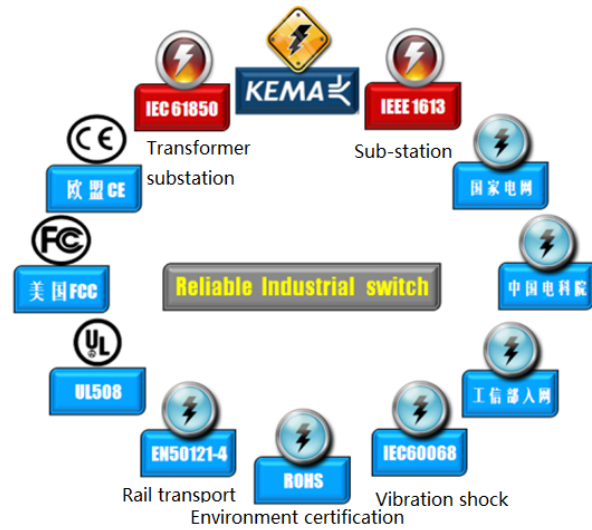




Gazelle S1020i-GS GE Industrial Switch

Brief introduction

The Gazelle S1020i-GS GE industrial switch is designed for the Automatic Control System (ACS) in the industrial field and can operate stably for a long time in harsh environments. It supports flexible interface portfolio and complete Layer 3 routing protocols. The Gazelle S1020i-GS features leading ring network technologies in the industry, supports multiple redundant ring network protocols, such as ITU G.8032, through which any interface can form a ring with other devices, and supports chain, star, dual-star, ring, tangent ring, and intersecting ring, with sub-20ms self-healing of the ring network. Featuring high reliability, security, and manageability, the Gazelle S1020i-GS 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 S1020i-GS is highly adaptive to industrial environments in terms of mechanical stability, climate adaptability, electromagnetic environment adaptability, and so on. It is IP40-rated, provides dual redundant power supplies, adopts low-power fanless cooling technology, and ensures up to 35-year Mean Time Between Failures (MTBF). The Gazelle S1020i-GS can be widely used in the electric power industry, transportation, coal, petroleum, metallurgy, water treatment and other industries.

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Device figure



Features

- Ring network technology: support MSTP/ITU G.8032 and sub-20ms network convergence.
- VLAN: support 4094 VLANs and support QinQ.
- Routing: support Layer 3 forwarding. Support dynamic routing protocols, such as RIP and OSPF. Support VRRP.
- Multicast: support IGMP Snooping.
- Service quality: support QoS. Support port mirroring. Support multiple priority mechanisms. Support multiple queue scheduling modes.
- Bandwidth management: support link aggregation. Support interface rate limiting. Support storm control over broadcast/multicast/unknown unicast packets.
- Network management: support CLI/Telnet/Web. Support Raisecom NView NNM system.
- Network security: support port security MAC. Support IEEE 802.1x authentication. Support blacklist and whitelist.
- Device management: support hierarchical management on users. Support logs. Support upgrade through FTP/TFTP and batch upgrade.
- Alarm management: support interface/temperature alarms, dying gasp alarms, and so on.

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Technical specifications

Model	Gazelle S1020i-GS
Description	<ul style="list-style-type: none"> • Sixteen 10/100/1000BASE-T auto-negotiation Ethernet electrical interfaces • Four 100BASE-FX/1000BASE-T auto-negotiation Ethernet SFP optical interfaces • Sixteen 10/100/1000BASE-T auto-negotiation Ethernet electrical interfaces • Eight 10/100/1000BASE-T auto-negotiation Ethernet electrical interfaces • Four 100BASE-FX/1000BASE-T auto-negotiation Ethernet SFP optical interfaces • Sixteen 10/100/1000BASE-T auto-negotiation Ethernet electrical interfaces • Twelve 100BASE-FX/1000BASE-T auto-negotiation Ethernet SFP optical interfaces • All-metal enclosure • Fanless design • Compact structure • IP40-compliant • Guide rail, wall-mount, or rack installation
Basic information	
Service interfaces	<ul style="list-style-type: none"> • Sixteen 10/100/1000BASE-T auto-negotiation Ethernet electrical interfaces • Four 100BASE-FX/1000BASE-T auto-negotiation Ethernet SFP optical interfaces • Sixteen 10/100/1000BASE-T auto-negotiation Ethernet electrical interfaces • Eight 10/100/1000BASE-T auto-negotiation Ethernet electrical interfaces • Four 100BASE-FX/1000BASE-T auto-negotiation Ethernet SFP optical interfaces • Sixteen 10/100/1000BASE-T auto-negotiation Ethernet electrical interfaces

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Model	Gazelle S1020i-GS
	<ul style="list-style-type: none"> • Twelve 100BASE-FX/1000BASE-T auto-negotiation Ethernet SFP optical interfaces
Other interfaces	<ul style="list-style-type: none"> • Console interface: RJ45 connector • Alarm interface: 3-pin Phoenix connector, SPDT • Reset button: short press (< 3s) for restarting the device, long press (> 3s) for restoring factory settings and restarting the device • Input DI: -30 to +3 VDC represents "0" while 13–30 VDC represents "1".
LED	<ul style="list-style-type: none"> • Power LED: PWR1 and PWR2 (DC model); PWR (AC model) • System LED: SYS • System alarm LED: ALM • Interface status LED: LNK/ACT (for optical interfaces) or LNK/ACT and SPEED (for electrical interfaces)
Dimensions (Width × Height × Depth)	123 mm × 177 mm × 155 mm (Width × Height × Depth), equipped with the cooling fin
Weight	< 2 kg
Installation mode	Wall-mount, DIN guide-rail, and rack-mount tray
Protection grade	IP40
MTBF	35 years
Operating voltage	DCW48 <ul style="list-style-type: none"> • Rated voltage: 24/48 VDC • Voltage range: 20–72 VDC AC/DC <ul style="list-style-type: none"> • Rated voltage: 110/220 VAC, 110/220 VDC • Voltage range: 85–264 VAC, 88–300 VDC

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Model	Gazelle S1020i-GS
	<p>The 12GF-16GE model supports DCW24 (dual inputs, ranging from 9.6 to 60 VDC) only.</p> <p>DCW24</p> <ul style="list-style-type: none"> • Rated voltage: 12/24/48 VDC • Voltage range: 9.6–60 VDC • Overload protection: supported • Reverse polarity protection: supported • Redundant input: supported (DC model)
Power consumption	< 20 W
Operating temperature	-40 °C to +75 °C
Storage temperature	-40 °C to +85 °C
Relative humidity	5%–95%, non-condensing
Backplane bandwidth	56 Gbit/s
MAC address table	16 K, automatic learning
Features	
Switching mode	Store and Forward, 12 Mbit switching cache
Frame length	9216 bytes
Storm control	Support storm control over broadcast and unknown multicast packets based on the number of bytes (bps).
Interface loop detection	<ul style="list-style-type: none"> • 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.

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Model	Gazelle S1020i-GS
Multicast	<ul style="list-style-type: none"> • 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	Support STP, MSTP, and RSTP.
Industrial ring network protocols	<ul style="list-style-type: none"> • Support G.8032 (ERPS). • Support up to 32 rings. Each ring supports up to 1024 devices. • The self-healing time of the ring network is less than 20ms.
Mirroring	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Support 16K MAC addresses. • Support 1024 static MAC address bindings. • Support adding/deleting MAC addresses and showing statistics.
Flow control	<ul style="list-style-type: none"> • Support IEEE 802.3x flow control in full duplex mode. • Support back pressure flow control in half duplex mode.
VLAN	<ul style="list-style-type: none"> • Support 4094 concurrent VLANs (VLAN 1–4094). • Support multiple VLAN partitions on a single interface.
Advanced features	
QoS	<ul style="list-style-type: none"> • Support IEEE 802.1p CoS, DSCP, and interface priority. • Support trusting local priority. • Support trusting CoS and DSCP priority. • Support global queue scheduling.

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Model	Gazelle S1020i-GS
	<ul style="list-style-type: none"> • Each interface supports 8 queues. • Support 3 types of priority queues and 4 scheduling modes (SP, WRR, SP+WRR, and SP+DRR).
Bandwidth control	<ul style="list-style-type: none"> • Range: 1–1000 Mbit/s (1000 Mbit/s interface) • Granularity: 64 kbit/s • Support ingress rate limiting based on interface, and traffic rate limiting based on packet type and queue priority.
Security	<ul style="list-style-type: none"> • Support hierarchical management on users and password protection. • Support RADIUS authentication. • Support TACACS+ authentication. • Support interface protection.
Layer 3 routing	<ul style="list-style-type: none"> • Support dynamic routing protocols, such as RIP and OSPF. • Support VRRP.
Management features	
System management	<ul style="list-style-type: none"> • Support CLI configurations. • Support CLI help in both Chinese and English. • Support remotely configuring multiple SSH v2 clients. • Support RMON group 1, 2, 3, and 9 MIB. • Support SNMP v1/v2c/v3. • Support Raisecom NMS. • Support system log. • Support alarm outputs through Trap and Syslog. • Support KeepAlive reports.

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Model	Gazelle S1020i-GS
Time management	<ul style="list-style-type: none"> • Support timezone management. • Support time modification. • Support DST. • Support the SNTP client to be synchronized with the system time. • Support NTP.
DHCP	Support DHCP Client/Server/Snooping/Relay
Task scheduling	Support running the task periodically or during a specified time.
Tolerance and redundancy	<ul style="list-style-type: none"> • Support system error report. • Support fast recovery from critical errors.
Authentication	
Compliance standard	<ul style="list-style-type: none"> • IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3ad, IEEE 802.3z, IEEE 802.3x, IEEE 802.1d, IEEE 802.1w, IEEE 802.1s, IEEE 802.1Q, and IEEE 802.1p • IEC61000-4-2 (ESD): ± 8 kV for contact discharge; ± 15 kV for air discharge • IEC61000-4-3 (RS-): 10 V/m (80–1000 MHz) • IEC61000-4-4 (EFT): power cable: ± 4 kV; data cable: ± 2 kV (5 kHz, 100 kHz) • IEC61000-4-5 (Surge): power cable: CM ± 4 kV/DM ± 2 kV; data cable: CM ± 4 kV • 12GF-16GE EMS • IEC61000-4-4 (EFT): power cable: ± 2 kV; data cable: ± 2 kV • IEC61000-4-5 (Surge): power cable: CM ± 2 kV/DM ± 1 kV; data cable: ± 2 kV • IEC61000-4-6 (RF Conducted Immunity): 10 V (150 kHz–80 MHz) • IEC61000-4-8 (Power Frequency Magnetic Field Immunity): 100 A/m continuous; 1000 A/m, 1s to 3s

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Model	Gazelle S1020i-GS
	<ul style="list-style-type: none">• IEC61000-4-9 (Pulse magnetic field): 1000A/m• IEC61000-4-10 (Damped oscillation magnetic field): 30 A/m@1 MHz• IEC61000-4-12/18 (oscillatory wave): CM 2.5 kV, DM 1 kV• 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)• 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)

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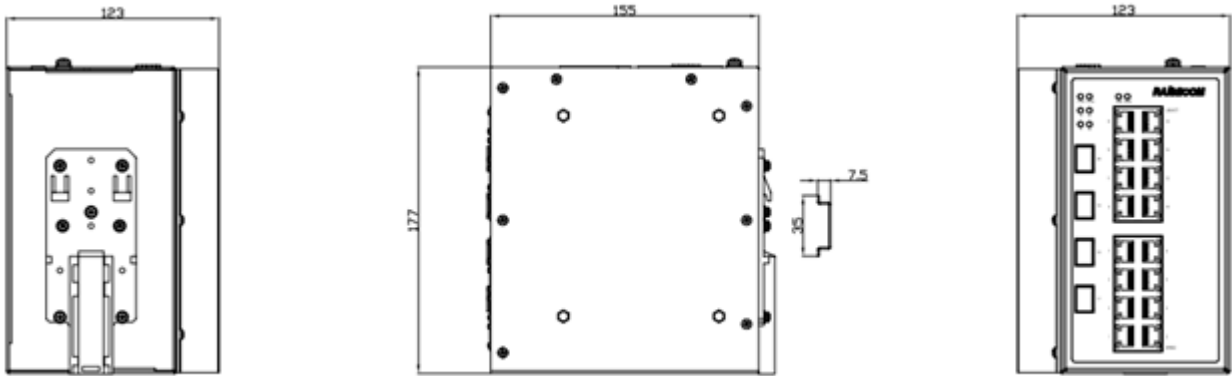
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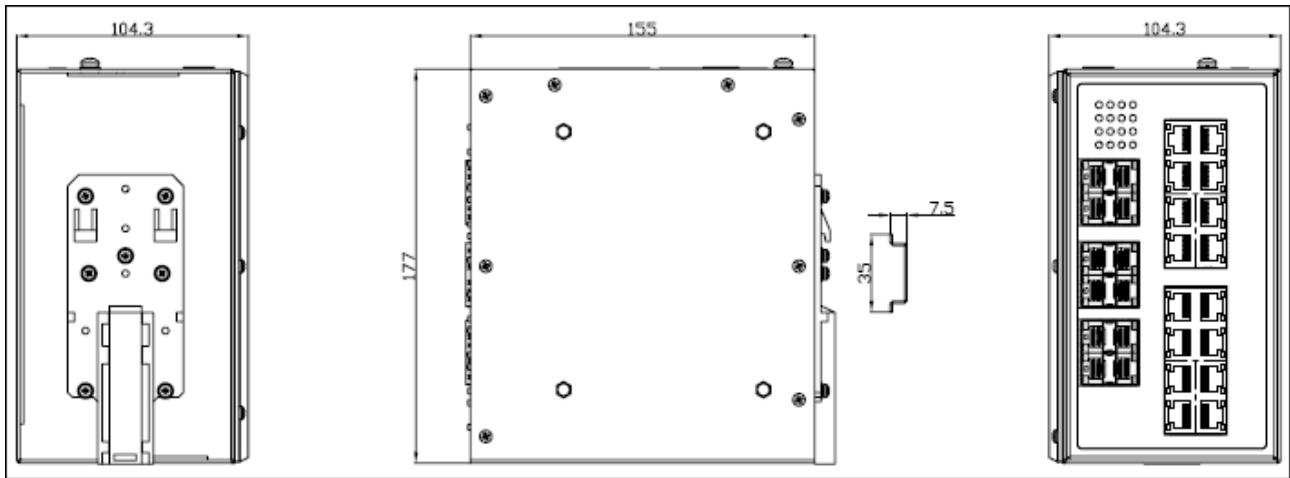
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Device dimensions



Guide-rail installation



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Ordering information

Model	Version	Description
Gazelle S1020i-4GF-16GE-GS	A	<ul style="list-style-type: none"> • Four 1000Base-X Ethernet SFP optical interfaces • Sixteen 10/100/1000Base-T Ethernet electrical interfaces • -DCW48 (dual inputs, 24/48 VDC) • -AC (single input, 110/220 VAC, 110/220 VDC)
Gazelle S1020i-4GF-8GE-GS	A	<ul style="list-style-type: none"> • Four 1000Base-X Ethernet SFP optical interfaces • Eight 10/100/1000Base-T Ethernet electrical interfaces • The power supply is the same as above.
Gazelle S1020i-16GE-GS	A	<ul style="list-style-type: none"> • Sixteen 10/100/1000Base-T Ethernet electrical interfaces • The power supply is the same as above.
Gazelle S1020i-12GF-16GE-GS	A	<ul style="list-style-type: none"> • Twelve 1000Base-X Ethernet SFP optical interfaces, among which 8 are 100/1000 Mbit/s auto-negotiation optical interfaces and 4 are 1000 Mbit/s optical interfaces • Sixteen 10/100/1000Base-T Ethernet electrical interfaces • -DCW24 (dual inputs, 12/24/48 VDC)
Industrial 60 W power supply	A	<ul style="list-style-type: none"> • DG-60-S24II • 20.60.11.0023.01

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