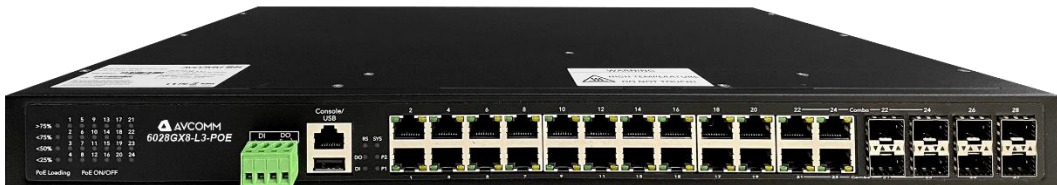




AVCOMM®

# 6028GX8-L3-POE Datasheet

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



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## Industrial IoT Data Core Security Ethernet Switch

# 6028GX8-L3-POE

### Industrial 28G L3 Rackmount PoE Ethernet Switch

6028GX8-L3-POE is an industrial rackmount 28G Ethernet Switch. Equipped with 24xGigabit copper ports, 4xGigabit combo ports and 4x100M/1GSFP slots. Up to 8xGigabit fiber ports with long-distance fiber connections to more field switches. Full Layer 3 IP routing protocols include static route and dynamic routing RIP, OSPF, VRRP are supported. 6028GX8-L3-POE new design with the addition of MQTT protocol for supporting IoT and cloud applications. Rugged design, network security features and high EMC protection make the new 6028GX8-L3-POE an ideal solution for industrial control room, roadside traffic control, industrial IoT and industrial surveillance applications.



#### High Throughput Ethernet Switching

- 28 full Gigabit interfaces, including 20x port GbE RJ45, 4x port GbE RJ45/SFP combo Combo, 4x100M/1G SFP fiber ports
- Up to 24x Gigabit copper RJ45 ports
- Up to 8x100M/1GbE fiber ports add more fiber links to field switches
- DDM function for high quality fiber connectivity monitoring
- Powerful 1.2GHz ARM Cotex-A9 processor
- Energy-Efficient Ethernet for power saving
- 8 flexible Class of Service(CoS) queues, 512 L2 Multicast Groups for video applications
- Non-blocking switch fabric
- 16K MAC address table, 9K bytes jumbo frame
- PoE management including per-port Power Budget Control, PoE Scheduling, Priority, PD Alive Check and PoE Status

#### Industrial IoT LAN & Cloud Management

- Various configuration paths, including CGI WebGUI, CLI, SNMP and RMON
- Support AVCOMM Software Utilities:
  - ANMS Network Management System
  - AIAS for Configuration Management
  - ANMS\*, ATMS OTA\* for device management over Cloud
- Support MQTT\* protocol, ready to use AWS/Azure and Private Cloud Agent for cloud management
- LLDP for topology control, auto-topology drawing
- USB for easy field configuration and firmware update

#### Enhanced RSTP(eRSTP)

- Enhance the RSTP fault recovery time performance
- Enhance RSTP performance for large ring network topologies with up to 80 switches

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

- ITU-T G.8032 v1/v2 ERPS Standard Ring Redundancy protocol
- Supports HW-based CFM transmission for overcoming GbE copper physical limitation and providing minimum 20ms recovery time, seamless restoration time
- Inter-Operability with 3rd party industrial switch and still remain fast recovery time
- Replace Ring + Chain + Dual Homing

#### Layer 3 IP Routing

- Static Route and Dynamic Routing protocols, RIP, OSPF, VRRP

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

- 802.1X/RADIUS port-based access control
- IP Security/Port Security
- HTTPs/SSH Management IP secure access
- Supports advanced cyber security features, 802.1X MAB, TACAS+, DHCP Snooping, IP Source Guard, Dynamic ARP Inspection, advanced Port Security & L2- L7 Access Control List

#### Rugged Design for Industrial Control Room and Wayside Network Switching

- EN50121-4 compliance for railway trackside, roadside, industrial control room applications
- Excellent heat dissipation design for operating in -40~70°C environments
- High level EMC protection exceeding traffic control and heavy industrial standards' requirements
- IEC 61000-6-2/4 Heavy Industrial Environment
- Seamless forwarding while EMC attack (TBD)



## Ordering Information

Model Name	Description
<b>6028GX8-L3-POE-AC2</b>	28-Port Industrial Fully Managed Layer3 POE Switch, 20 RJ45 10/100/1000BaseT(X), 24 x 802.3af/at PoE, Auto Negotiation, 4 x 100/1000M 802.3af/at PoE RJ45/SFP Combo (4 Copper/4 fiber or 2 copper+2 fiber), 4 SFP Slots 1000BaseSFP+, Support POE/POE+, Support ITU-TG.8032, Rack Mounting, Dual Power Input 90-264VAC, -40°C-75°C
<b>6028GX8-L3-POE-AC2-2SX</b>	6028GX8-L3-POE-AC2, w/ 2 AVC-SFP-SX
<b>6028GX8-L3-POE-AC2-2LX-10</b>	6028GX8-L3-POE-AC2, w/ 2 AVC-SFP-LX-10
<b>6028GX8-L3-POE-AC2-2LX-40</b>	6028GX8-L3-POE-AC2, w/ 2 AVC-SFP-LX-40
<b>6028GX8-L3-POE-AC2-4SX</b>	6028GX8-L3-POE-AC2, w/ 4 AVC-SFP-SX
<b>6028GX8-L3-POE-AC2-4LX-10</b>	6028GX8-L3-POE-AC2, w/ 4 AVC-SFP-LX-10
<b>6028GX8-L3-POE-AC2-4LX-40</b>	6028GX8-L3-POE-AC2, w/ 4 AVC-SFP-LX-40
<b>6028GX8-L3-POE-AC2-6SX</b>	6028GX8-L3-POE-AC2, w/ 6 AVC-SFP-SX
<b>6028GX8-L3-POE-AC2-6LX-10</b>	6028GX8-L3-POE-AC2, w/ 6 AVC-SFP-LX-10
<b>6028GX8-L3-POE-AC2-6LX-40</b>	6028GX8-L3-POE-AC2, w/ 6 AVC-SFP-LX-40
<b>6028GX8-L3-POE-AC2-8SX</b>	6028GX8-L3-POE-AC2, w/ 8 AVC-SFP-SX
<b>6028GX8-L3-POE-AC2-8LX-10</b>	6028GX8-L3-POE-AC2, w/ 8 AVC-SFP-LX-10
<b>6028GX8-L3-POE-AC2-8LX-40</b>	6028GX8-L3-POE-AC2, w/ 8 AVC-SFP-LX-40
<b>6028GX8-L3-POE-AC-DC2</b>	28-Port Industrial Fully Managed Layer3 POE Switch, 20 RJ45 10/100/1000BaseT(X), 24 x 802.3af/at PoE, Auto Negotiation, 4 x 100/1000M 802.3af/at PoE RJ45/SFP Combo (4 Copper/4 fiber or 2 copper+2 fiber), 4 SFP Slots 1000BaseSFP+, Support POE/POE+, Support ITU-TG.8032, Rack Mounting, Single Power Input 90-264VAC+Dual Power Input 90-264VDC, -40°C-75°C
<b>6028GX8-L3-POE-AC-DC2-2SX</b>	6028GX8-L3-POE-AC-DC2, w/ 2 AVC-SFP-SX
<b>6028GX8-L3-POE-AC-DC2-2LX-10</b>	6028GX8-L3-POE-AC-DC2, w/ 2 AVC-SFP-LX-10
<b>6028GX8-L3-POE-AC-DC2-2LX-40</b>	6028GX8-L3-POE-AC-DC2, w/ 2 AVC-SFP-LX-40
<b>6028GX8-L3-POE-AC-DC2-4SX</b>	6028GX8-L3-POE-AC-DC2, w/ 4 AVC-SFP-SX
<b>6028GX8-L3-POE-AC-DC2-4LX-10</b>	6028GX8-L3-POE-AC-DC2, w/ 4 AVC-SFP-LX-10
<b>6028GX8-L3-POE-AC-DC2-4LX-40</b>	6028GX8-L3-POE-AC-DC2, w/ 4 AVC-SFP-LX-40
<b>6028GX8-L3-POE-AC-DC2-6SX</b>	6028GX8-L3-POE-AC-DC2, w/ 6 AVC-SFP-SX
<b>6028GX8-L3-POE-AC-DC2-6LX-10</b>	6028GX8-L3-POE-AC-DC2, w/ 6 AVC-SFP-LX-10
<b>6028GX8-L3-POE-AC-DC2-6LX-40</b>	6028GX8-L3-POE-AC-DC2, w/ 6 AVC-SFP-LX-40

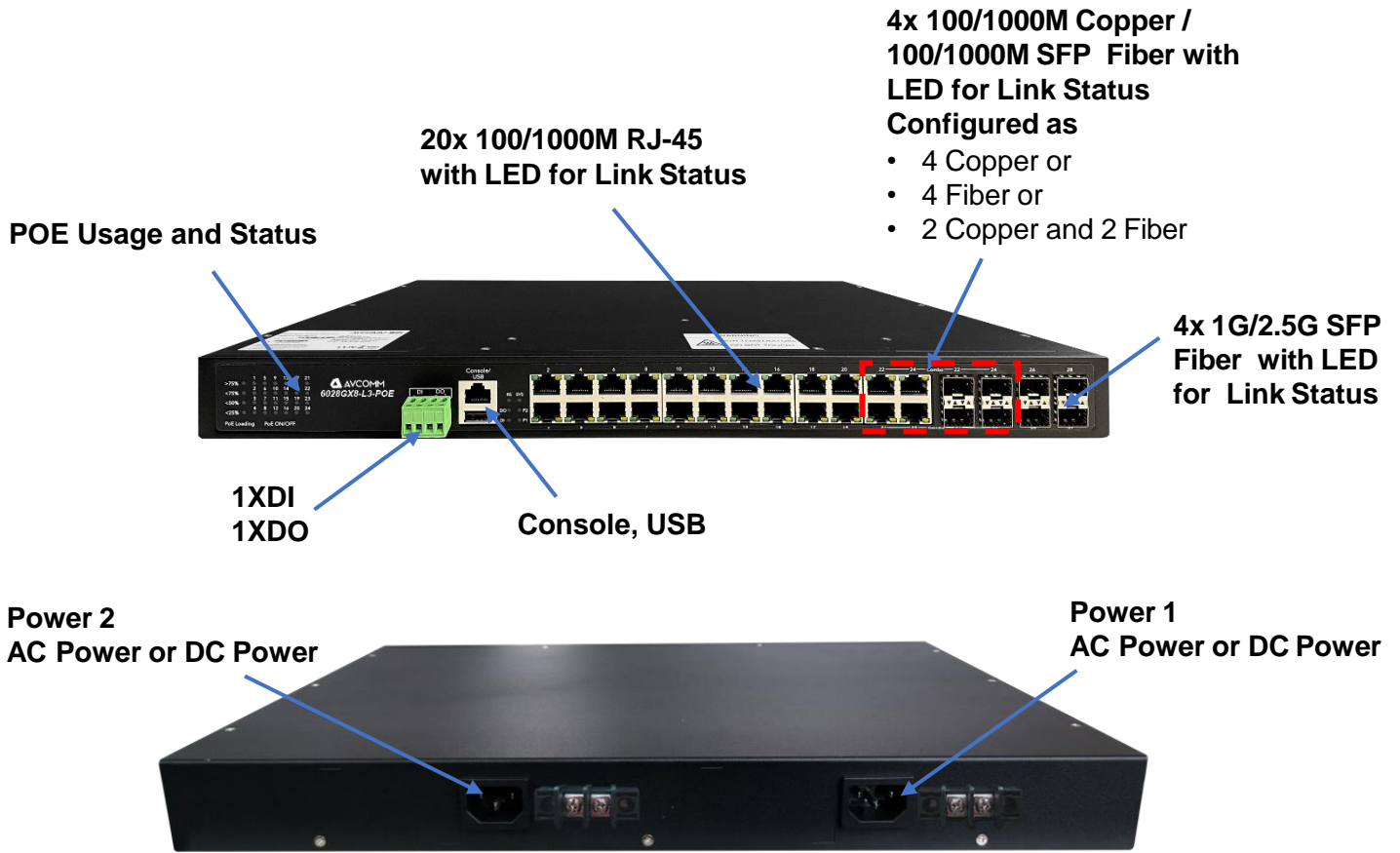
<b>6028GX8-L3-POE-AC-DC2-8SX</b>	6028GX8-L3-POE-AC-DC2, w/ 8 AVC-SFP-SX
<b>6028GX8-L3-POE-AC-DC2-8LX-10</b>	6028GX8-L3-POE-AC-DC2, w/ 8 AVC-SFP-LX-10
<b>6028GX8-L3-POE-AC-DC2-8LX-40</b>	6028GX8-L3-POE-AC-DC2, w/ 8 AVC-SFP-LX-40

Technology	
<b>Standard</b>	IEEE 802.3 10Base-T Ethernet
	IEEE 802.3u 100Base-TX Fast Ethernet
	IEEE 802.3u 100Base-FX Fast Ethernet Fiber
	IEEE 802.3ab 1000Base-T Gigabit Ethernet copper
	IEEE 802.3z Gigabit Ethernet Fiber
	IEEE 802.3x Flow Control and back-pressure
	IEEE 802.3az (Energy Efficient Ethernet)
	IEEE 802.1p Class of Service (CoS)
	IEEE 802.1Q VLAN and GVRP
	IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
	IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP)
	IEEE 802.1S Multiple Spanning Tree Protocol (MSTP)
	IEEE 801.1AX/802.3ad Link Aggregation Control Protocol (LACP)
	IEEE 802.1x Port based Network Access Protocol
	IEEE 1588 Precision Time Protocol v2
ITU-T G.8032 version 2 Ethernet ring protection switching(ERPSv2)	
Performance	
<b>Switch Technology</b>	Store and Forward Technology with 56Gbps Non-Blocking Switch Fabric Internal Packet Buffer: 4Mb Forwarding rate: 41.67Mpps (1,488,000pps/port)
<b>CPU</b>	Cortex-A9, max. 1.2GHz
<b>RAM</b>	DDR3 2Gb
<b>Number of MAC Address</b>	16K
<b>Jumbo Frame</b>	9216 Bytes
<b>VLAN</b>	256 VLANs, VLAN ID 1~4094
<b>IGMP Groups</b>	512
<b>Traffic Prioritize</b>	8 Priority Queues per Port
Interface	
<b>Ethernet Port</b>	20 x 10/100/1000M RJ45, Auto Negotiation 4 x 100/1000M RJ45/SFP Combo, (4 copper/4 fiber or 2 copper+2 fiber) 4 x 100/1000M SFP, DDM Energy-Efficient Ethernet for power saving
<b>System LED</b>	2 x Power (P1/P2): Normal: Green On 1 x System Status: Ready: Green On, Firmware Updating: Green Blinking 1 x DI: Green On 1 x Alarm: Red On 1 x Ring Status: Node Normal: Green On, Owner Normal: Green Blinking, Owner/Node Abnormal: Amber On, Ring Port Fail: Amber Blinking
<b>Giga Ethernet Port LED</b>	Link (Green On), Activity (Green Blinking), Speed 1000M(Amber On), Speed 10M/100M (Amber Off)
<b>Giga SFP LED</b>	Link (Green On), Activity (Green Blinking), Speed 1000M(Amber On), Speed 100M (Amber Off)
<b>POE LED</b>	PoE Utilization: Low(0~25%, Green On), Middle(26~50%, Green On), High(51~75%, Amber On), Critical (Higher than 75%, Red On) 24x PoE: PoE ON (Amber On)
<b>Console</b>	1 x RJ45 based RS232 for System Configuration, Baud Rate: 115200.n.8.1
<b>USB</b>	1 x USB for Configuration/Firmware Update
<b>Digital Output (Alarm)</b>	1x Digital Output: Dry Relay Output with 0.5A/24V DC

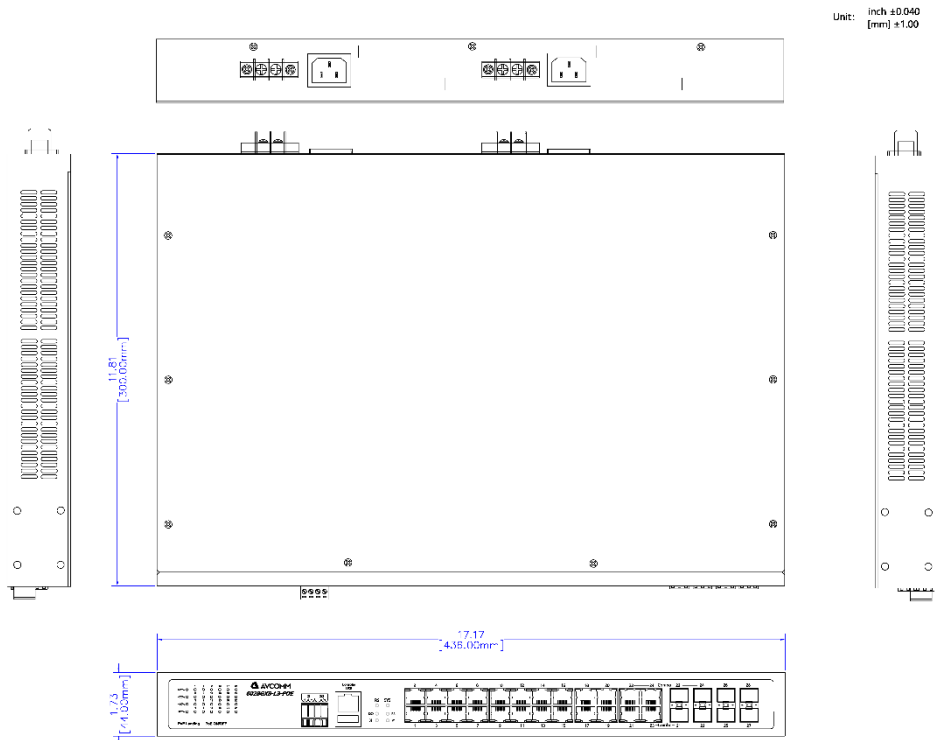
<b>DI</b>	1x Digital Input. Low: 0~10V, High: 11~30V
<b>Watchdog</b>	Hardware-based 10 seconds timer
<b>Power Requirement</b>	
<b>Operating Voltage</b>	Power Input: AC110/220V (90-264VAC) 2DC Input: 2x 54V Typical (IEEE 802.3at request 50~57V)
<b>Power Consumption</b>	Max. 20W @ 8x SFP plugged without PoE
<b>POE</b>	
<b>Power forwarding mode</b>	802.3at Alternative A
<b>PoE Power Budget</b>	AC: Max. 220W@55°C, 150W@70°C Max. 200W@70°C, 2DC Aggregated: Fixed 54V, Max. 400W@70°C Port 1~24: IEEE 802.3at/af, Max. 30W/port
<b>PoE Standard</b>	IEEE 802.3at PoE+, IEEE 802.3af PoE
<b>Management</b>	System/Port Power Budget Control, PoE Scheduling, Priority, PD Alive Check, PoE Status
<b>Software</b>	
<b>Management</b>	WebGUI, Command Line Interface (CLI), IPv4/IPv6(RFC2460), Telnet, SNMP v1/v2c/v3, SNMP Trap/Informs*, RMON, LLDP, DHCP Server/Client/Option 82, TFTP, System Log, SMTP
<b>Traffic Management</b>	Flow Control, Rate Control, Port Mirror, CoS, QoS, RFC 2474 DiffServ
<b>Filter</b>	IGMP Snooping v1/v2/v3, IGMP Snooping Fast-Leave/Immediate-Leave, IGMP Query, GMRP, IEEE802.1Q VLAN, QinQ, GVRP, Private VLAN
<b>Security</b>	IEEE 802.1X/RADIUS, TLS v1.2, HTTPS/SSH
<b>Advanced Security</b>	TACACS+, Multi-user authentication, IEEE802.1x MAB, DHCP Snooping/IPSG, Dynamic ARP inspection, DoS/DDoS*, Adv. Port security*, SFTP
<b>Redundancy</b>	ERPSv2 PLUS ITU-T G.8032 v1/v2 Ethernet Ring Protection Switching (ERPSv2), HW CFM, Loop Protection, Port Trunk/801.1AX/802.3ad LACP, Rapid Spanning Tree Protocol/Spanning Tree Protocol (RSTP/STP), Multiple Spanning Tree Protocol (MSTP)eRSTP (Enhanced Rapid Spanning Tree), up to 80 switches in one Ring
<b>L3</b>	Routing: RIPv2, OSPFv2, Static Multicast Route*, VRRPv2, DVMPR*, PIM*
<b>Time Management</b>	NTP, IEEE 1588 Precision Time Protocol v2
<b>Industrial IoT</b>	Modbus TCP, EtherNet/IP
<b>Utility</b>	AIAS, ANMS
<b>MIB</b>	ERPS MIB, MIB-II, Ethernet-like MIB*, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge MIB, RMON MIB Group 1, 2, 3, 9*, ANMS Private MIB
<b>Mechanical</b>	
<b>Installation</b>	Rackmount
<b>Enclosure Material</b>	Steel Metal
<b>Dimension</b>	6028GX8-L3-POE-AC2/6028GX8-L3-POE-AC-DC2: 436 mm x 44 mm x 300 mm(W x H x D)
<b>Ingress Protection</b>	IP40
<b>Weight</b>	≈2.5KG (full package)
<b>Environmental</b>	
<b>Operating Temperature &amp; Humidity</b>	-40°C~70°C , 0%~95% Non- Condensing
<b>Storage Temperature</b>	-40°C~85°C
<b>MTBF</b>	>445,000 hours
<b>Warranty</b>	5 years
<b>Standard</b>	
<b>EMI</b>	CE EN61000-6-2, EN61000-6-4 EN50121-4 Compliance design for Railway Roadside
<b>EMC</b>	FCC part 15B Class A



## Function interface



## Installation dimensions



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