direction of the interface.
MAC address	 Support respective mirroring in the ingress and egress direction of the interface. Support 8K MAC addresses.
	 Support 1024 static MAC address bindings based on interface. Support disabling or enabling MAC address learning based on interface. Support adding/deleting MAC addresses and showing statistics. Support interface-based MAC address limits, ranging from 1 to 255. Support MAC address lock, prohibiting other addresses from learning it.
Flow control	 Support IEEE 802.3x flow control in full duplex mode. Support back pressure flow control in half duplex mode.
VLAN	 Support 4094 concurrent VLANs. Support basic QinQ. Support configuring TPID. Support multiple VLAN partitions on a single interface.
Advanced features	
QoS	 Support 802.1p CoS, DSCP, and interface priority. Support trusting local priority. Support trusting CoS and DSCP priority.





Model	Gazelle S1010i
	Support overwriting CoS and queue priorities with VLAN, SMAC, and DMAC priorities based on interface.
	Support global queue scheduling.
	Each interface supports 4 queues.
	Support 4 priority queues.
	• Support SP, 1SP+3WRR, 2SP+2WRR, and WRR.
Bandwidth control	• Range: 1–100 Mbit/s (100 Mbit/s interface), 1–1000 Mbit/s (1000 Mbit/s interface)
	• Granularity: 64 Kbit/s when the rate ranges from 64K to 1M and 1 Mbit/s when the rate ranges from 1M to 100 M
	Support ingress and egress rate limiting based on interface.
Security	Support hierarchical management on users and password protection.
	Support anti-DoS attacks.
	Support RADIUS authentication.
	Support TACACS+ authentication.
	Support binding a MAC address with an interface.
	Support PPPoE Agent.
	Support dot1x.
	Support interface protection.
Management features	
System management	Support CLI configurations.
	Support CLI help in both Chinese and English.
	Support configurations through the Console interface.
	• Support remote configurations of multiple SSH v2 clients.





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	 Support RMON group 1, 2, 3, and 9 MIB. Support SNMP v1/v2c/v3.
	Support Raisecom NMS.
	Support system log.
	Support alarm outputs through Relay, Trap, and Syslog.
	Support Keepalive reports.
Time management	Support timezone management.
	Support time modification.
	• Support DST.
	 Support the SNTP client to be synchronized with the system time. Support NTP.
DHCP	Support DHCP Snooping, DHCP Server, DHCP Client, and DHCP Option82.
Task scheduling	Support running the task periodically or during a specified time.
Tolerance and redundancy	Support system error report.
reduildancy	Support fast recovery from critical errors.
Authentication	
Compliance standard	• IEEE 802.3
	IEEE 802.3u for 100BaseT(X) and 100Base FX
	• IEEE 802.3ab for 1000BaseT(X)
	IEEE 802.3z for 1000BaseSX/LX/LHX/ZX
	IEEE 802.3x for Flow Control
	IEEE 802.1d for Spanning Tree Protocol





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	IEEE 802.1w for Rapid STP
	• IEEE 802.1s for MSTP
	IEEE 802.1q for VLAN Tagging
	• IEEE 802.1p for Quality of Service
	• IEEE 802.1X for Security
	IEEE 802.3ad for Port Trunk with LACP
	• IEC61000-4-2 (ESD): ±8 kV contact discharge, ±15 kV air discharge
	• IEC61000-4-3 (RS-): 20V/m (80–1000 MHz)
	• IEC61000-4-4 (EFT): power cable: ±4 kV; data cable: ±4 kV
	• IEC61000-4-5 (surge): power cable: CM ± 4 kV/DM ± 2 kV; data cable: CM ± 4 kV
	• IEC61000-4-6 (RF conducted immunity): 10 V (150 kHz–80 MHz)
	• IEC61000-4-8 (power frequency magnetic field immunity): 100A/m continuous; 1000A/m ,1s to 3s
	• IEC61000-4-9 (pulse magnetic field): 1000A/m
	• IEC61000-4-10 (damped oscillation magnetic field): 30A/m@1MHZ
	• IEC61000-4-12/18 (oscillation wave): CM 2.5 kV, DM 1 kV
	• IEC61000-4-16 (common mode conduction): 30 V continuous; 300V,1s
	• FCC Part 15/CISPR22 (EN55022): Class A
	• IEC61000-6-2 (general industrial standards)
	• IEC60068-2-6 (anti-vibration)
	• IEC60068-2-27 (anti-shock)
	• IEC60068-2-32 (free falling)
	• IEC61850-3 (electrical substation)

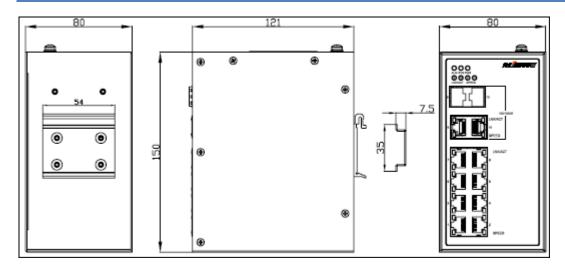




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	IEEE1613 (electrical substation)	
	CE, FCC, ROHS, certification by State Grid Corporation of China, certification by China Electric Power Research Institute, and Network Access License for Telecommunications Equipment (Ministry of Industry and Information Technology, P.R.C)	

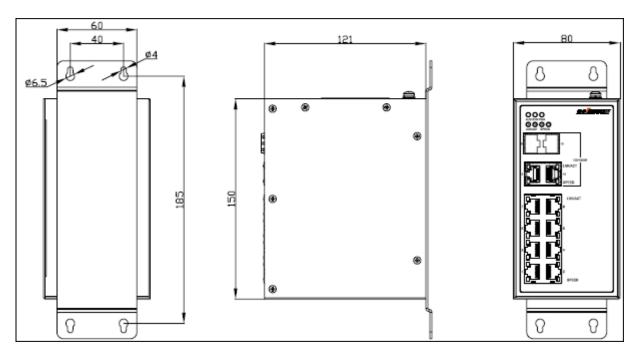


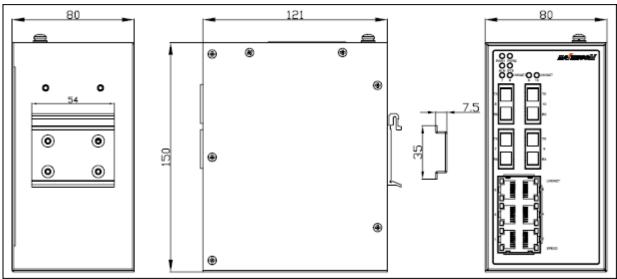
Device dimensions











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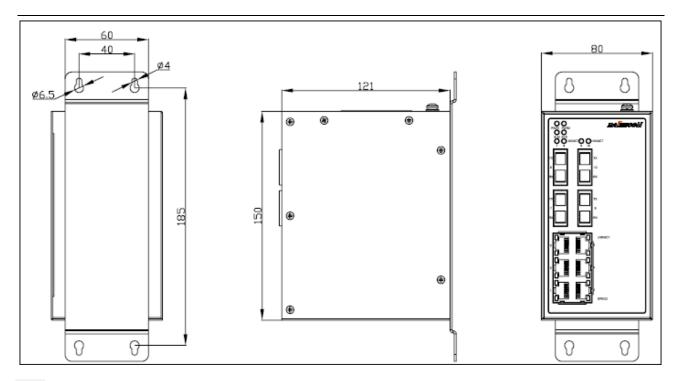
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Ordering information

Gazelle S1010i GE NMS-manageable industrial switch		
Model	Description	
	Three 1000 Mbit/s uplink interfaces	
	Seven 10/100Base-TX Ethernet electrical interfaces	
Gazelle S1010i-3GF-7FE-DCW48	1 Console interface	
	1 SPDT alarm interface	
	• Dual inputs, 24/48 VDC power supply	
G N G10101 2GF THE D G14	Three 1000 Mbit/s uplink interfaces	
Gazelle S1010i-3GF-7FE-DC12	Seven 10/100Base-TX Ethernet electrical interfaces	

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Gazelle S1010i GE NMS-manageable industrial switch		
	 1 Console interface 1 SPDT alarm interface Dual inputs, 12/24 VDC power supply 	
Gazelle S1010i-3GF-7FE-AC	 Three 1000 Mbit/s uplink interfaces Seven 10/100Base-TX Ethernet electrical interfaces 1 Console interface 1 SPDT alarm interface Single input, 110/220 VAC or 110/220 VDC power supply 	
Gazelle S1010i-8FE-AC	 Eight 10/100Base-TX Ethernet electrical interfaces 1 Console interface 1 SPDT alarm interface Single input, 110/220 VAC or 110/220 VDC power supply 	
Gazelle S1010i-8FE-DCW48	 Eight 10/100Base-TX Ethernet electrical interfaces 1 Console interface 1 SPDT alarm interface Dual inputs, 24/48 VDC power supply 	
Gazelle S1010i-8FE-DC12	 Eight 10/100Base-TX Ethernet electrical interfaces 1 Console interface 1 SPDT alarm interface Dual inputs, 12/24 VDC power supply 	
Gazelle S1010i-2GF-2FX-6FE-DCW48	 Two 1000 Mbit/s uplink optical interfaces (100 Mbit/s optical interfaces and SFP interfaces are also supported) Two 100 Mbit/s optical interfaces (SFP interfaces) 	

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Gazelle S1010i GE NMS-manageable industrial switch	
	 Six 10/100Base-TX Ethernet electrical interfaces 1 Console interface 1 SPDT alarm interface Dual inputs, 24/48 VDC power supply
Gazelle S1010i-2GF-2FX-6FE-DC12	 Two 1000 Mbit/s uplink optical interfaces (100 Mbit/s optical interfaces and SFP interfaces are also supported) Two 100 Mbit/s optical interfaces (SFP interfaces) Six 10/100Base-TX Ethernet electrical interfaces 1 Console interface 1 SPDT alarm interface Dual inputs, 12/24 VDC power supply
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