Chipsmall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

atop
Technologies

2017-2018

INDUSTRIAL NETWORKING PRODUCTS

Engineered and
manufactured
in Taiwan

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Industrial Networking

Introduction

Championed as the Fourth Industrial Revolution, Industry 4.0 is an emerging business practice that is set to revolutionize manufacturing with the creation of the Smart Factory. Eliminating efficiencies and responding to individual consumer demand, the Smart Factory makes use of interconnected advanced robotics, Big Data Analytics, and Industrial Connectivity and Services.

Much of what underpins this revolution is the use of Industrial Ethernet-based networks. But although Ethernet has become the new backbone standard of Industrial Automation, Serial-based devices still remain highly relevant today. So by connecting legacy devices with the latest equipment, existing industries can take advantage of the latest improvements in technological efficiencies without resorting to inefficient wholesale upgrades.

With over 25 years of experience, ATOP has built a reputation for developing and manufacturing networking hardware that delivers solutions to the problems that Industries face in adopting the latest standards and industry innovations, such as incorporating Industry 4.0 and IIoT practices into networks that still rely on Serial-based devices.

Informed by our experience of providing for our customers from a variety of different industries, our range extends from entry level to high-performance hardware that operate in the harshest of environments and the under the most demanding network loads. So in addition to supplying reliable, secure, and cost-effective hardware, our Industrial Ethernet switches feature advanced security features such as redundancy (through RSTP, ERPS, MRP Rings or High Availability protocols such as HSR/PRP), QoS, VLAN management, LACP link aggregation/port trunking, and Layer-3 routing.

ATOP's Added Experience

With over 25 years of experience, ATOP has built a reputation for developing and manufacturing hardware that performs reliably in harsh environments, that offers security and encryption, and that has the performance and fast repsoniness to make sure that your network performs and delivers under any circumstances.

Reliability

With MTBF of up to 25 years, ATOP's range of hardware is built to minimize downtime events. Built-in redundancy features such as Ethernet Ring Protection Switching (ERPS), Rapid Spanning Tree Protocol (RSTP) and Media Redundancy Protocol (MRP) ensure ideal upkeep times.

For instance, in the event of a link or device failure, ATOP's Smart-Redundancy Feature detects the failure and relays the cause of the failure to the control center, automatically recovering from the failure to provide continuous operation.

SCADA

Control Room

PROTOCOLS
- Ethernet - Fiber
- Ethernet - Copper
- Process Bus

RHG9528
Ethernet Switch

EHG7508
Ethernet Switch

EHG9512
Ethernet Switch

ERPS Ring
With self-recovery mechanism in less than 20 ms

IED IED IED

Circuit breaker Transformer Circuit breaker

IED
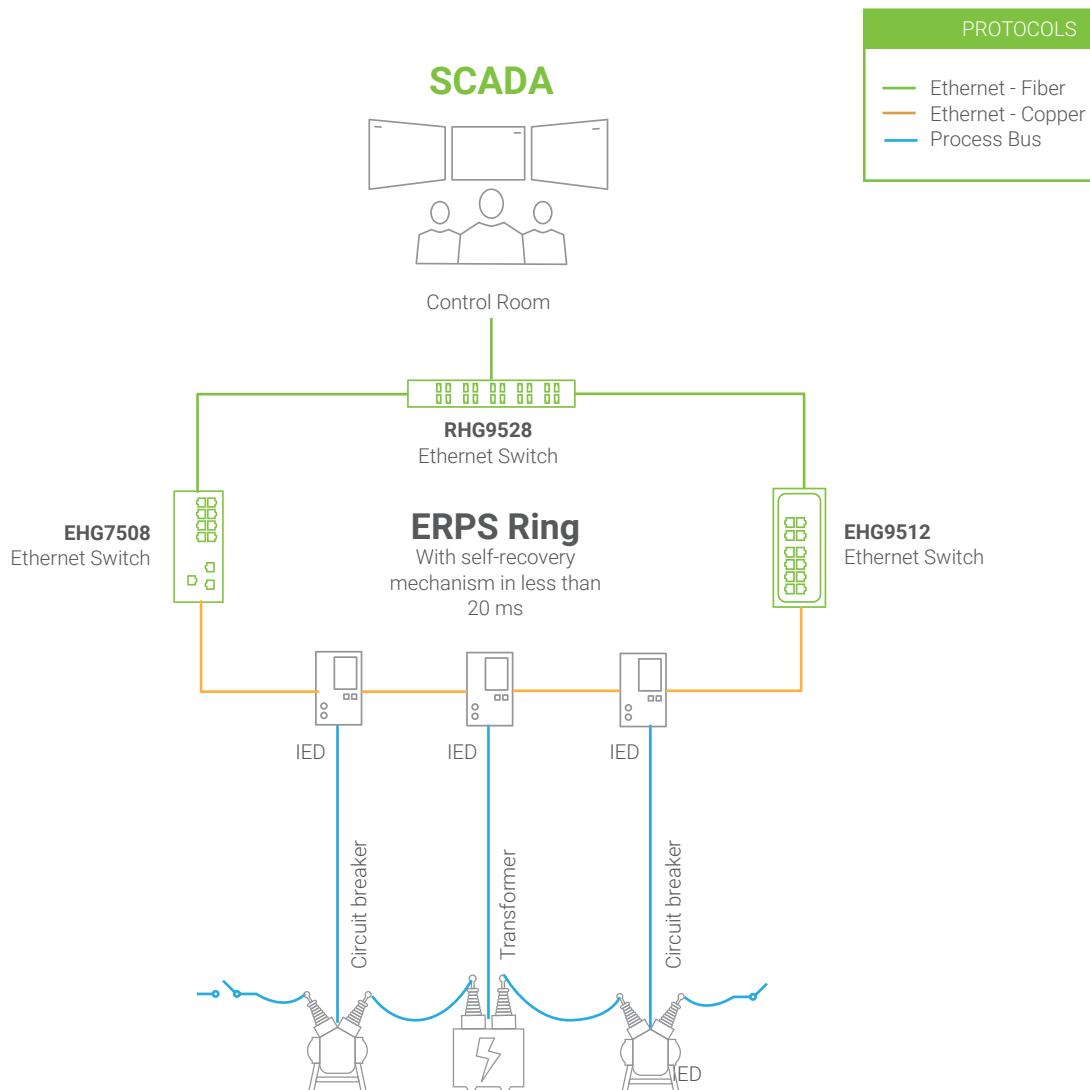
FEATURED PRODUCTS

EHG7508 : Industrial 8-Port PoE Managed Gigabit Switch (-20~70 °C)

- 8 10/100/1000 RJ45 ports or 1000 SFP slots
- maximum 8 x 30 W PoE ports (240W power budget) `
- Profinet CC-B compatible; Ethernet/IP; ERPS, RSTP, STP, MRP Client redundancy;
- IEEE 1588v2 Hardware-assisted TC and many others

EHG9512 : IEC 61850-3 12-Port Managed Gigabit Switch (-40~85 °C)

- 8 x 10/100/1000 RJ45 ports and 4 Gigabit SFP uplink slots
- IEC 61850-3, IEEE 1613 certified
- UL/cUL/IEC(CB) 61010-2-201 certified
- IEEE 1588v2 Hardware-assisted TC; ERPS, RSTP, STP, MRP Client redundancy;

RHG9528 : IEC 61850-3 modular Managed Switch, max 24 Gigabit and 4 x 10 GbE ports (-40~85 °C)

- 3 x 8-port Gigabit module slots and 4x 1 or 10 Gigabit SFP uplink slots
- Available modules: 8 x 10/100/1000 RJ45 or 8 x 100/1000 SFP
- IEC 61850-3, IEEE 1613, UL/cUL/IEC(CB) 61010-2-201 certified
- IEEE 1588v2 Hardware-assisted TC; ERPS, RSTP, STP, MRP Client redundancy;

Harsh Environments

From blast furnaces to operating in sub-zero degree environments, ATOP's line of hardware is designed to withstand the harshest of environments. Supporting temperatures range of -40°C to +85°C, our hardware uses industrial-grade materials to guarantee also a long MTBF. And because our devices feature fanless designs to reduce the number of moving parts, breakdowns and failures are reduced, thereby prolonging the operational lifetime of your investment.

Electromagnetic Interference and Susceptibility

High-voltages and electromagnetic interferences in factories can be fatal if installed devices are not properly shielded and isolated from electromagnetic discharges. **Without proper precautions, equipment failures become possible** – for instance, a 2,000-Volt surge applied to a power supply unit can cause severe system damage. Devices should also be also be designed in a way so as to not interfere with their surrounding equipment, as their own radiated emissions can generated noise and interference.

ATOP's hardware conforms with high Electromagnetic Susceptibility (EMS) and Electromagnetic Interference (EMI) standards. And that's in addition to conforming with Level 3 and Level 4 Electromagnetic Compatibility (EMC), making ATOP's hardware compliant with the strictest regulations for susceptibility and interference – such as UL61010, UL60950 and EN61000-6-2 and EN61000-6-4.

Network Security and Data Encryption

With more and more devices coming online, security for Industry 4.0 and IIoT is a pressing issue. The more devices that can be remotely controlled in smart factories, the more points of entry become susceptible to various threats and malicious activities, such as network penetration, which can disrupt operations or threaten the control of systems themselves.

To combat this, ATOP's hardware features security solutions to provide seamless and cost-effective security and encryption: MACsec for security over LANs; and IPsec and OpenVPN for security over WANs and the Internet.

MACsec (or IEEE 802.1AE protocol) enhances your network with hop-to-hop AES 128-bit encryption, and defines how Public and Private keys are managed. If both connected devices support MACsec, then Encryption Key is automatically negotiated from a Pre-Shared Key, or set manually. From that point on, all data transferred through the link will be encrypted at the source with high performance computing hardware to guarantee full bandwidth utilization and decryption on arrival. If the other end does not support MACsec, the data will be transmitted without encryption, meaning that backwards compatibility is still offered.

ATOP is a pioneer in the security of network devices. We have introduced a whole new range of products. This includes, Managed L2 and L3 switches, and a cost-effective unmanaged smart and secure switch. With the 128-bit encryption managed through hardware our solutions provide a seamless experience and unprecedented performance.

ATOP's Routers and Serial device servers provide embedded security measures, through VPNs using IPSec encryption, so that all data going in and out of devices can be properly protected from potential attacks.
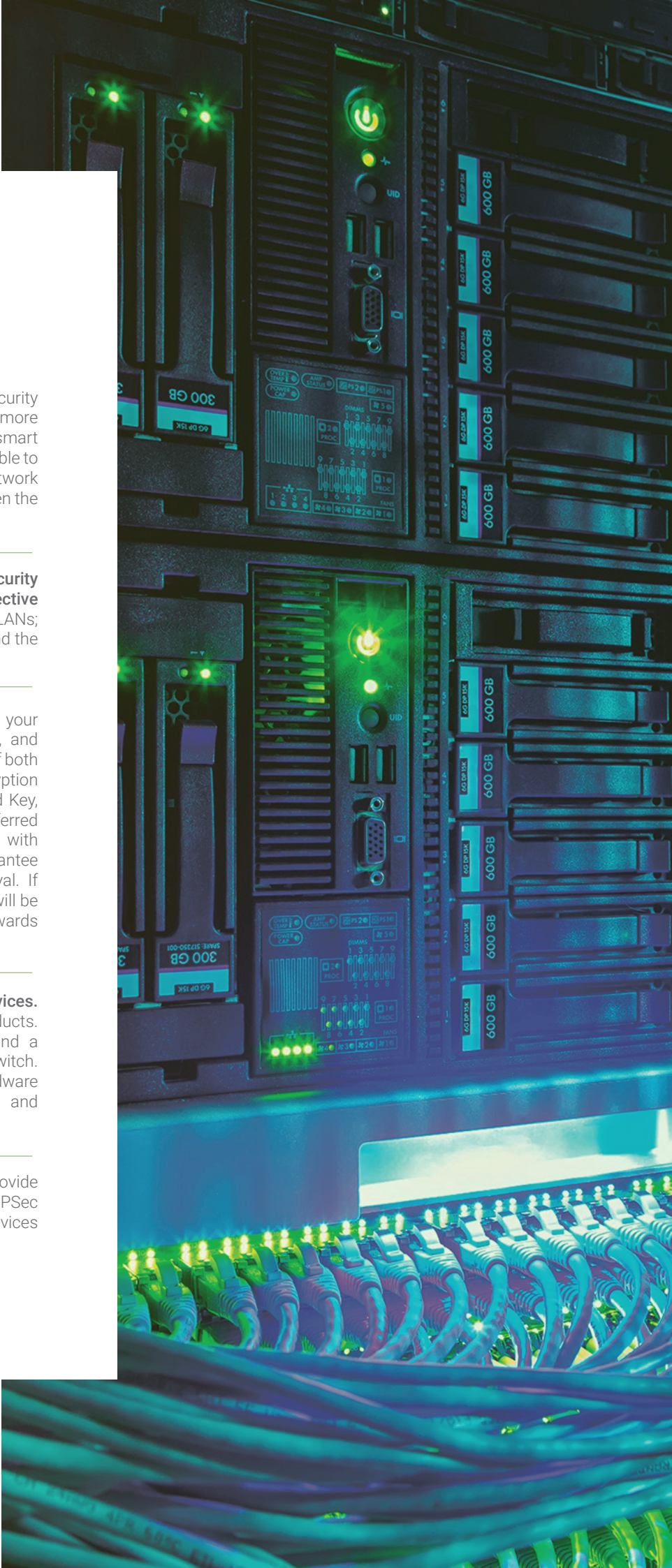
Performance and Responsiveness

Integrating new network hardware with legacy network equipment can often be difficult. For instance, new technologies offer much wider bandwidths and have stricter performance requirements, so integration can be a slow process when trying to match performance discrepancies, such as differences in speed or data throughput.

ATOP is able to solve these types of problems in several ways. For example, our new network devices can autonomously poll data from legacy network devices and store them in an internal memory. A master device running on a newer protocol or higher physical layer can then request the updates at a later point. This helps to reduce bottlenecks, while also increasing system performance.

...our Application Example

IPcam surveillance

Picking PDA

SE5901B

Delocalized unit

RHG7628

Access Point
AW5500

Wireless
Pick to
Light

Warehouse

Secure IPSec VPN Tunnel

Internet

Redundant ring

ISP

Router

RHG7628

RHG7628

PLC/I-O

IPCam surveillance

IPCam surveillance

EHG7508
Profinet
managed switch

EHG2308
Unmanaged
switch

DVR
Digital Video Recorder

Office building

Workshop

Profinet
Actuator
(e.g. valve)

Profinet
Sensor (e.g.
Thermometer)

SE5904D
Serial server

PROTOCOLS

— Copper or Fiber Ethernet
— Wireless
— 10 Gigabit Ethernet Fiber
backbone

...more information on our Application Example

RHG7628 - Layer-3 Modular Gigabit Managed PoE Rack-Mount Switch

- Modular architecture for up to 24 Gigabit ports and 4x1 or 4x10 Gigabit Ethernet uplink SFP slots.
- Flexible configuration allows PoE, RJ45, SFP, secure RJ45-SFP ports to be embedded in one device.
- Up to 24 PoE/PoE+ 802.3af-802.3at ports, with maximum 720 W power budget
- -40~75 °C Operating temperature. CE/FCC certified and UL/cULus listed.
- Profinet Conformance Class B v2.33 certified
- Redundancy through ERPS/RSTP/STP/MSTP/MRP (client) protocols
- IEEE 1588v2 hardware-based End-to-End transparent clock

EHG7508 - DIN-Rail 8-Port Managed Gigabit Ethernet PoE switch

- 8 Gigabit ports, in different RJ45/PoE/SFP configurations.
- Up to 8 802.3af 802.3at PoE/PoE+ ports allowing 240 W maximum PoE power Budget
- -20~70 °C Operating temperature. CE/FCC certified and UL/cULus listed
- Profinet Conformance Class B v2.33 certified
- Redundancy through ERPS/RSTP/STP/MSTP and MRP (client).
- Redundant power supply and relay output.

EHG2308 - DIN-Rail 8-Port Unmanaged Gigabit Ethernet switch

- 8-Gigabit RJ45 ports
- -10~70 °C Operating temperature
- Profinet packet priorization according to 802.1p
- UL/cULus listed
- Redundant power input

SE5901B - DIN-Rail 3G/4G LTE Industrial Serial Device Server

- One Gigabit RJ45 port
- One sw-selectable RS-485/232 serial port
- Battery Feature [opt] provides up to 30s additional power for alarm relay in case of power failure
- 2 Digital inputs / 2 Relays [optional]
- -40~75 °C Operating temperature

AW5500 - DIN-Rail IEEE 802.11 a/b/g/n high-performance Access Point

- IEEE 802.11 abgn radio, supporting 2 x 2 MIMO, 2.4 and 5.0 GHz
- One 10/100/1000 RJ45 Ethernet port
- -10~60 °C Operating temperature
- Different operating mode and Topology Options (WDS Bridge and AP Client)
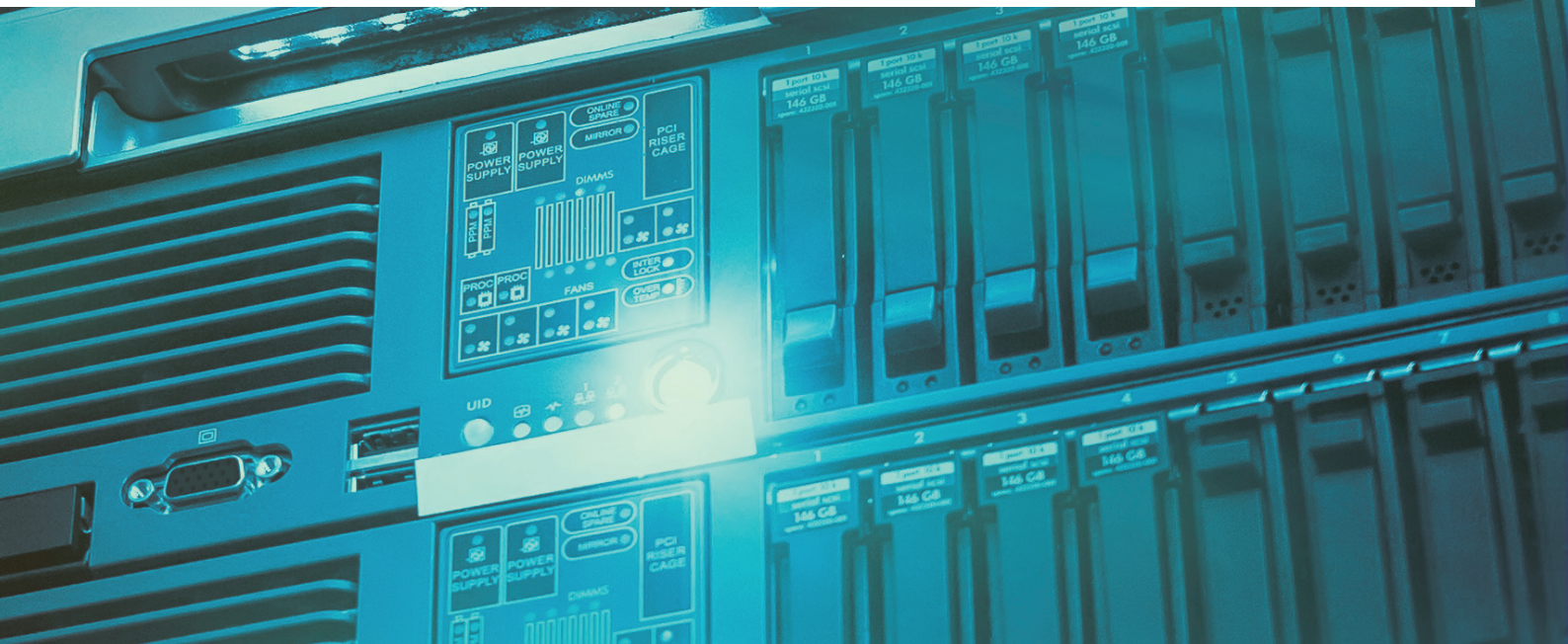
Entry Level Switches

Unmanaged Entry-Level Switches

ATOP's Entry Level Unmanaged Switches offer a reliable, robust, and cost-effective solution for simple network topologies.

Rated IP30, all of them are Industrial EMC-certified: EN610006-4 and EN61000-6-2. Utilising either aluminum, steel, or plastic housing to suit different application environments and budgets, all models support redundant power-input for enhanced safety and feature DIN - Rail mounting. They can operate in temperatures ranging from -10°C to 70°C (units with plastic housing can operate within a range of 0°C to 60°C). For enhanced safety and backup, redundant power supplies feature on every model.

Our products feature 4 to 8 Fast Ethernet or Gigabit Ethernet ports. Selected versions have single-mode or multi-mode Fiber optic uplink, and selected versions feature Power over Ethernet (PoE) and Gigabit speeds. And as unmanaged switches, they require no configuration efforts. Selected products support Packet Prioritization for Profinet according to 802.1p.

Unmanaged Fast-Ethernet Switches, DIN-Rail mount, Plastic Housing

60°C · 0°C · DIN · IP30 IEC60529

	SKU	Description	10/100 RJ45 ports	10/100 /1000 RJ45 ports	Fiber ports	Max PoE Ports	Additional features
	EH2005-Fm	5-Port Unmanaged Switch with Fiber Optics, plastic	4	-	1 multi-mode max 2 Km	-	
	EH2005-Fs	5-Port Unmanaged Switch with Fiber Optics, plastic	4	-	1 Single-mode max 20 Km	-	
	EH2006	6-Port Unmanaged Switch, Plastic	6	-		-	

Unmanaged Fast-Ethernet Switches, DIN-Rail mount, Metal Housing

70°C · -10°C · DIN · IP30 IEC60529

	SKU	Description	10/100 RJ45 ports	SFP slots	Fiber ports	Max PoE Ports	Additional features
	EH2305-1Fm	5-Port Unmanaged Switch with Fiber Optics, Metal Housing	4	-	1 (Multi-Mode) – max 2 Km	-	
	EH2305-1Fm	5-Port Unmanaged Switch with Fiber Optics, Metal Housing	4	-	1 (single-mode) – max 20 Km	-	
	EH2306	6-Port Unmanaged Switch, Metal housing	6	-	-	-	
	EH2308	8-Port Unmanaged Switch, Metal housing	8	-	-	-	Profinet CC-A
	EH2304-PR	4-Port Unmanaged switch, Metal slim housing	4	-	-	-	Profinet CC-A, Profinet connectors
	EH2308-PR	8-Port Unmanaged switch, Metal housing	8	-	-	-	Profinet CC-A, Profinet connectors

Unmanaged Gigabit Ethernet Switches, DIN-Rail mount, Metal Housing

-10°C **70°C** / DIN / / IP30 IEC60529

SKU	Description	10/100 RJ45 ports	10/100 /1000 ports	Fiber ports	Max PoE Ports	Additional features
EHG2308	8-Port Unmanaged switch, Metal housing	-	8	-	-	Profinet packet prioritization according to 802.1p

Unmanaged Smart Secure Switches

ATOP's Unmanaged Smart Secure Switch is most cost-effective solution for bringing security to your network without having to worry about any configurations. Its embedded CPU will handle a hassle-free key-negotiation with hosts automatically from a properly-set Pre-Shared Key, so that users does not have to access the switch personally to key in any configurable parameters to get going.ATOP's Gigabit Unmanaged Smart and Secure Switch is embedded with 6 x 10/100/1000 RJ45 ports and 2 x 10/100/1000 Secured RJ45 or SFP ports, which can work with devices that don't support MACsec.

Unmanaged Gigabit Ethernet Secure Switches, DIN-Rail mount, Metal Housing

NEW
2018 Q1

-20°C **70°C** / DIN / / / IP30 IEC60529

SKU	Description	10/100 RJ45 ports	100 SFP slots	10/100 /1000 RJ45 ports	1000 SFP slots	Max PoE Ports	Additional features
EHG2408	8 port Unmanaged gigabit switch with 2 secure RJ45 ports, Metal Housing	-	-	8 *	-	-	Prioritizes Profinet packets
EHG2408-2SFP	8 port Unmanaged gigabit switch with 2 secure SFP slots, Metal Housing	-	-	6	2	-	Prioritizes Profinet packets

* The 2 uplink ports out of the 8 ports available is MACsec capable
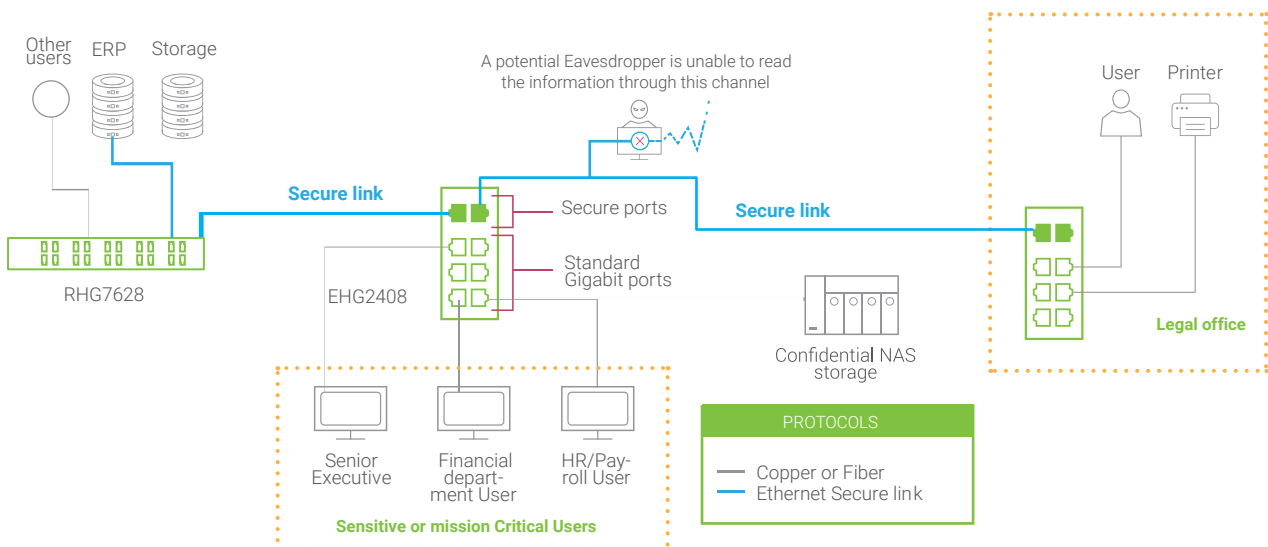
Unmanaged Gigabit PoE Switches

ATOP's Entry Level DIN-Rail mount unmanaged switch is enhanced with Power-over-Ethernet (PoE) and Gigabit SFP technologies, making them ideal for simple industrial applications. **Both 802.3af and 802.3at standards are supported, and each device provides up to 30W power budget per port.** And along with an embedded redundant DC power input, each device can operate in temperatures between -10°C to 70°C.

Unmanaged Gigabit Switches with PoE, DIN-Rail mount, Metal Housing

SKU	Description	10/100 RJ45 ports	100 SFP slots	10/100 /1000 RJ45 ports	1000 SFP slots	Max PoE Ports	Additional features
EHG6308-4PoE	8-Port Unmanaged Gigabit Switch with 4 PoE Ports, Metal Housing	-	-	8	-	4	
EHG6308-4PoE-4SFP	8-Port Unmanaged Gigabit Switch with 4 PoE Ports and 4 SFP Uplinks	-	-	4	4	4	

...more information on our Application Example

RHG7628 - Layer-3 Modular Gigabit Managed PoE Rack-Mount Switch

- Modular architecture for up to 24 Gigabit ports and 4x1 or 4x10 Gigabit Ethernet uplink SFP slots.
- Flexible configuration allows PoE, RJ45, SFP, secure RJ45-SFP ports to be embedded in one device.
- Up to 24 PoE 802.3af-802.3at ports, with maximum 720 W power budget
- -40~75 °C operational temperature. CE/FCC certified and UL/cULus listed.
- Profinet Conformance Class B v2.33 certified
- Redundancy through ERPS/ RSTP/MRP (client) protocols
- IEEE 1588v2 hardware-based End-to-End transparent clock

EHG2408 - DIN-Rail 8-Port Smart Secure Unmanaged Gigabit switch

- 6-Gigabit non-Secure RJ45 ports
- 2-Gigabit Secure MACsec RJ45 ports or SFP slots
- Simple plug-and-play security
- -10~70 °C operational temperature
- priorization according to 802.1p
- UL/cULus listed
- Redundant power input

Harsh Environments Switches

Introduction

ATOP's most advanced product line offers hundreds of different possible configurations. Our Harsh Environment switches are the best choice to support highly demanding networks – and in highly demanding environments.
They feature 4 to 28 Fast Ethernet, Gigabit or 10 Gigabit ports, an operating temperature range from -20°C to 70°C or wider, PoE/PoE+ ports equipped with Relay Output, Redundant power input, Profinet Packet Prioritization according to 802.1p (for Unmanaged Switches), and Profinet CC-B v2.33 certification (Managed Switches).
Selected products offer MIL-STD shock and vibration certification, and performance in high humidity and can operated in temperature ranges of -40°C to +75°C.

ATOP's Managed Switches provide advanced network management for maximizing network performance and minimizing downtimes. Our Managed Switches use ERPS, RSTP, STP, MSTP and MRP (Client) to minimize such downtimes. They have the ability to manage networks efficiently through embedded SNMP, QoS, VLAN, and they can provide Precision time synchronization with support for IEEE 1588v2 PTP.

Featuring rack-mounted configurations and modular architectures, our switches are easy to customize for your specific application. The same hardware platform can accommodate three different modules to allow the flexibility to choose from 4 powerful 10 x Gigabit Ethernet SFP uplink ports or 4 x Gigabit Ethernet SFP uplink ports.

ATOP Layer-3 Switches provide an ideal solution for scaling up industrial networks. They support IPv4 Static Routing, Dynamic Routing, RIPv1 and RIPv2, OSPFv2, and multicast protocols such as PIM-DM, PIM-SM, DVMRP and IGMPv1, IGMPv2, and IGMPv3. And for high level network security, MACsec Protocol can be used.

Unmanaged Harsh Environments Switches

ATOP's advanced unmanaged switches provide rugged and solid networking solutions for deployment in harsh environments, and offer easy plug-and-play installation, making them quick and easy to install in environments that are less forgiving.

The key features of this series are the availability of 5 to 10 Fast Ethernet or Gigabit Ethernet ports, embedded Power over Ethernet (PoE) on selected models, and a variety of port configurations – such as RJ45, SFP, and single- or multi-mode fiber optics. And with **UL Class 1 Division 2 Certification plus ATEX Zone 2** certification, this series is more than suitable for use in locations like mines – environments that have a high risk of explosion.

Unmanaged Gigabit Switches with/without PoE, DIN-Rail mount Metal Housing

SKU	Description	10/100 /1000 RJ45 ports	1000 SFP slots	Max PoE Ports	Additional features
EHG7305	5-Port Unmanaged Harsh-Env. Gigabit Atex Switch	5	-	-	
EHG7306-1SFP	6-Port Unmanaged Harsh-Env. Gigabit Atex switch with 1 SFP uplink	5	1	-	
EHG7307-2SFP	7-Port Unmanaged Harsh-Env. Gigabit Atex switch with 2 SFP uplink	5	2	-	UL Class 1 Division 2 / ATEX Zone 2 certified
EHG7305-4PoE	5-Port Unmanaged Harsh-Env. Gigabit Atex switch with 4 PoE Ports	5	-	4	
EHG7306-4PoE-1SFP	6-Port Unmanaged Harsh-Env. Gigabit Atex switch with 1 SFP uplink and 4 PoE Ports	5	1	4	
EHG7307-4PoE-2SFP	7-Port Unmanaged Harsh-Env. Gigabit Atex switch with 2 SFP uplink and 4 PoE Ports	5	2	4	

Layer-2 Managed DIN-Rail Switches

ATOP's advanced Layer-2 (L2) managed Ethernet switches for harsh environments provide rugged and reliable solutions for managing advanced networks. This series of switches offers a high degree of link redundancy, flow control, and configurability for your network. All models are designed to conform with the strictest Level 3 and Level 4 EMC compliance requirements. Our high-performance components guarantee real-time packet switching, even on full load.

They are available in Fast-Ethernet and Full-Gigabit Ethernet versions, with configurations of 4 to 20 ports, with RJ45 or SFP connector, and optional PoE support. ATOP's L2 managed switch family supports:

Redundancy Protocols

- IEEE802.1D for Spanning Tree Protocol (STP)
- IEEE802.1w/ IEEE802.1D:2004 for Rapid Spanning Tree Protocol (RSTP)
- ITU-T G.8032 ERPS Ring
- IEC 62439-2 MRP - Media Redundancy Protocol (Client)

Time Synchronization

- NTP (Network Time Protocol) Client/ Server
- SNTP (Simple Network Time Protocol) Client
- IEEE1588v2 (Precision Time Protocol) hardware assisted End-to-End transparent clock or IEEE1588v1/v2 sw-assisted boundary clock (selected versions embed IEEE1588v2 hardware boundary clock, with a high precision oscillator)
- ITU-T G.8261 Synchronous Ethernet (selected versions only)

Management

- HTTP/HTTPS (Hypertext Transfer Protocol) configuration
- SNMP (Simple Network Management Protocol) v1/v2c/v3
- Telnet
- Serial Console
- LLDP (Link Layer Discovery Protocol)
- RMON (Remote Monitoring)
- Syslog
- IPv4 , IPv6
- DHCP (Dynamic Host Configuration Protocol) Client
- TFTP (Trivial File Transfer Protocol)
- SMTP (Simple Mail Transfer Protocol)
- ARP (Address Resolution Protocol)

Traffic Optimization

- IEEE802.1q for VLAN Tagging
- IEEE802.1p for Class of Service
- IEEE802.3ad for Port Trunk with Link Aggregation Control Protocol (LACP)
- IGMP (Internet Group Management Protocol) v1/v2/v3
- GVRP (GARP VLAN Registration Protocol)
- ICMP (Internet Control Message Protocol)

Security

- IEEE802.1x for Authentication
- RADIUS (Remote Authentication Dial-In User Service)
- EAP

Automation

- Profinet CC-B v2.33 Certified (selected versions)
- Modbus/TCP
- Ethernet/IP

Industrial Managed Fast-Ethernet PoE Switches, DIN-Rail mount

-20ºC / 70ºC | PROFI-NET® | IEEE 1588 | Ring | Industrial EMC | DIN | IP30 IEC60529

	SKU	Description	10/100 RJ45 ports	10/100 /1000 RJ45 ports	10/100 /1000 SFP slots	1/10 GbE SFP slots	Max PoE Ports
	EH7506-2SFP	6-Port Managed Fast-Ethernet Switch, 2 SFP	4	-	2	-	-
	EH7506-4PoE-2SFP	6-Port Managed Fast-Ethernet Switch with 4 PoE and 2 SFP	4	-	2	-	4
	EH7508-4G-4SFP	8-Port Managed Fast-Ethernet Switch with 4 Gigabit Combo uplink ports	4	(4)	(4)	-	-
	EH7508-4G-4PoE-4SFP	8-Port Managed Fast-Ethernet Switch with 4 Gigabit Combo uplink ports	4	(4)	(4)	-	4
	EH7512-4G-4SFP	12-Port Managed Fast-Ethernet Switch with 4 Gigabit Combo uplink ports	8	(4)	(4)	-	-
	EH7512-4G-4PoE-4SFP	12-Port Managed Fast-Ethernet Switch with 4 Gigabit Combo uplink ports and 4 PoE ports	8	(4)	(4)	-	4
	EH7512-4G-8PoE-4SFP	12-Port Managed Fast- Ethernet Switch with 4 Gigabit Combo uplink ports and 8 PoE ports	8	(4)	(4)	-	8
	EH7520-4G-4SFP	20-Port Managed Fast-Ethernet Switch with 4 Gigabit Combo uplink ports	16	(4)	(4)	-	-
	EH7520-4G-4PoE-4SFP	20-Port Managed Fast-Ethernet Switch with 4 Gigabit Combo uplink ports and 4 PoE ports	16	(4)	(4)	-	4
	EH7520-4G-8PoE-4SFP	20-Port Managed Fast-Ethernet Switch with 4 Gigabit Combo uplink ports and 8 PoE ports	16	(4)	(4)	-	8

Industrial Managed Gigabit PoE Switches, DIN-Rail mount

-20ºC / 70ºC | PROFI-NET® | IEEE 1588 | Ring | Industrial EMC | DIN | IP30 IEC60529

	SKU	Description	10/100 RJ45 ports	10/100 /1000 RJ45 ports	1000 SFP slots	1/10 GbE SFP slots	Max PoE Ports
	EHG7504	4-Port Managed Gigabit Switch	-	4	-	-	-
	EHG7504-4PoE	4-Port Managed Gigabit Switch with 4 PoE ports	-	4	-	-	4
	EHG7504-2SFP	4-Port Managed Gigabit Switch with 2 SFP slots	-	2	2	-	-
	EHG7504-2PoE-2SFP	4-Port Managed Gigabit Switch with 2 SFP slots and 2 PoE ports	-	2	2	-	2
	EHG7504-4SFP	4-Port Managed Gigabit Switch with 4 SFP slots	-	-	4	-	-
	EHG7508	8-Port Managed Gigabit Switch	-	8	-	-	-
	EHG7508-4SFP	8-Port Managed Gigabit Switch with 4 SFP slots	-	4	4	-	-
	EHG7508-4PoE-4SFP	8-Port Managed Gigabit Switch with 4 SFP slots and 4 PoE ports	-	4	4	-	4
	EHG7508-8PoE	8-Port Managed Gigabit Switch with 8 PoE ports	-	8	-	-	8

Industrial Managed Gigabit PoE Switches, DIN-Rail mount

-40°C 70°C · PROFI NET® · IEEE 1588 · Ring · Industrial EMC · DIN · MILD-STD 810F · IP30 IEC60529

SKU	Description	10/100 RJ45 ports	10/100 /1000 RJ45 ports	100/1000 SFP slots	1/10 GbE SFP slots	Max PoE Ports
EHG7512-410GSFP	12-Port Managed Din-Rail Gigabit Switch with 4 x 1/10G SFP slots	-	8	-	4	-
EHG7512-4PoE-410GSFP	12-Port Managed Din-Rail Gigabit Switch with 4 x 1/10G SFP slots and 4 PoE ports	-	8	-	4	4
EHG7512-8PoE-410GSFP	12-Port Managed Din-Rail Gigabit Switch with 4 x 1/10G SFP slots and 8 PoE ports	-	8	-	4	8
EHG7512-4SPF-410GSFP	12-Port Managed Din-Rail Gigabit Switch with 4 SFP and 4 x 1/10G slots	-	4	4	4	-
EHG7512-4SPF-4PoE-410GSFP	12-Port Managed Din-Rail Gigabit Switch with 4 SFP slots, 4 PoE ports and 4 x 1/10G SFP slots	-	4	4	4	4
EHG7516-410GSFP	16-Port Managed Din-Rail Gigabit Switch with 4 x 1/10G SFP slots	-	12	-	4	-
EHG7516-4PoE-410GSFP	16-Port Managed Din-Rail Gigabit Switch with 4 x 1/10G SFP slots and 4 PoE ports	-	12	-	4	4
EHG7516-8PoE-410GSFP	16-Port Managed Din-Rail Gigabit Switch with 4 x 1/10G SFP slots and 8 PoE ports	-	12	-	4	8
EHG7516-4SFP-410GSFP	16-Port Managed Din-Rail Gigabit Switch with 4 SFP slots and 4 x 1/10G SFP uplinks	-	8	4	4	-
EHG7516-4SFP-4PoE-410GSFP	16-Port Managed Din-Rail Gigabit Switch with 4 SFP, 4 PoE ports and 4 x 1/10G SFP uplinks	-	8	4	4	4
EHG7516-4SFP-8PoE-410GSFP	16-Port Managed Din-Rail Gigabit Switch with 4 SFP, 8 PoE ports and 4 x 1/10G SFP uplinks	-	8	4	4	4
EHG7516-8SFP-410GSFP	16-Port Managed Din-Rail Gigabit Switch with 8 SFP slots and 4 x 1/10G SFP uplinks	-	4	8	4	-
EHG7516-8SFP-4PoE-410GSFP	16-Port Managed Din-Rail Gigabit Switch with 8 SFP, 4 PoE ports and 4 x 1/10G SFP uplinks	-	4	8	4	4
EHG7516-12SFP-410GSFP	16-Port Managed Din-Rail Gigabit Switch with 12 SFP slots and 4 x 1/10G SFP uplinks	-	-	12	4	-
EHG7520-410GSFP	20-Port Managed Din-Rail Gigabit Switch with 4 x 1/10G SFP slots	-	16	-	4	-
EHG7520-4PoE-410GSFP	20-Port Managed Din-Rail Gigabit Switch with 4 x 1/10G SFP slots and 4 PoE ports	-	16	-	4	4
EHG7520-8PoE -410GSFP	20-Port Managed Din-Rail Gigabit Switch with 4 x 1/10G SFP slots and 8 PoE ports	-	16	-	4	8
EHG7520-4SFP-410GSFP	20-Port Managed Din-Rail Gigabit Switch with 4 SFP slots and 4 x 1/10G SFP uplinks	-	12	4	4	-
EHG7520-4SFP-4PoE-410GSFP	20-Port Managed Din-Rail Gigabit Switch with 4 SFP, 4 PoE ports and 4 x 1/10G SFP uplinks	-	12	4	4	4
EHG7520-4SFP-8PoE-410GSFP	20-Port Managed Din-Rail Gigabit Switch with 4 SFP, 8 PoE ports and 4 x 1/10G SFP uplinks	-	12	4	4	8
EHG7520-8SFP-410GSFP	20-Port Managed Din-Rail Gigabit Switch with 8 SFP slots and 4 x 1/10G SFP uplinks	-	8	8	4	-
EHG7520-12SFP-410GSFP	20-Port Managed Din-Rail Gigabit Switch with 12 SFP slots and 4 x 1/10G SFP uplinks	-	4	12	4	-
EHG7520-12SFP-4PoE-410GSFP	20-Port Managed Din-Rail Gigabit Switch with 12 SFP, 4 PoE ports and 4 x 1/10G SFP uplinks	-	4	12	4	4
EHG7520-16SFP-410GSFP	20-Port Managed Din-Rail Gigabit Switch with 16 SFP slots and 4 x 1/10G SFP uplinks	-	-	16	4	-

Layer-3 Managed Switches

ATOP's advanced Layer-3 (L3) managed Ethernet switches for harsh environments provide a rugged and solid solution for managing advanced networks that demand Routing between Different VLANs and IP-Based Routing.

Our L3 switches carry out real-time packet routing based on a local network's IP address, instead of the MAC address of the destination device. This series of switches supports:

- IPv4 Unicast Static Routing
- Dynamic Routing RIP (Routing Information Protocol) V1/V2
- OSPFv2 (Open Shortest Path First)
- VRRP (Virtual Router Redundancy Protocol)
- DVMRP (Distance Vector Multicast Routing Protocol)
- PIM-DM (Protocol Independent Multicast – Dense Mode)
- PIM-SM (Protocol Independent Multicast – Sparse Mode)
- PIM-SSM (Protocol Independent Multicast – Source-Specific Multicast)
- IGMPv1/v2/v3 & IGMP Snooping (Internet Group Management Protocol)
- DHCP Server

All models in this series are designed to meet the strictest Level 3 and Level 4 EMC compliance requirements. Our high-performance components guarantee real-time packet switching, even on full load. And they are available in Full-Gigabit versions with 4- to 20-port configurations, RJ45 or SFP connectors, and PoE support.

Layer-3 Managed DIN-Rail Switches

Industrial Layer-3 Managed Gigabit PoE Switches, DIN-Rail Mount

NEW

-20ºC 70ºC | PROFINET® | IEEE 1588 | Ring | L3 | Industrial EMC | DIN | IP30 IEC60529

SKU	Description	10/100 RJ45 ports	10/100 /1000 RJ45 ports	1000 SFP slots	1/10 GbE SFP slots	Max PoE Ports
EHG7604	4-Port Managed Gigabit Switch	-	4	-	-	-
EHG7604-4PoE	4-Port Managed Gigabit Switch with 4 PoE ports	-	4	-	-	4
EHG7604-2SFP	4-Port Managed Gigabit Switch with 2 SFP slots	-	2	2	-	-
EHG7604-2PoE-2SFP	4-Port Managed Gigabit Switch with 2 SFP slots and 2 PoE ports	-	2	2	-	2
EHG7604-4SFP	4-Port Managed Gigabit Switch with 4 SFP slots	-	-	4	-	-
EHG7608	8-Port Managed Gigabit Switch	-	8	-	-	-
EHG7608-4SFP	8-Port Managed Gigabit Switch with 4 SFP slots	-	4	4	-	-
EHG7608-4PoE-4SFP	8-Port Managed Gigabit Switch with 4 SFP slots and 4 PoE ports	-	4	4	-	4
EHG7608-8PoE	8-Port Managed Gigabit Switch with 8 PoE ports	-	8	-	-	8

Industrial Managed Layer-3 Gigabit PoE Switches, DIN-Rail mount

NEW
2018 Q2

-40°C 70°C | PROFI NET | IEEE 1588 | Ring | L3 | Industrial EMC | DIN | MILD-STD 810F | IP30 IEC60529

SKU	Description	10/100 RJ45 ports	10/100 /1000 RJ45 ports	100/1000 SFP slots	1/10 GbE SFP slots	Max PoE Ports
EHG7612-410GSFP	12-Port Managed Din-Rail Layer-3 Gigabit Switch with 4 x 1/10G SFP slots	-	8	-	4	-
EHG7612-4PoE-410GSFP	12-Port Managed Din-Rail Layer-3 Gigabit Switch with 4x1/10G SFP slots and 4 PoE ports	-	8	-	4	4
EHG7612-8PoE-410GSFP	12-Port Managed Din-Rail Layer-3 Gigabit Switch with 4x1/10G SFP slots and 8 PoE ports	-	8	-	4	8
EHG7612-4SPF-410GSFP	12-Port Managed Din-Rail Layer-3 Gigabit Switch with 4 SFP and 4 x 1/10G slots	-	4	4	4	-
EHG7612-4SPF-4PoE-410GSFP	12-Port Managed Din-Rail L3 Gigabit Switch with 4 SFP, 4 PoE ports,4x1/10G SFP slots	-	4	4	4	4
EHG7616-410GSFP	16-Port Managed Din-Rail Layer-3 Gigabit Switch with 4 x 1/10G SFP slots	-	12	-	4	-
EHG7616-4PoE-410GSFP	16-Port Managed Din-Rail Layer-3 Gigabit Switch with 4x1/10G SFP slots and 4 PoE ports	-	12	-	4	4
EHG7616-8PoE-410GSFP	16-Port Managed Din-Rail Layer-3 Gigabit Switch with 4x1/10G SFP slots and 8 PoE ports	-	12	-	4	8
EHG7616-4SFP-410GSFP	16-Port Managed Din-Rail L3 Gigabit Switch with 4 SFP slots and 4 x 1/10G SFP uplinks	-	8	4	4	-
EHG7616-4SFP-4PoE-410GSFP	16-Port Managed Din-Rail L3 Gigabit Switch with 4 SFP, 4 PoE ports, 4x1/10G SFP uplinks	-	8	4	4	4
EHG7616-4SFP-8PoE-410GSFP	16-Port Managed Din-Rail L3 Gigabit Switch with 4 SFP, 8 PoE ports, 4x1/10G SFP uplinks	-	8	4	4	4
EHG7616-8SFP-410GSFP	16-Port Managed Din-Rail Layer-3 Gigabit Switch with 8 SFP slots and 4 x 1/10G SFP	-	4	8	4	-
EHG7616-8SFP-4PoE-410GSFP	16-Port Managed Din-Rail Gigabit Switch with 8 SFP, 4 PoE ports and 4 x 1/10G SFP uplinks	-	4	8	4	4
EHG7616-12SFP-410GSFP	16-Port Managed Din-Rail Layer-3 Gigabit Switch with 12 SFP slots and 4 x 1/10G SFP	-	-	12	4	-
EHG7620-410GSFP	20-Port Managed Din-Rail Layer-3 Gigabit Switch with 4 x 1/10G SFP slots	-	16	-	4	-
EHG7620-4PoE-410GSFP	20-Port Managed Din-Rail Layer-3 Gigabit Switch with 4x1/10G SFP slots and 4 PoE ports	-	16	-	4	4
EHG7620-8PoE -410GSFP	20-Port Managed Din-Rail Layer-3 Gigabit Switch with 4x1/10G SFP slots and 8 PoE ports	-	16	-	4	8
EHG7620-4SFP-410GSFP	20-Port Managed Din-Rail Layer-3 Gigabit Switch with 4 SFP slots and 4x1/10G SFP slots	-	12	4	4	-
EHG7620-4SFP-4PoE-410GSFP	20-Port Managed Din-Rail L3 Gigabit Switch with 4 SFP, 4 PoE ports, 4x1/10G SFP uplinks	-	12	4	4	4
EHG7620-4SFP-8PoE-410GSFP	20-Port Managed Din-Rail L3 Gigabit Switch with 4 SFP, 8 PoE ports, 4x1/10G SFP uplinks	-	12	4	4	8
EHG7620-8SFP-410GSFP	20-Port Managed Din-Rail Layer-3 Gigabit Switch with 8 SFP slots and 4x1/10G SFP slots	-	8	8	4	-
EHG7620-12SFP-410GSFP	20-Port Managed Din-Rail L3 Gigabit Switch with 12 SFP slots and 4x1/10G SFP uplinks	-	4	12	4	-
EHG7620-12SFP-4PoE-410GSFP	20-Port Managed Din-Rail L3 Gigabit Switch with 12 SFP, 4 PoE ports, 4x1/10G SFP uplinks	-	4	12	4	4
EHG7620-16SFP-410GSFP	20-Port Managed Din-Rail L3 Gigabit Switch with 16 SFP slots and 4x1/10G SFP uplinks	-	-	16	4	-

Rack-mount Managed Switches

Flexibility
You can choose from among 6 different Layer-3 Routing Core versions (based on power supply and uplink port configurations) and five different 4- to 8-Port modules to customize your device in a very simple way.

Designed for PoE
RHG7X28 supports up to 24 Gigabit ports in any 4- or 8-port configuration. Specifically designed for bringing power through Ethernet cables to virtually anywhere, a maximum output Power over Ethernet of 720W over the 24 ports can be achieved (PoE/PoE+ configuration - 802.3af/at).

Available in *3 power input variants*, RHG7X28 is EN 61010-2-201-certified and designed to handle the harshest of environments. Its fanless design and EMC Level 3 protection guarantee operations in temperatures from -40°C to +75°C, and with 24 PoE ports running full power, it is sort the of device that can be trusted to work in your field or environment with minimum effort.

Power and versatility
Layer-3 versions support IPv4 and IPv6 Static Routing, RIPv1/v2, OSPFv2, IGMP, PIM Dense Mode and Sparse Mode, DVMRP and VRRP for Routing Redundancy. Through ERPS, RHG7X28 supports a network self-recovery time of under 20ms – even on full load. Most redundant ring topologies are supported: ITU-T G.8032 ERPS Ring, IEEE802.1D-2004 RSTP, STP, MSTP, MRP (Client), iA-Ring, iA-Chain and many other compatible rings.

Automation and IIoT
Being Profinet CC-B v2.33-certified and Ethernet/IP-ready makes the RHG7X28 Series the ideal backbone for your Industrial automation needs.

Secure
The first Industrial Managed Secure Switch! Protect your LAN from Eavesdropping and impersonation through 802.1AE MACsec. With no additional latency and 100% Gigabit Throughput guaranteed, dedicated modules provide you with the ultimate security solution (Layer-3 version only).

PoE / PoE+ powered IPcam surveillance

Industrial Network

Storage

EHG2408 Smart Secure Switch

| M1 8-RJ45 PoE | M1 8-RJ45 non-PoE | M4 4-RJ45 MACsec | 4 x 10G SFP |

RHG7628-CPU-410GSFP-X

| M4 4-RJ45 MACsec | M1 8-RJ45 non-PoE | M1 8-RJ45 non-PoE |

RHG7628-CPU-410GSFP-X

OSPF Metro Network on 10GbE Fiber Backbone

DATA FLOW
— Copper - 10/100/1000
— Copper - 10/100/1000 PoE/PoE+
— Fiber - 10 GbE Backbone
···· **Copper - 10/100/1000 MACsec**

Modular Concept

A custom device can be built in a very simple way, by choosing from among five different hardware versions and five different 4- or 8-port hot-swappable modules. The corresponding software detects the connected module and enables the related set-up panels automatically, saving configuration and installation times.

RHG7628-CPU-410GSFP-R Main unit, with 4 x 10 Gigabit SFP uplink ports and redundant AC power input

RHG7X28-M1
8-port Gigabit RJ45 PoE module

RHG7X28-M2
8-port Gigabit RJ45 module

24 port L3 Managed Switch, with 8 Gigabit PoE, 8 Gigabit RJ45, 4 Gigabit SFP MACsec and 4 x 10 GbE uplink ports

Switch Core Platforms

ATOP's rack-mounted switches provide 4 different hardware versions, whether you need Layer-2 or Layer-3 Switching, and 4 x 10 Gigabit uplink ports.

For specific Layer-2 and Layer-3 features, please refer to their respective data-sheets.

Industrial Rack-Mount Gigabit Managed Switch

NEW · 75°C -40°C · PROFINET · IEEE 1588 · Ring · 🔒* · ❄ L3 · ⚡ Industrial EMC · RACK · MILD-STD 810F · · IP30 IEC60529

Layer	Uplink ports	Redundant power supply for CPU board (100~240 VAC)	Redundant power supply for CPU board (100~240 VAC)	Redundant DC 48~56V power supply
Layer 2*	4 x 1 GbE	RHG7528-CPU-4SFP-R	RHG7528-CPU-4SFP	RHG7528-CPU-4SFP-DC
	4 x 10 GbE	RHG7528-CPU-410GSFP-R	RHG7528-CPU-410GSFP	RHG7528-CPU-410GSFP-DC
Layer 3	4 x 1 GbE	RHG7628-CPU-4SFP-R	RHG7628-CPU-4SFP	RHG7628-CPU-4SFP-DC
	4 x 10 GbE	RHG7628-CPU-410GSFP-R	RHG7628-CPU-410GSFP	RHG7628-CPU-410GSFP-DC

* Layer 2 models do not support MACsec M4-M5 modules

Modules

Five different swappable modules are available for the RHG7X28 Series. Available in up to 74 combinations, the RHG7X28 Series allows you the flexibility you need for your specific application.
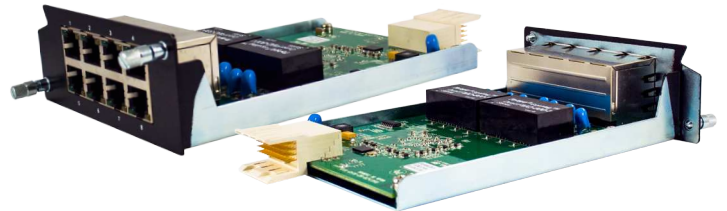
a. **RHG7X28-M1- 8-Port RJ45 PoE module:**

   i.   8 RJ45 10/100/1000 BaseT(X) ports
   ii. 30 W PoE Power per port (802.3af, 802.3at)
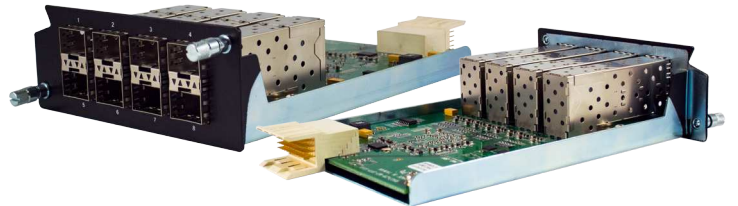   iii. 240 W Maximum PoE power per module

b. **RHG7X28-M2- 8-Port RJ45 module:**
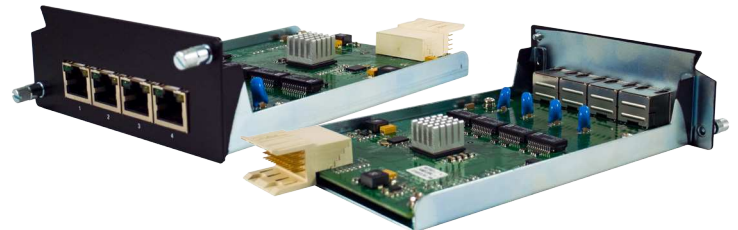
   i. 8 RJ45 10/100/1000 BaseT(X) ports

c. **RHG7X28-M3- 8-Port SFP module:**

   i. 8 SFP 100/1000 BaseF(X) slots
   ii. Speed software-selectable

d. **RHG7X28-M4- 4-Port RJ45 MACsec module (*):**

   i. 4 RJ45 10/100/1000 BaseT(X) ports
   ii. MACsec Hardware encryption on all ports

e. **RHG7X28-M5- 4-Port SFP MACsec module (*):**

   i. 4 SFP 100/1000 BaseF(X) slots
   ii. MACsec Hardware encryption on all ports

* Layer 2 models do not support MACsec M4-M5 modules.

Industry-specific Ethernet Switches

ATOP's range of industrial Ethernet switches are engineered for use in harsh environments, so you can develop cost-effective and secure networks without having to worry about implementation and reliability. With our extensive range of switches and knowledge of various protocol standards used in industries such as railway, transport, energy, and utilities, we can be sure to find a solution for your application – regardless of its environment and scale.

Industry Ethernet for Substation Automation and Smart Grids

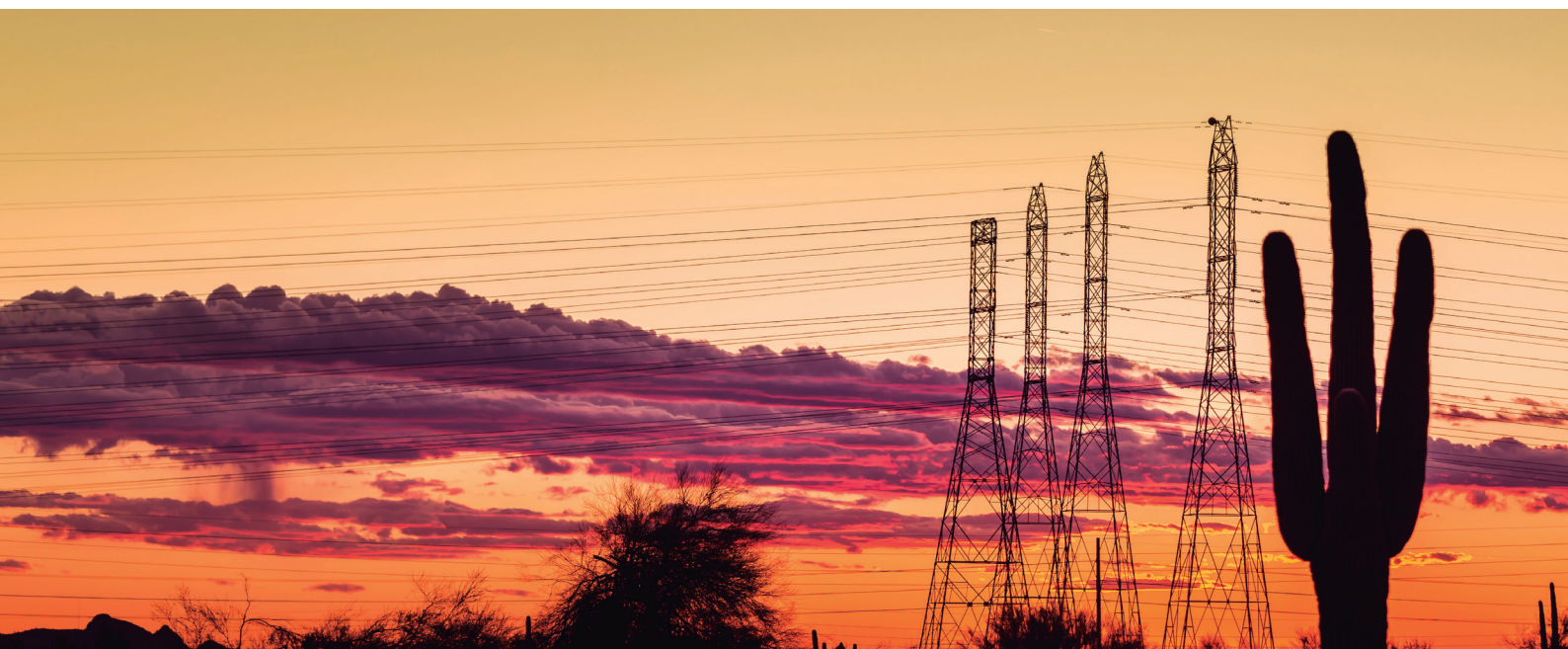Over the decades, various communication protocols have been developed to manage power grid networks and components such RTUs and IEDs – and even control centers. The result has been different standards being adopted and used by numerous countries around the world. Distributed Network Protocol (DNP 3) has became the standard adopted in North America. Europe has relied mainly on IEC 60870-5 101/103/104, with much of the world using Modbus protocol, due to its openness and ease.

To simplify all of this, IEC 61850 was developed to provide a standard communication protocol for electrical substations and power grid automation. Specializing its domain knowledge in electrical power grid systems, IEC 61850 is an object-oriented protocol that uses a data modeling scheme to clearly describe each component of a power grid or substation as standard logical nodes — such as object processes, protection, control, and functionality.

This specialization enables data access to the power grid system to yield more details. And to further improve reliability and performance, **IEC 61850 Part 3 also specifies the hardware and network suitability requirements** — such as electro-magnetic immunity (EMI), surge protection, vibration and shock resistance, and the temperature range in which devices must be able to function. **ATOP's switches comply with these specifications.**

IEC 61850-3 Device Compliancy Specifications

- Operate in a temperature range of -40°C to 85°C.
- Be capable of reliably handling long distance transmissions through Fiber optic connectivity.
- Guarantee QoS (Quality of Service) management and real-time packet switching for GOOSE event messages.
- Guarantee a level of redundancy that minimizes packet loss. Ring topologies should be supported, and zero-packet-loss technologies such as HSR (High availability Seamlessly Redundancy) or PRP (Parallel Redundancy Protocol) are strongly recommended to be supported. ATOP's devices support RSTP (Rapid Spanning-Tree Protocol) and ERPS rings. When equipped with HSR/PRP modules, our Innovative RHG9528 switch can guarantee against loss of GOOSE packets.
- Have a wide tolerance for vibrations and shocks. ATOP's MIL-STD-810F device fully complies.
- Have tough electromagnetic immunity and comply with emission standards, as PoE is not allowed in IEC 61850-3.
- Have at least Level 3 EMC protection; have at least Level 4 ESD, EFT and Surge protection; and have at least Level 5 PFMF and Damped Oscillatory Magnetic Field immunity.

Test	Version	Item		Value	Level	Criterion
IEC 61000-4-2	2008	ESD	Contact Discharge AirDischarge	±8KV ±15KV	4 4	B B
IEC 61000-4-3	2010	RS	Enclosure Port	10(V/m), 80-1000MHz, 80% AM, 1G~3GHz	3	A
IEC 61000-4-4	2012	EFT	AC Power Port DC Power Port Signal Port	±4.0KV@ 2.5KHz ±4.0KV@ 2.5KHz ±2.0KV@ 5.0KHz	4 4 4	B B B
IEC 61000-4-5	2014	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	B B B B B
IEC 61000-4-6	2013	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	A A A
IEC 61000-4-8	2009	PFMF	(Enclosure)	100A/m continuous,1000A/m for 3S	5	A
IEC61000-4-10	2000	Damped Oscillatory magnetic Field	(Enclosure)	100A/m,100KHz,1MHz	5	A
IEC 61000-4-11	2004	DIP	AC Power Port	Drop 70% for 3 times/S (1 Period) Drop 40% for 3 times/1mS (50 Period) Drop 100% for 3 times/50mS (5 & 50 Period)	N/A N/A N/A	A A A
IEC 61000-4-12	2006	Damped Oscillatory	AC Power Port Signal Port	2.5KV common,1KV differential mode @ 1MHz 2.5KV common,1KV differential mode @ 1MHz	3 3	B B

IEC 61850-3 DIN-Rail Managed Gigabit Switches

IEC 61850-3 Certified Managed Gigabit Switches, DIN-Rail mount

NEW

-40°C 85°C | PROFI NET | IEEE 1588 | Ring | IEC 61850 | Industrial EMC | DIN | MILD-STD 810F | IP30 IEC60529

	SKU	Description	10/100 / 1000 RJ45 ports	1000 SFP slots	Total Ports	Power Input
	EHG9508-2SFP	8-Port IEC 61850-3 certified Managed Gigabit Switch, with 2 Gigabit SFP slots,	6	2	8	Dual 24~57 VDC input
	EHG9508-2SFP-HV	8-Port IEC 61850-3 certified Managed Gigabit Switch, with 2 Gigabit SFP slots, High Voltage	6	2	8	Dual 110~370 VDC input
	EHG9508-2SFP-AC	8-Port IEC 61850-3 certified Managed Gigabit Switch, with 2 Gigabit SFP slots, AC input	6	2	8	Dual 100~240 VAC input
	EHG9512-4SFP	12-Port IEC 61850-3 certified Managed Gigabit Switch, with 8 Gigabit SFP slots	8	4	12	Dual 24~57 VDC input
	EHG9512-4SFP- HV	12-Port IEC 61850-3 certified Managed Gigabit Switch, with 8 Gigabit SFP slots, High Voltage	8	4	12	Dual 110~370 VDC input
	EHG9512-4SFP- AC	12-Port IEC 61850-3 certified Managed Gigabit Switch, with 8 Gigabit SFP slots, AC input	8	4	12	Dual 100~240 VAC input