FEATURE HIGHLIGHTS

- Up to 16 10/100/1000 RJ45 ports or 100/1000 BASE-X SFP slots, plus 4 dedicated 1/10G Uplink SFP slots
- Up to 8x 802.3af/ 802.3at PoE/PoE+ Power over Ethernet ports, with maximum 30W PoE power per port and up to 240W power budget
- Powerful Layer-3 Switching, supporting BGPv4, IPv4 Static, RIPv1/v2 and OSPFv2
- Redundancy through ITU-T G.8032 ERPS Ring, RSTP, STP, MRP (Manager/ Client), compatible rings and compatible chains
- UL 62368-1:2014, CE/FCC, NEMA TS-2 certified for traffic control
- IEEE 1588v2 Precision Time Protocol Hardware-Based End-to-End TC
- Wide temperature operations, from -40°C to 70°C

PRODUCT DESCRIPTION

Flexible and cost-effective, this is an ideal industrial solution where high-throughput and high-reliability are fundamental. Especially with NEMA TS-2 Certification, this series is the perfect choice for Smart City and Traffic Control applications.

Unprecedented throughput and power:

ATOP's EHG7612/16/20 Series offers 24 versions of **up to 20 Gigabit ports**, with different port configurations in copper, PoE or fiber, all of which include **4 x 1/10 Gigabit Ethernet SFP uplinks**.

Specifically designed for bringing power through Ethernet cables virtually anywhere, it supports a maximum of 8 PoE/PoE+ ports (802.3af/at) to produce **up to 240W** Power over Ethernet output.

Rugged and reliable:

This switch series is EN61000-6-2, EN61000-6-4, IEC/EN/UL62368-1:2014 and FCC certified, able to withstand the harshest environments and the most demanding EMC environment for almost any application. NEMA TS-2 certification further ensures that it is the **perfect choice for smart cities and traffic control**. Its fanless design and EMC Level 3 protection guarantee reliable operations between -40 and +70°C, and zero packet loss even with all ports running full power.
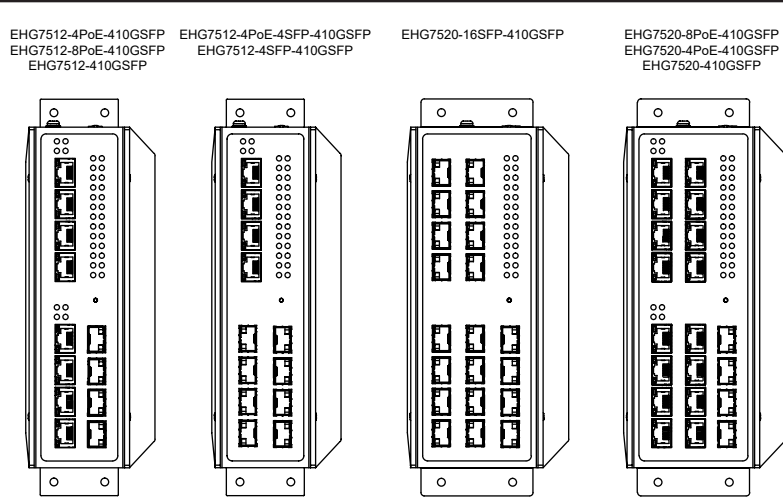
High-performance network redundancy functions provide **self-recovery in less than 20ms** on full load, enabling a reliable network through almost any redundant ring topology such as ITU-T G.8032 ERPS Ring, IEEE802.1D-2004 RSTP, STP, MSTP, MRP (Manager/ Client), iA-Ring, and iA-Chain.

Secure and smart:

To prevent network intrusions, it is necessary to have a good accessing control mechanism that can **identify, authenticate and authorize users**. EHG7612/16/20 supports user account, password policy, and authentication interface management functions that comply with IEC62443 standards. The multifunctional web dashboard also offers further **intelligent features** such as Quality of service (QoS) per port or per VLAN, VLAN, IGMP and port mirroring. Layer-3 routing support BGPv4, IPv4 static routing, RIP v1/v2 and OSPFv2.

DIMENSIONS & LAYOUT

Front View

EHG7512-4PoE-410GSFP
EHG7512-8PoE-410GSFP
EHG7512-410GSFP

EHG7512-4PoE-4SFP-410GSFP
EHG7512-4SFP-410GSFP

EHG7520-16SFP-410GSFP

EHG7520-8PoE-410GSFP
EHG7520-4PoE-410GSFP
EHG7520-410GSFP

Back View

Side View

Top View

Bottom View

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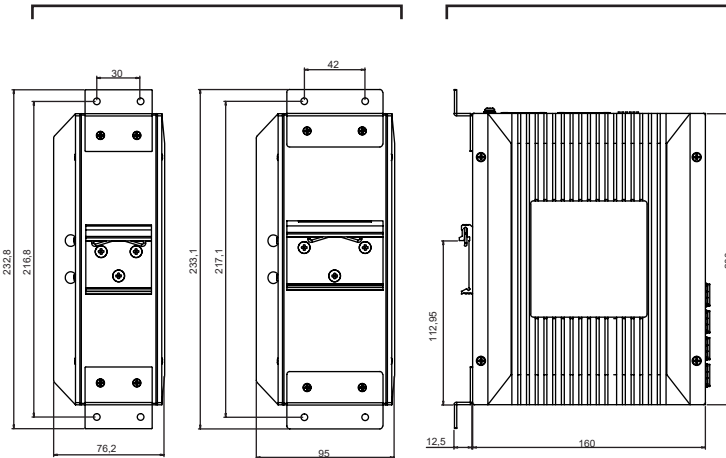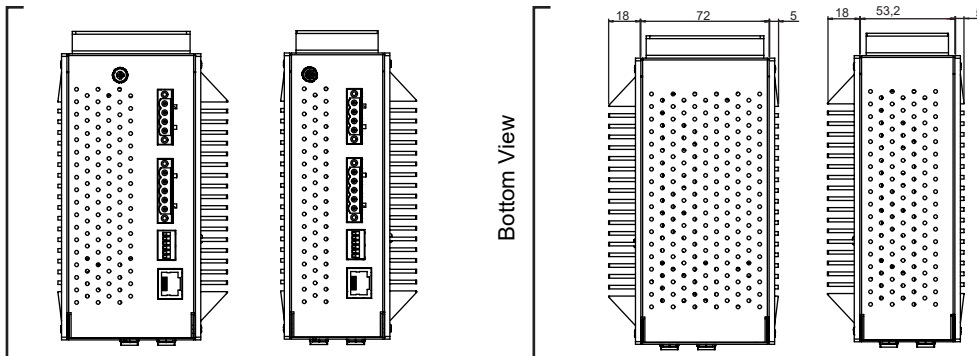
SPECIFICATIONS

Technical Specifications	
Model Name	EHG7612 (12 ports) ; EHG7616 (16 ports); EHG7620 (20 ports)
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 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseX IEEE 802.3ae For 10 Gigabit Ethernet Fiber IEEE 802.3x for Flow Control, back pressure flow 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 802.1X for Authentication IEEE 802.3ad for Port Trunk with LACP IEEE 802.3az for Energy Efficient Ethernet
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, SMTP, SMTP (Gmail), RMON, HTTP, HTTPS, Syslog, MRP (Manager/ Client), LLDP, 802.1x, EAP,RADIUS, TACACS+, Mirror port, QoS, ACL, BGPv4, 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
Time Synchronization	Network Synchronization	NTP Server/Client, SNTP
	Precision Network Synchronization	IEEE1588v1 OC/BC (Software) IEEE1588v2 E2E TC (Hardware) - ns acc. IEEE1588v2 OC/BC (Software)
Automation Profiles	Modbus/TCP device 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, RFC 2674	

Power	
Input Voltage	9-57 VDC for Non-PoE models 45-57 VDC for 802.3af mode 51-57 VDC for 802.3at mode
Input Current (System)	Max. 2.2A @ 9 VDC (without PoE) Max. 3.3 A @ 45 VDC (Support up to 8 ports at 15.4 W per PoE port) Max. 5.2 A @ 51 VDC (Support up to 8 ports at 30 W per PoE port)
Power Consumption (System)	Max. 19.8 W @ 9 VDC (without PoE) Max. 148.5 W @ 45 VDC (Support up to 8 ports at 15.4 W per PoE port) Max. 265.2 W @ 51 VDC (Support up to 8 ports at 30 W per PoE port)
Connector Reverse Polarity Protection	5-Pin 5.08 mm Lockable Terminal Block Yes
Interfaces	
RJ45 Ports Fiber Optics Ports LED Indicators Console Relay Output DIP Switches Button	Up to 16 10/100/1000BASE-T(X) auto negotiation speed Up to 16 100/1000BASE-X SFP slot plus 4 1000BASE-X or 4 10G SFP slots PWR1, PWR2, Alarm, Run, Ring, Ring Master, RJ-45 Link/Speed, SFP Link, PoE 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 Metal housing, ruggedized heat-sink EHG7612: 76 x 200 x 160 mm; EHG7616-EHG7620: 95 x 200 x 160 mm 2,500 g DIN-Rail, Wall mount (optional kit)
Environmental Limits	
Operating Temperature Storage Temperature Ambient Relative Humidity	-40°C to +70°C (-40°F to +158°F) -40°C to +85°C (-40°F to +185°F) 5% to 95% (Non-condensing test @55°C)

REGULATORY APPROVALS

Regulatory Approvals				
Safety	UL62368-1, 2nd Ed., CSAC22.2 No. 62368-1-14, AS/NZS62368:2018, EN62368-1:2014+A11:2017			
Traffic Control	NEMA TS-2			
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	±6 kV ±8 kV	3 3
IEC 61000-4-3	RS	80-1000 MHz 1.4-2.0 GHz 2.0-2.7 GHz	10 (V/m) 3 (V/m) 10 (V/m)	3 3 3
IEC 61000-4-4	EFT	AC Power Port DC Power Port Signal Port	±2.0 kV ±2.0 kV ±1.0 kV	3 3 3
IEC 61000-4-5	Surge	DC Power Port DC Power Port Signal Port	Line-to-Line ± 1.0 kV Line-to-Earth ± 2.0 kV Line-to-Earth ± 2.0 kV	3 3 3
IEC 61000-4-6	CS	0.15-80 MHz	10V rms	3
IEC 61000-4-8	PFMF	Enclosure	30 V/m	4
IEC 61000-4-11	DIP	AC Power Port	-	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			

ORDERING INFORMATION

Ordering information					
Model name	Part Number	Description			
		RJ45Port 1G	RJ45Port PoE 1G	SFP Port 1G	SFP Port 10G
EHG7612-8PoE-410GSFP	1P1EHG76120001G	0	8	0	4
EHG7612-410GSFP	1P1EHG76120002G	8	0	0	4
EHG7612-4PoE-410GSFP	1P1EHG76120003G	4	4	0	4
EHG7612-4SFP-410GSFP	1P1EHG76120004G	4	0	4	4
EHG7612-4PoE-4SFP-410GSFP	1P1EHG76120005G	0	4	4	4
EHG7616-410GSFP	1P1EHG76160001G	12	0	0	4
EHG7616-4PoE-410GSFP	1P1EHG76160002G	8	4	0	4
EHG7616-8PoE-410GSFP	1P1EHG76160003G	4	8	0	4
EHG7616-4SFP-410GSFP	1P1EHG76160004G	8	0	4	4
EHG7616-4PoE-4SFP-410GSFP	1P1EHG76160005G	4	4	4	4
EHG7616-8PoE-4SFP-410GSFP	1P1EHG76160006G	0	8	4	4
EHG7616-8SFP-410GSFP	1P1EHG76160007G	4	0	8	4
EHG7616-4PoE-8SFP-410GSFP	1P1EHG76160008G	0	4	8	4
EHG7616-12SFP-410GSFP	1P1EHG76160009G	0	0	12	4
EHG7516-8PoE-410GSFP (Marine)	1P1EHG7516000AG	4	8	0	4
EHG7620-410GSFP	1P1EHG76200001G	16	0	0	4
EHG7620-4PoE-410GSFP	1P1EHG76200002G	12	4	0	4
EHG7620-8PoE-410GSFP	1P1EHG76200003G	8	8	0	4
EHG7620-4SFP-410GSFP	1P1EHG76200004G	12	0	4	4
EHG7620-4PoE-4SFP-410GSFP	1P1EHG76200005G	8	4	4	4
EHG7620-8PoE-4SFP-410GSFP	1P1EHG76200006G	4	8	4	4
EHG7620-8SFP-410GSFP	1P1EHG76200007G	8	0	8	4
EHG7620-12SFP-410GSFP	1P1EHG76200008G	4	0	12	4
EHG7620-4PoE-12SFP-410GSFP	1P1EHG76200009G	0	4	12	4
EHG7620-16SFP-410GSFP	1P1EHG7620000AG	0	0	16	4

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Optional Accessories

Model name	Part Number	Description
WMK-450-Black	70100000000052G	Metal wall mount kit, screw spacing 25 mm (use with EHG7612)
Wall mount set	70100000000056G	Metal wall mount kit, screw spacing 38 mm (use with EHG7616/EHG7620)
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
SDR-240-48	50502401480001G	240W/5A DIN-Rail 48-55VDC power supply 88-264VAC / 124-370VDC input
SDR-480-48	50504801480001G	480W/10A DINRail 48-55VDC power supply 88-264VAC /124-370VDC input
AXFD-1314-0523	522AXFD1314001G	SFP Transceiver, 155Mbps, 1310nm, Multi-mode, 2km, -40/+85°C, DDMI
AXFD-1314-0553	522AXFD1314011G	SFP Transceiver, 155Mbps, 1310nm, Single-mode, 30km, -40/+85°C, DDMI
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
AXXE-5886-05B3	522AXXE5886001G	SFP Transceiver, 10Gbps, 850nm, Multi-mode, 300m, -40/+85°C

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