FEATURE HIGHLIGHTS

- IEC61850-3 Certified
- Up to 6 or 8x10/100/1000 BASE-T(X) ports and 2 or 4 1000 BASE-X SFP ports
- Powerful Layer-3 Switching, supporting BGPv4, IPv4 Static, RIPv1/v2 and OSPFv2
- IEEE1588v2 Precision Time Protocol support, with nanosecond-accurate Hardware-based E2E Transparent clock and Software Boundary Clock
- ERPS and Compatible Ring (recovery time < 20ms @ 40 switches), STP/RSTP/MSTP/MRP (Manager/ Client) for network redundancy
- Remote management over Web browser, Telnet, Serial console, Utility
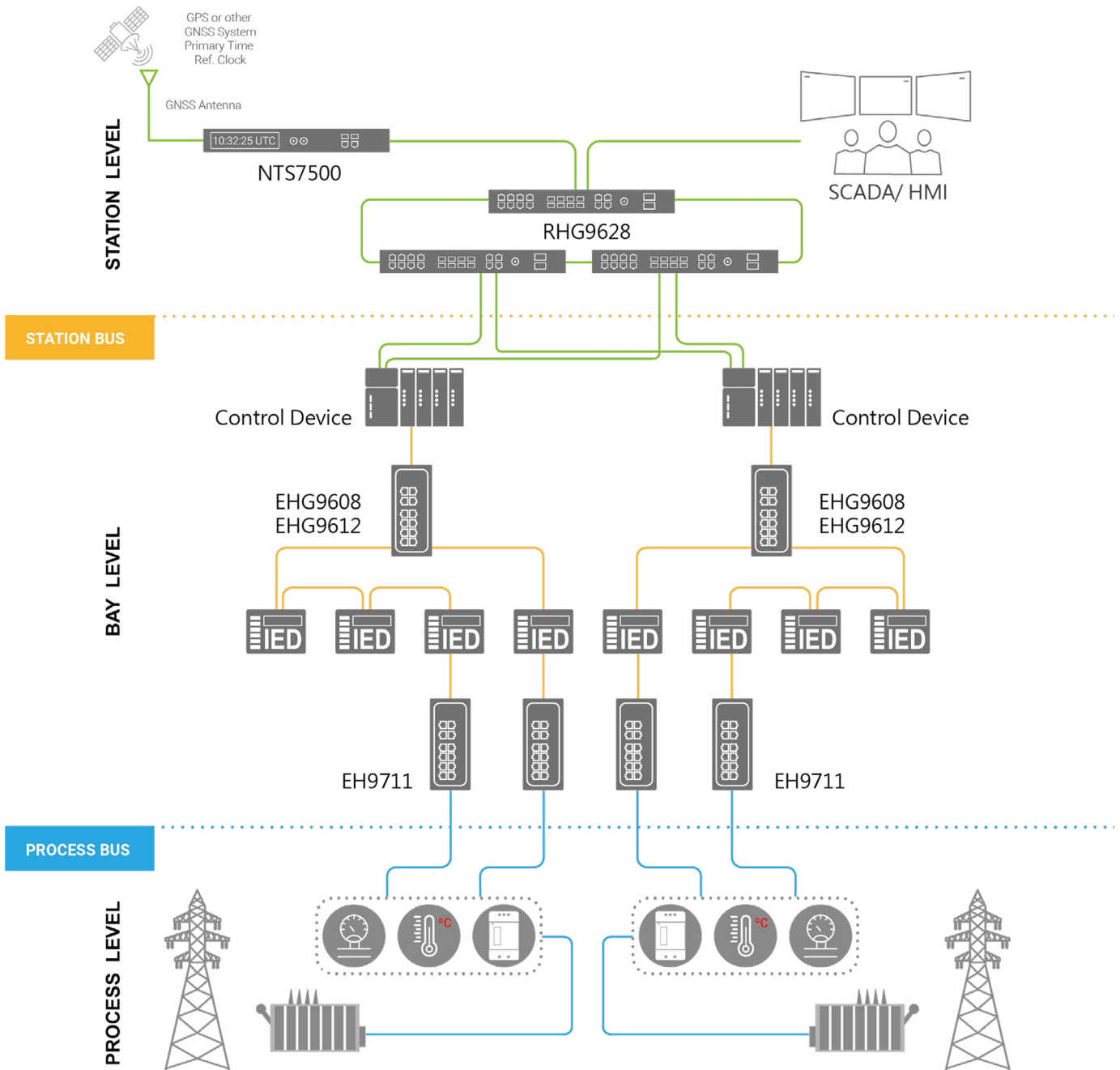
PRODUCT DESCRIPTION

The EHG9608/12 Series is a highly reliable Gigabit Managed Ethernet Switch. Its IEC61850-3 compliance allows it to be core part in the IEC 61850 network in power substations and control centers. The series meets the IEC61850 applications and to support the transmission of GOOSE messages used for fast communication between IEDs.

The **IEEE1588 Precision Time Protocol capabilities allow the deployment of EHG9608/EHG9612 Series in networks with stringent time Synchronization requirements.** It can act as hw-assisted End-to-End transparent clock providing nanosecond-accurate correction-field packet-update and as a sw-assisted boundary clock.

The device equips up to 8x10/100/1000BASE-T(X) RJ-45 ports and up to 4 1000BASE-X SFP ports. **With its high performance, it provides network redundancy self-recovery mechanisms is less than 20ms on full load that enables the user to build a reliable network through a redundant ring topology.** ERPS/STP/MSTP/RSTP/MRP (Manager/ Client) and many other compatible rings are supported. With a Multifunctional web dashboard, its offers intelligent features such as Quality of service (QoS), Virtual LAN (VLAN), IGMP, IGMP Snooping, Port mirroring and security.

The EHG9608/12 Series is designed to be used in core power utilities. It provides dual redundant power inputs with Reverse Polarity Protection and two sets of relay that allow the user build up a stand-alone fault alarm system. Its wide operating temperature of -40 to 85°C and DIN-Rail mounting capacities make it suitable to be used in remote substations where harsh environment and reliability is an issue.

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IEEE 1588 | IEC 62443 | IEC 61850 | c US LISTED | CE | FC | RoHS COMPLIANT | v: 1.1
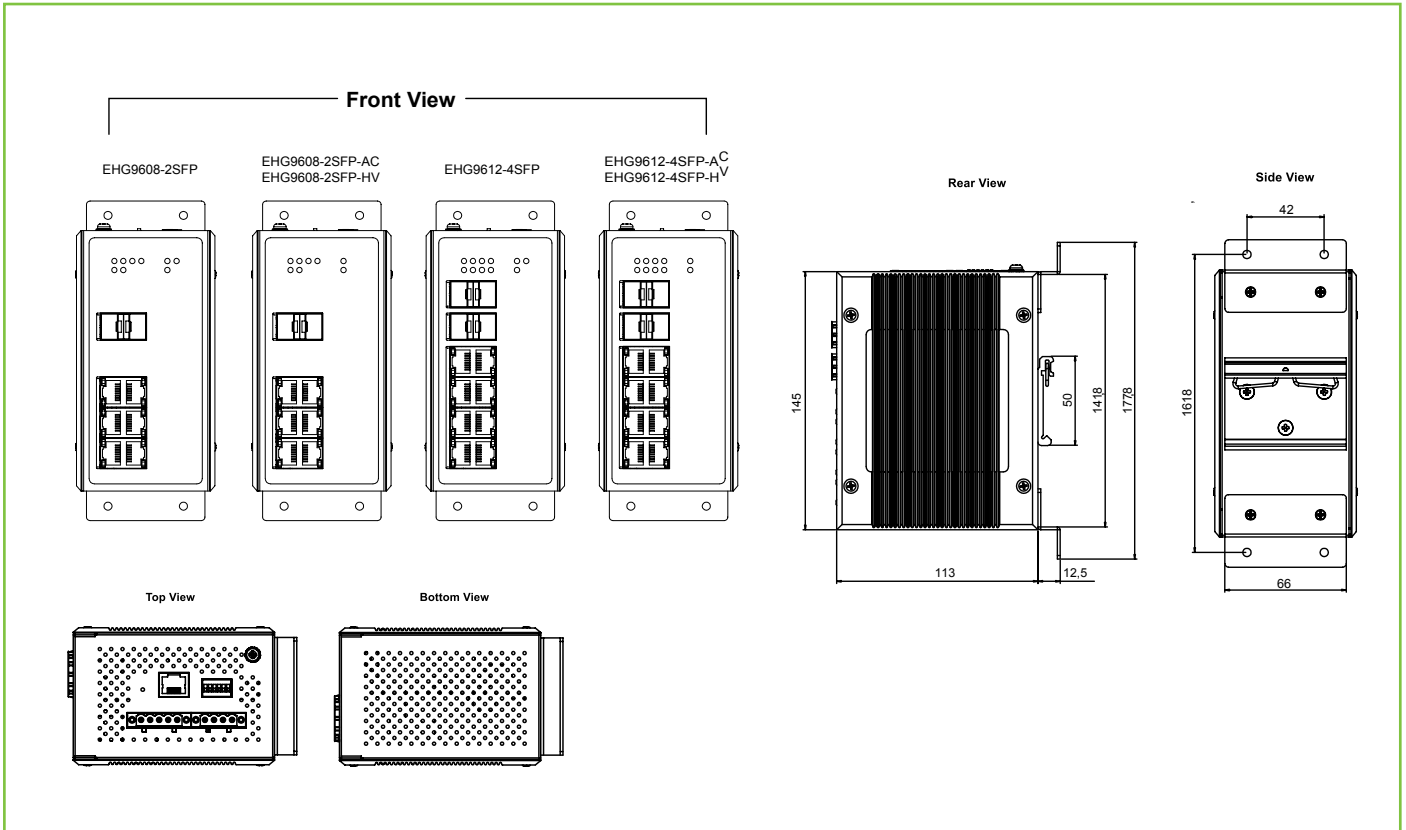
APPLICATION

EHG9608/12 is a product that specially fits with power station and substation application.

This product usually plays an important role at the bay level. With full gigabit ports, EHG9608/12 can help to transmit a bunch of data from process level to upper level. EHG9608/12 also supports IEEE 1588v2 HW-assisted End-to-End Transparent clock to deliver the precise time in power station or substation.

DIMENSIONS & LAYOUT

Front View

EHG9608-2SFP EHG9608-2SFP-AC EHG9612-4SFP EHG9612-4SFP-A^C
EHG9608-2SFP-HV EHG9612-4SFP-H^V

Rear View

Side View

42

145

50

141.8

177.8

161.8

113

12,5

66

Top View

Bottom View

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SPECIFICATIONS

Technical Specifications	
Model Name	EHG9608 EHG9612
Switch Properties	
Priority Queues VLAN Table MAC-Based VLAN VLAN ID Range Trunk Group Static IGMP Groups Dynamic IGMP Groups MAC Table Size Packet Buffer Size Jumbo Frame	8 4096 512 VID 1 to 4094 4 128 256 16K 1.5 MB 9216 Byte
Ethernet	
Standards	IEEE 802.3 for 10BASE-T IEEE 802.3u for 100BASE-T(X) IEEE 802.3ab for 1000BASE-T IEEE 802.3z for 1000BASE-X IEEE 802.3x for Flow Control/ Back pressure control IEEE 802.1d-2004 for Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1q for VLAN Tagging IEEE 802.1p for Class of Service IEEE 8021x for Authentication
Protocols	IPv4, IPv6, IGMPv1/v2/v3, IGMP Snooping, GARP, GMRP, GVRP, SNMPv1/v2c/v3, SNMP Inform, ICMP, Telnet, SSH, DHCP Server/Relay/Client, DHCP Option 66/67/82, BootP, RARP, TFTP, NTP Server/Client, SNTP, SMTP, SMTP (Gmail), RMON, HTTP, HTTPS, Syslog, MRP (Manager/ Client), LLDP, IEEE 1588 PTP V1/V2, IEEE 1588 Hardware-Assisted End-to-End Transparent Clock and Software-assisted Boundary Clock, 802.1x, EAP, RADIUS, TACACS+, Mirror port, QoS, ACL, Serial Console, U-Ring, STP, RSTP, MSTP, Redundancy Compatible Ring, DHCP Snooping, ARP Spoof Prevention, Dynamic ARP Inspection, MLD, UDLD, IP Source Guard, sFlow
Layer-3 Protocols	Routing: IPv4 Unicast static routing, RIP v1/v2, OSPFv2, BGPv4 Multicast: IGMPv1/v2/v3, DVMRP, PIM-DM, PIM-SM, PIM-SSM Routing Redundancy: VRRP (Virtual Router Redundancy Protocol)
Redundancy	ITU-T G.8032 ERPS, STP, RSTP, MSTP, MRP(Manager/Client), Compatible Ring/Chain, U-Ring
Automation Profiles	Modbus/TCP status registers
SNMP MIB	MIB II, IF-MIB, SNMPv2 MIB, BRIDGE-MIB, RMON MIB Group 1,2,3,9, RFC RFC 1157, RFC 1213, RFC 1215, RFC 1493, RFC 1643, RFC 1757, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2571, RFC 2742, RFC 2819, RFC 2863, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415

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Power	
Rated Supply Voltage	24-57 VDC 100-240 VAC for AC series 110-370 VDC for HV Series
Input Voltage	19.2-62.7 VDC 85-264 VAC for AC series 110-370 VDC for HV Series
Input Current (System)	0.63A @ 24 VDC 0.16A @ 100 VAC for AC series 0.12A @ 110 VDC for HV series
Connector	5-Pin 5.08mm Lockable Terminal Block
Reverse Polarity Protection	Yes
Interfaces	
RJ45 Ports Fiber Optics Ports LED Indicators Console Relay Output DIP Switches Button	Up to 8x10/100/1000BASE-T(X) auto negotiation speed Up to 4 1000BASE-X SFP slot PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ-45 Link/Speed, SFP Link, RS232 (RJ45 connector) 2 relay outputs with current carrying capacity of 1A @ 24 VDC Ring Control Reset Button
Physical Characteristics	
Housing Dimension (W x H x D) Weight Installation	IP30 SPCC, Black housing 77 x 145 x 113 mm 1,000g (AC/HV versions) / 1,200g (other) DIN-Rail , Wall mount (optional kit)
Environmental Limits	
Operating Temperature Storage Temperature Ambient Relative Humidity	-40°C to 85°C (-40°F to 185°F) /-40°C to 70°C (-40°F to 158°F) For UL -40°C to 85°C (-40°F to 185°F) 5% to 95% RH, 55°C (Non-condensing)

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REGULATORY APPROVALS

Regulatory Approvals	
Safety	UL/CUL/IEC(CB) 61010-2-201
Industry Specific	IEC61850-3 (Including 6.10.3 Seismic test), IEEE 1613
EMC	FCC Part 15, Subpart B, Class A EN 55032, EN 55024, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-4,

Test	Item		Value	Level
IEC 61000-4-2	ESD	Contact Discharge Air Discharge	±8KV ±15KV	4 4
IEC 61000-4-3	RS	80-1000MHz 1.0-3.0GHz	20(V/m) 10(V/m)	3 3
IEC 61000-4-4	EFT	AC Power Port DC Power Port Signal Port	±4.0kV @5.0kHz ±4.0kV @5.0kHz ±4.0kV @5.0kHz	4 4 4
IEC 61000-4-5	Surge	AC Power Port AC Power Port DC Power Port DC Power Port Signal Port	Line-to Line ±2.0kV Line-to Earth ±4.0kV Line-to Line ±1.0kV Line-to Earth ±2.0kV Line-to Earth ±4.0kV	4 4 3 3 4
IEC 61000-4-6	CS	AC Power Port DC Power Port Signal Port	10V, 150kHz~80MHz, 80% AM 10V, 150kHz~80MHz, 80% AM 10V, 150kHz~80MHz, 80% AM	3 3 3
IEC 61000-4-8	PFMF	Enclosure	100A/m continuous, 1000A/m for 1S	5 5
IEC 61000-4-11	DIP	AC Power Port	Drop 70% 3 times/S (1 Period) Drop 40% 3 times/1mS (50 Period) Drop 100% 3 times/50mS (5&50 Period)	N/A
RoHS II	Yes			
MTBF	20 Years			
Warranty	5 Years			

Notes: All series is UL61010-2-201 certified, except *HV series

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ORDERING INFORMATION

Ordering information

Model name	Part Number	Description
EHG9608-2SFP	1P1EHG96080001G	2P*1000FX SFP; 6P*1000TX RJ45; Power Input: DC
EHG9608-2SFP-HV	1P1EHG96080002G	2P*1000FX SFP; 6P*1000TX RJ45; Power Input: HV
EHG9608-2SFP-AC	1P1EHG96080003G	2P*1000FX SFP; 6P*1000TX RJ45; Power Input: AC
EHG9612-4SFP	1P1EHG96120001G	4P*1000FX SFP; 8P*1000TX RJ45; Power Input: DC
EHG9612-4SFP-HV	1P1EHG96120002G	4P*1000FX SFP; 8P*1000TX RJ45; Power Input: HV
EHG9612-4SFP-AC	1P1EHG96120003G	4P*1000FX SFP; 8P*1000TX RJ45; Power Input: AC

Optional Accessories

Model name	Part Number	Description
Wall Mount Set	70100000000056G	45.4 x 22.8 x 1.5 mm Aluminum wall mount Kit with screw
CBL-RJ45(8P)-DB9(F)-90-C	50891971G	RJ45 to DB9 Female Cross Over Console Cable, 90cm
SDR-75-24	50500752240001G	75W/3.2A DIN-Rail 24VDC power supply 88~264VAC / 124~370VDC input
AXGD-5854-0513	522AXGD5854001G	SFP Transceiver, 1250Mbps, 850nm, Multi-mode, 550m, 3.3V, -40~85°C, DDMI
AXGD-1354-0523	522AXGD1354001G	SFP Transceiver, 1250Mbps, 1310nm, Multi-mode, 2km, 3.3V, -40~85°C, DDMI
AXGD-1354-0533	522AXGD1354011G	SFP Transceiver, 1250Mbps, 1310nm, Single-mode, 10km, 3.3V, -40~85°C,DDMI
AXGD-3354-0593	522AXGD3354001G	SFP Transceiver, 1250Mbps, 1310nm, Single-mode, 40km, 3.3V, -40~85°C,DDMI

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