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RELIABLE SECURE CONNECTIVITY

XEG9500 Series

8 or 12-Port IEC61850-3 Certified Managed Layer-2 Gigabit Switch



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FEATURE HIGHLIGHTS

- **IEC61850-3 Certified, DNV.GL (former KEMA) tested**
- **Up to 6 or 8 10/100/1000 BASE-T(X) ports and 2 or 4 1000 BASE-X SFP ports**
- **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 (Client) for network redundancy**
- **Remote management over Web browser, Telnet, Serial console, Utility**
- **PROFINET v2 Class B compatible**
- **Provides Generic Station Descr. file for integration with SIMATIC Step 7**

PRODUCT DESCRIPTION

The XEG9508/XEG9512 Switches 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 is also certified by DNL.GL (formerly known as KEMA) to meet 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 XEG9508/XEG9512 Switches 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 8 10/100/1000BASE-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 (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 XEG9508/XEG9512 Switches 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.

SPECIFICATION

Technical Specifications	
Model Name	**XEG9508/XEG9512 Switches**
Switch Properties	
Priority Queues	8
VLAN Table	4096
MAC-Based VLAN	512
VLAN ID Range	VID 1 to 4094
Trunk Group	4
Static IGMP Groups	128
Dynamic IGMP Groups	256
MAC Table Size	16K
Packet Buffer Size	1.5 MB
Jumbo Frame	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 (Client), LLDP, IEEE 1588 PTP V1/V2, IEEE 1588 Hardware-Assisted End-to-End Transparent Clock and Software-assisted Boundary Clock, MRP (Client), 802.1x, EAP, RADIUS, TACACS+, Mirror port, QoS, ACL, Serial Console, U-Ring, STP, RSTP, MSTP, Redundancy Compatible Ring
Automation Profiles	Profinet CC-B compatible, Ethernet/IP ready, 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
Power	
Input Voltage	24-57 VDC 100~240 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	Up to 8 10/100/1000BASE-T(X) auto negotiation speed
Fiber Optics Ports	Up to 4 1000BASE-X SFP slot
LED Indicators	PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ-45 Link/Speed, SFP Link,
Console	RS232 (RJ45 connector)
Relay Output	2 relay outputs with current carrying capacity of 1A @ 24 VDC
DIP Switches	Ring Control
Button	Reset Button

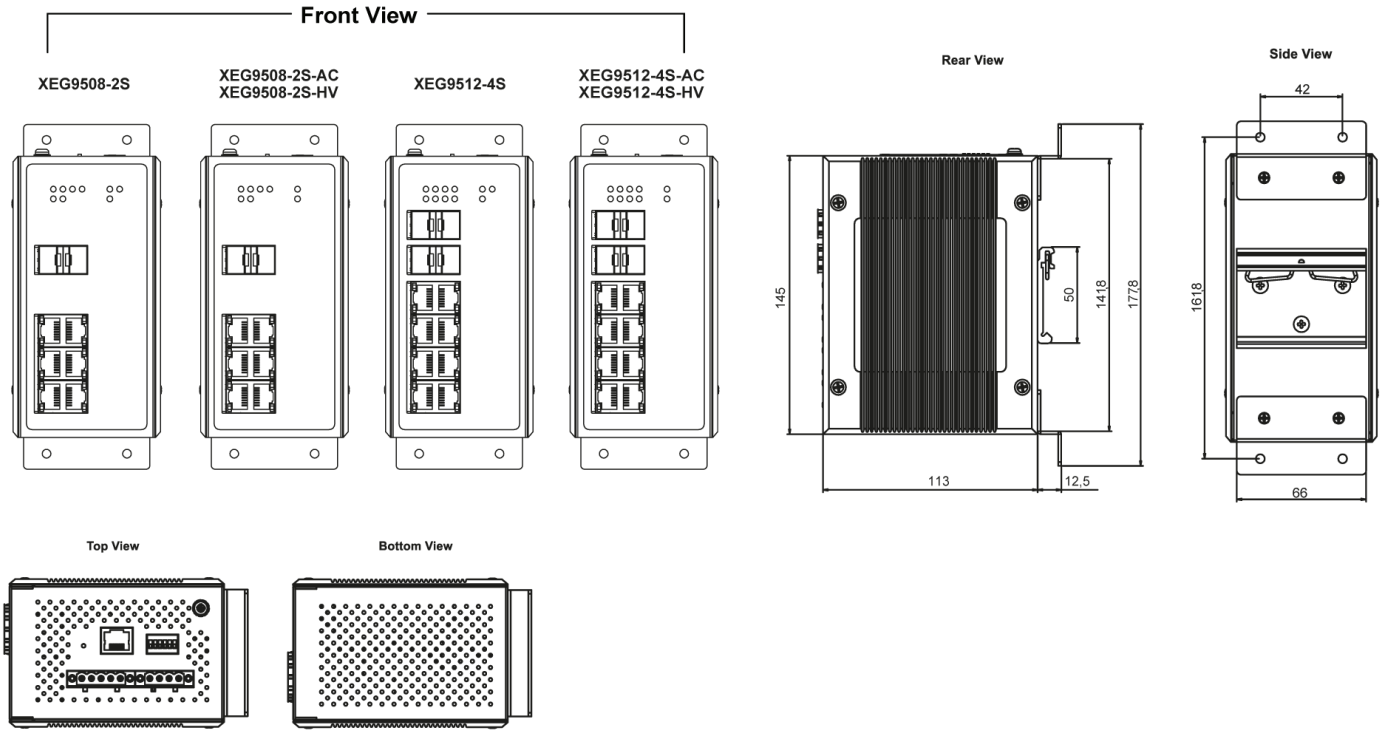
Physical Characteristics	
Housing	IP30 SPCC, Black housing
Dimension (W x H x D)	77 x 145 x 113 mm
Weight	1,000g (AC/HV versions) / 1,200g (other)
Installation	DIN-Rail , Wall mount (optional kit)
Environmental Limits	
Operating Temperature	-40°C~85°C (-40°F~185°F)
Storage Temperature	-40°C~85°C (-40°F~185°F)
Ambient Relative Humidity	5%~95% RH, 55°C (Non-condensing)

REGULATORY APPROVALS

Regulatory Approvals				
Safety	UL/CUL/IEC(CB) 61010-2-201			
Industry Specific	IEC61850-3 (Including 6.10.3 Seismic test), IEEE 1613 IEC61850 DNV.GL (former KEMA) functional test			
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	10(V/m) 80% AM	3 3
IEC 61000-4-4	EFT	AC Power Port DC Power Port Signal Port	±4.0kV @2.5kHz ±4.0kV @2.5kHz ±2.0kV @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 3S	5 5
IEC 61000-4-10	Damped Oscillatory Magnetic Field	Enclosure	100A/m, 100KHz, 1MHz	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
Shock **Drop** **Vibration**	MIL-STD-810G Method 516.5 MIL-STD-810F Method 516.5 MIL-STD-810F Method 514.5 C-1 & C-2			
RoHS II	Yes			
MTBF	20 Years			

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

DIMENSIONS & LAYOUT



ORDERING INFORMATION

Ordering information		
Model name	**10/100/1000 RJ45**	**1000Base(X) SFP**
XEG9508-2S	6	2
XEG9508-2S-HV	6	2
XEG9508-2S-AC	6	2
XEG9512-4S	8	4
XEG9512-4S-HV	8	4
XEG9512-4S-AC	8	4

OPTIONAL ACCESSORIES

Optional Accessories	
Model name	**Description**
Wall Mount Set	45.4 x 22.8 x 1.5 mm Aluminum wall mount Kit with screw
XCC-RJ45-DB9-90-F	RJ45 to DB9 Female Cross Over Console Cable, 90cm
XDP-75-24	75W/3.2A DIN-Rail 24VDC power supply 88~264VAC / 124~370VDC input
XTR-28-SX-550M	SFP Transceiver, 1250Mbps, 850nmVCSEL, Multi-mode, 550m, 3.3V, -20~85°C
XTR-38-SX-2K	SFP Transceiver, 1250Mbps, 1310nmFP, Multi-mode, 2km, 3.3V, -40~85°C
XTR-38-LX-10K	SFP Transceiver, 1250Mbps, 1310nmFP, Single-mode, 10km, 3.3V, -40~85°C
XTR-38-LX-30K	SFP Transceiver, 1250Mbps, 1310nmDFB, Single-mode, 30km, 3.3V, -40~85°C

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WHO WE ARE

Built on 20 years of experience in designing and manufacturing industrial networking products, **Agatel** was established from the UK to serve the infrastructure and industrial sectors in EMEA markets with reliable connectivity for mission-critical systems in demanding environments.

Experienced in hardware and software design and integration, we produce high-quality yet cost-effective industrial networking and communication products with great customization capabilities and robust implementations, equipping our customers for reliable secure industrial networks.

WHAT WE OFFER

The needs of our customers' industry are different from those of corporate IT environments – industrial operating environments are tough and the impact of failure in the field can lead to business threatening situations, hence our products will have lifetimes in excess of 20 years.

From entry-level to high-performance industry-certified hardware, **Agatel** offers a full solution spectrum to suit our customers' budgets and application requirements, with features such as industrial-grade reliability, integrated security, network redundancy, and advanced performance.

Our product solution profile includes industrial Ethernet switches, network time servers, media converters, industrial wireless devices, and serial device servers, covering a wide array of mission-critical applications such as automation, security, transport, water, oil and gas, and power grids.

WHY CHOOSE US

We help our customers reduce downtime and operational costs of their industrial applications in harsh environments. Leading system integrators in EMEA rely on our niche technical expertise and product quality to increase their applications' robustness, revenues, and competitive differentiation.

Agatel ruggedized high-quality solutions are designed to deliver zero-network-downtime for harsh project demands, allowing for reliable connectivity to keep people and assets safe and secure in harsh and hazardous environments, and allowing customers to focus on growing their business.

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