



# 6012GX4-L3-POE Datasheet

Aiming to create better and safer working environments and life experiences through the products we deliver.



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## Building More Powerful Industrial POE Aggregation Network

### 6012GX4-L3-POE

#### Industrial 8G + 4GF Layer 3 PoE Cyber Security Switch

The 6012GX4-L3-POE is an industrial L3 smart Managed PoE Ethernet Switch. Equipped with 8xGigabit PoE Af/at 802.3at PoE and 4x100M/1000M SFP fiber ports. The 8xGigabit PoE/PoE+ ports can feed IP cam or wireless AP up to 30W/port. The 6012GX4-L3-POE designs with the latest ERPSv2 ring which is fully compatible with commercial communication equipment for flexible network upgrade. The USB port for configuration file can help mass installation and site support. Wide operating temperature design (-40~75°C) can withstand harsh industrial environment. Improved production processes and precision ensure higher quality and stability. The ANMS supports network management for up to 2000 nodes.



#### Full Gigabit Switching and Ultra-high Throughput

- 12-port Full Gigabit Ethernet with 8-port RJ-45 PoE and 4-port SFP
- 16K MAC address table
- 1.5MByte packet buffer memory for H.264 burst
- 9K bytes jumbo frame
- Store-and-forward with non-blocking switch fabric

#### ITU-T G.8032 v1/v2 ERPS Ring Redundancy

- An ITU standard Ring redundancy Protocol
- Provide sub-50ms protection and recovery switching for Ethernet traffic
- Interoperate with 3rd party industrial switch and still remain fast recovery time
- Interoperate with commercial switch instead of STP/RSTP
- Efficient network interconnection with ERPS Chain, multiple chains

#### Rugged Design for Security Surveillance

- Rugged design prevents mechanical deformation
- Wide operating temperature range: -40~75°C, humidity : 95%
- Wide operating voltage range: 46~57VDC
- IEC61000-6-2/4 heavy industrial EMC

#### Extreme PoE Capability

- 8-port provide IEEE 802.3 af/at compliance PoE, up to 30W/port
- Up to 240W PoE power budget
- Complete PoE management including per-port Power Budget Control, PoE Scheduling and PoE Status

#### IEC62443-4-2 Level 3 / 4 Cyber Security\*

- L2-L7 IPv4/IPv6 Access Control List (ACL)
- DHCP Snooping, IP Source Guard, Dynamic ARP Inspection
- 802.1Q VLAN, Private VLAN, Advanced Port Security
- Multi-Level user passwords
- HTTPS/SSH/SFTP, 256-bit encryption
- 802.1X MAB for non-802.1X compliant end devices
- RADIUS/TACACS+ centralized password authentication

#### Smart Management

- Supports web pages, command lines, Telnet, SNMP v1/v2c/v3/trap
- LLDP topology control
- IEEE 1588v1/v2 PTP Precision Time Synchronization Protocol
- USB for easy field side configuration and firmware update
- Software tools for easy LAN management
- ANMS Network Management System

PoE (Power Over Ethernet) Details	PoE (IEEE 802.3af)	PoE+ (IEEE 802.3at)
Max power	15.40 W	34.20 W
Available power for the device	12.95 W	25.50 W
Voltage output range	44-58 VDC	50-57 VDC
Max output current	350 mA	600 mA
Power management level	L3	L4



## Ordering Information

Model Name	Description
<b>6012GX4-L3-POE</b>	12-Port Industrial Fully Managed Layer3 POE Switch, 8 RJ45 10/100/1000BaseT(X), 4 SFP Slots 1000BaseSFP+, Support POE/POE+, Support ITU-TG.8032, DIN-Rail, Dual Power Input 46-57VDC, -40°C-75°C
<b>6012GX4-L3-POE-2SX</b>	6012GX4-L3-POE, w/ 2 AVC-SFP-SX
<b>6012GX4-L3-POE-2LX-10</b>	6012GX4-L3-POE, w/ 2 AVC-SFP-LX-10
<b>6012GX4-L3-POE-2LX-40</b>	6012GX4-L3-POE, w/ 2 AVC-SFP-LX-40
<b>6012GX4-L3-POE-4SX</b>	6012GX4-L3-POE, w/ 4 AVC-SFP-SX
<b>6012GX4-L3-POE-4LX-10</b>	6012GX4-L3-POE, w/ 4 AVC-SFP-LX-10
<b>6012GX4-L3-POE-4LX-40</b>	6012GX4-L3-POE, w/ 4 AVC-SFP-LX-40
<b>6012GX4-L3-POE-PS</b>	6012GX4-L3-POE, w/ 1 APS-240-48
<b>6012GX4-L3-POE-2SX-PS</b>	6012GX4-L3-POE, w/ 1 APS-240-48 and 2 AVC-SFP-SX
<b>6012GX4-L3-POE-2LX-10-PS</b>	6012GX4-L3-POE, w/ 1 APS-240-48 and 2 AVC-SFP-LX-10
<b>6012GX4-L3-POE-2LX-40-PS</b>	6012GX4-L3-POE, w/ 1 APS-240-48 and 2 AVC-SFP-LX-40
<b>6012GX4-L3-POE-4SX-PS</b>	6012GX4-L3-POE, w/ 1 APS-240-48 and 4 AVC-SFP-SX
<b>6012GX4-L3-POE-4LX-10-PS</b>	6012GX4-L3-POE, w/ 1 APS-240-48 and 4 AVC-SFP-LX-10
<b>6012GX4-L3-POE-4LX-40-PS</b>	6012GX4-L3-POE, w/ 1 APS-240-48 and 4 AVC-SFP-LX-40

Technology	
<b>Standard</b>	IEEE 802.3 10Base-T Ethernet
	IEEE 802.3u 100Base-TX Fast Ethernet
	IEEE 802.3ab 1000Base-T Gigabit Ethernet copper
	IEEE 802.3u 100Base-FX Fast Ethernet Fiber
	IEEE 802.3x Flow Control and back-pressure
	IEEE 802.3ab 1000Base-T Gigabit Ethernet copper
	IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
	IEEE 802.1p Class of Service (CoS)
	IEEE 802.1Q VLAN
	ITU-T G.8032 Ethernet ring protection switching (ERPS)
	IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP)
	IEEE 1588 Precision Time Protocol v1/2
Performance	
<b>Switch Technology</b>	Store and Forward Technology with non-blocking Switch Fabric
<b>Number of MAC Address</b>	16K
<b>Packet Buffer Memory</b>	1.5MBytes
<b>Jumbo Frame</b>	9216 Bytes
<b>Transfer performance</b>	10Base-TX: 14,880pps, 100Base-TX: 148,800pps, 1000Base-TX/FX: 1,488,100pps
<b>VLAN</b>	256 VLANs
<b>VLAN ID</b>	1~4094
<b>Class of Service</b>	8 Priority Queues per Port
Interface	
<b>Ethernet Port</b>	8 x 10/100/1000Base-T RJ-45, Auto-Negotiation 4 x 100/1000Base SFP, DDM
<b>System LED</b>	2 x Power: Green On 1 x System Status: Ready: Green On, Firmware Updating: Green Blinking 1 x DO: Red On 1 x DI : Green On 1 x Ring: Off: Ring disabled, Green On: Ring normal (Not RPL Owner), Green Blinking: Ring normal (RPL Owner), Amber On: Ring abnormal, Amber Blinking: Ring port fail 8 x PoE: Amber On
<b>Ethernet Port LED</b>	Link (Green On), Active (Green Blinking), Speed 1000M(Amber On), Speed 100M(Off)
<b>SFP LED</b>	Link (Green On), Active (Green Blinking), Speed 1000M(Amber On), Speed 100M(Off)
<b>Reset</b>	System Reboot(2-6 Seconds)/Default Settings Reset(over 7 Seconds)
<b>Console</b>	1 x RS232 in RJ45 for System Configuration. Baud Rate:115200.n.8.1
<b>USB</b>	1 x USB for Configuration/Firmware Update
<b>Watchdog</b>	Hardware Design 10 Second Timer
<b>Power Input, Digital Input, Digital Output</b>	8-Pin Removable Terminal Block Connector: 4 Pins for Redundant Power 4 Pins for DI, DO (Relay Alarm) 1x Digital Output: Dry Relay Output with 0.5A/24V DC 1x Digital Input: DI with Photo-Coupler Isolation High: DC 11~30V Low: DC 0~10V

Power Requirement	
Input Voltage	48VDC (46~57VDC), 50~57VDC for IEEE802.3at
Reverse Polarity Protect	Yes
Input Current	4.67A@54V
Power Consumption	Max 18.9W@54VDC full traffic without PD loading, suggest to reserve 15% tolerance
PoE	
Power forwarding mode	Alternative A
PoE Power Budget	PoE: Max.240W@75°C Per Port: Max. 30W
PoE Mode	IEEE 802.3af/at
Management	System/Port Power Budget Control, PoE Scheduling, PD Alive Check, PoE Status
Software	
Management Interface	CGI WebGUI, Command Line Interface (CLI), Telnet, SNMP
Time Management	NTP, IEEE 1588 Precision Time Protocol v1/v2
Network Management	IPv4/IPv6, SNMP v1/v2c/v3/Trap, MIBs, RMON, LLDP, DHCP server/client/Option 82, TFTP, System Log, SMTP
Traffic Management	Flow Control, Port Trunk/802.3ad LACP, VLAN, Private VLAN, GVRP, GMRP, QinQ, QoS, IGMP Snooping v1/v2/v3, Rate Control, Storm Control, Port Mirror
Security	IEEE 802.1X/RADIUS, Private VLAN, ACL(MAC/IP filter), HTTPs/SSH secure login
Redundancy	Rapid Spanning Tree Protocol (RSTP)/Multiple Spanning Tree Protocol (MSTP) ITU-T G.8032 v1/v2 Ethernet Ring Protection Switching (ERPS)
L3/Routing	Dual WAN interface Routing: RIPv2, OSPFv2, static multicast routing*, VRRPv2 NAT: 1-1 NAT, NAPT (SNAT/DNAT), port forwarding, R-NAT*, TTDP* Firewalls: Stateful Inspection Firewall, DMZ, Modbus TCP/UDP Deep Inspection* VPN: IPSec, OpenVPN, DMVPN*, PPTP*, L2TP*, GRE*. Encryption includes DES/3 DES/AES128 AES256
Mechanical	
Installation	DIN Rail
Enclosure Material	Steel Metal with Aluminum
Dimension	85.5 mm x 150 mm x 126.5 mm (W x H x D) without DIN Rail Clip
Ingress Protection	IP41
Weight	1.38KG
Environmental	
Operating Temperature & Humidity	-40°C~75°C , 0%~95% Non- Condensing
Storage Temperature	-40°C~85°C
Hi-Pot Insulation	AC 1.5KV
MTBF	>2,000,000 hours
Warranty	5 years
Standard	
Safety	IEC60950-1 Compliance
EMC	EN61000-6-2/EN61000-6-4
EMI	CISPR 22, FCC part 15B Class A
EMS	EN61000-4-2 ESD, EN61000-4-3 RS, EN61000-4-4 EFT, EN61000-4-5, EN61000-4-6 CS, EN61000-4-8 Magnetic Field
Railway	EN50121-4
Substation	EN61850-3/IEEE1613

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100Base FX		
<b>Multi Mode</b>	AVC-SFP-FX-SX (550m)	Wavelength: 850 nm
	AVC-SFP-FX-S (2km)	Wavelength: 1310 nm
<b>Single Mode</b>	AVC-SFP-FX-10 (10km)	Wavelength: 1310 nm
1000Base FX		
<b>Multi Mode</b>	AVC-SFP-SX (550m)	Wavelength: 850 nm
	AVC-SFP-LX-S (2km)	Wavelength: 1310 nm
<b>Single Mode</b>	AVC-SFP-LX-10 (10km)	Wavelength: 1310 nm

## function interface

### Integrated Power Connector

- 1 x 8-pin removable terminal block
- 4 pin for redundant power input
- 2 pin DI
- 2 pin DO
- Easy installation

### Gigabit PoE Port

- 8-port 100/100MBase-T
- IEEE 802.3 af/at PoE

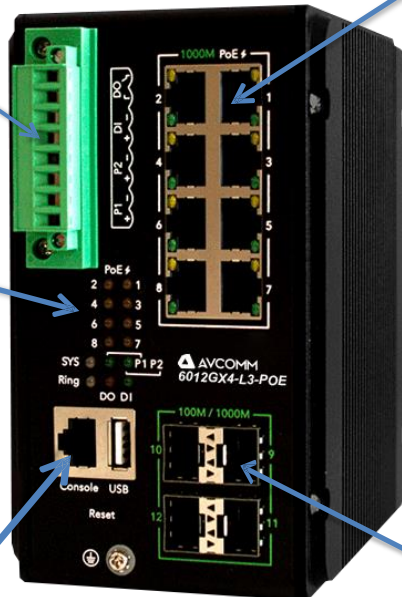
### System LED

- 8 x PoE
- 2 x Power
- 1 x System Status
- 1 x DI
- 1 x DO
- 1 x Ring Status

### DIN Clip

### Easy System Management

- USB for Configuration/Firmware update
- RS232 console



### Gigabit Fiber Port

- 4-port 100/1000M SFP

## Installation dimensions

Unit:  $\frac{\text{inch} \pm 0.040}{[\text{mm}] \pm 1.00}$

