IS230 Series

Industrial Managed Layer 2 Switches

Our ruggedized IS230 Industrial managed Switches provide enduring performance in harsh environments, such as those found in outdoor IoT, transportation and industrial applications.

Overview

The Allied Telesis IS230 Series is a multipurpose product line of managed layer 2 switches ideal for industrial applications, including manufacturing, rail transportation (telecommunication and signaling), road transportation (traffic control), and Smart Cities.

With fanless operation and a wide operating temperature range of -40° to 75°C, the robust IS230 Series easily tolerates harsh and demanding environments, such as those found in industrial and outdoor deployments.

An integrated voltage regulator ensures the PoE output voltage always stays at the rated value, regardless of any fluctuations in the input voltage of powered devices. An extended input voltage range makes the IS230 Series ideal for deployment in traffic control cabinets.

Network resiliency

The IS230 Series supports highly stable and reliable network switching. You can customize the IS230 with X-Ring protocol to prevent network connection failure. X-Ring protocol recovers network faults within 20ms. It supports couple-ring, dual-ring and dual-homing network topologies. Dual-homing is available even if the other network is running a different ring protection protocol such as RSTP or STP.

Securing the Network Edge

Ensuring data protection means controlling network access. Protocols such as IEEE 802.1X port-based authentication guarantee that only known users are connected to the network. Unknown users who physically connect can be segregated into a pre-determined part of the network. This offers network guests Internet access, while ensuring the integrity of private network data.

Quality of Service

Comprehensive wire-speed QoS provides flow-based traffic management with Port/Tag Base and Type of Service prioritization. Bandwidth control limits ingress/egress traffic and broadcast/multicast/flooded unicast packets.

Gigabit and Fast Ethernet support

The IS230 Series offers combo ports supporting both Gigabit and Fast Ethernet Small Form-Factor Pluggables (SFPs). Support for both SFP types allows organizations to stay within budget even as they migrate to faster technologies.

Configurable power budget

On PoE-sourcing IS230 switches, all LAN ports source POE+ up to 30W. You can configure both the overall power budget and the power feeding limit on a per-port basis, to establish a close relationship between the power sourcing feature and the real capabilities of the external Power Supply Unit (PSU)[1].

Dual power inputs

The IS230 Series provides redundant power inputs for higher system reliability; the power inputs are protected against reverse polarity and over-current.

The integrated voltage regulator allows a wide input voltage range and ensures the PoE output voltage always stays at the rated value, regardless the fluctuation on input voltage.

ECO friendly

The IS230 Series are Energy Efficient Ethernet (EEE) devices. They facilitate power saving by switching off parts of the LAN that are not transmitting or recieving data. This sophisticated feature can significantly reduce operating costs, by reducing the power requirements of the switch and any associated cooling equipment.

Key Features

- Full Gigabit, wire speed ports
- Uplink combo ports
- 100/1000Mbps SFP support
- Flexible management interface (GUI, SNMP, CLI, TELNET and SSH)
- Network fault tolerance (X-Ring, STP, RSTP, and MSTP)
- VLAN stacking (Q-in-Q)
- Multicast support (IGMP and MLD snooping)
- Loopback detection and storm control
- Port mirroring
- Port trunking/link aggregation (LACP)
- Link Layer Discovery (LLDP)
- IEEE 802.3at PoE+ sourcing (30W)
- -40 to +75°C wide-range operating temperature
- Dual power inputs with voltage boost converter
- Alarm output
- Fanless

[1] PSU must be compliant with local/national safety and electrical code requirements. Select the supply with the most appropriate output power derating curve.

Specifications

PRODUCT	10/100/1000T COPPER PORTS	100/1000 COMBO PORTS	POE+ ENABLED PORTS	SWITCHING FABRIC	FORWARDING RATE
IS230-10GP	8	2	8	20Gbps	14.88Mpps

ELECTRICAL/MECHANICAL APPROVALS		
Compliance Mark	CE, FCC, RCM, TUV, VCCI	
Safety	CSA C22.2 No. 61010-2-201 IEC60950-1 UL60950-1 UL61010-2-201	
EMC	AS/NZS CISPR 32, class A EN55024; EN55032, class A EN61000-6-2; EN61000-6-4, class A FCC part 15B, class A ICES-003, issue 6, class A VCCI, class A	
Electrostatic Discharge (ESD)	EN61000-4-2, level 3	
Radiated Susceptibility (RS)	EN61000-4-3, level 3	
Electrical Fast Transient (EFT)	EN61000-4-4, level 3	
Lighting/Surge immunity (Surge)	EN61000-4-5, level 3	
Conducted immunity (CS)	EN61000-4-6, level 3	
Magnetic field immunity	EN61000-4-8, level 4	
Railway	EN50121-4	
Traffic Control	NEMA-TS2	
Freefall	IEC60068-2-31	Class T2.3 (1m drop)
Shock	IEC60068-2-27 MIL-STD-810G 516.6	operational: 15g 11ms, half sine operational: 15g 11ms, half sine
Vibration	IEC60068-2-6 MIL-STD-810G 516.6	operational: 1g @10~150Hz operational: Procedure 1, Category 4, per Figure 514.6C-1

Performance

- Up to 8K MAC addresses
- Packet buffer memory: 512KB (4Mb)
- 8 priority QoS queues
- 4094 configurable VLANs
- 256 simultaneous VLANs
- Supports 9KB jumbo frames
- Up to 255 Layer 2 multicast entries

Other Interfaces

- Type: Serial console (UART)
  Port no.: 1
  Connector: RJ-45 female
- Type: Alarm Output (1A @24Vdc)
  Port no.: 1
  Connector: 2-pin Terminal Block*
- Type: Power Input
  Port no.: 2
  Connector: 2-pin Terminal Block*

* A single 6-pin screw Terminal Block includes both power input and alarm output

Environmental Specifications

- Operating temperature range:
  -40°C to 75°C (-40°F to 167°F)
- Storage temperature range:
  -40°C to 85°C (-40°F to 185°F)
- Operating humidity range:
  10% to 95%RH non-condensing
- Storage humidity range:
  10% to 95%RH non-condensing
- Operating altitude
  3,000m maximum (9,843ft)

Mechanical

- EN 50022, EN 60715 Standardized mounting on rails

Environmental Compliance

- RoHS
- China RoHS
- WEEE

Physical Specifications

PRODUCT	WIDTH X DEPTH X HEIGHT	WEIGHT	ENCLOSURE	MOUNTING	PROTECTION RATE
IS230-10GP	74 x 105 x 152 mm (2.91 x 4.13 x 5.98 in)	1.2 Kg (2.6 4 lb)	Metal shell	DIN rail, wall mount	IP30

Power Characteristics

PRODUCT	INPUT VOLTAGE	COOLING	NO POE LOAD			FULL POE+ LOAD			POE POWER BUDGET	POE SOURCING PORTS	
			MAX POWER CONSUMPTION	MAX HEAT DISSIPATION	NOISE	MAX POWER CONSUMPTION	MAX HEAT DISSIPATION	NOISE		POE (15W)	POE+ (30W)
IS230-10GP	24~48Vdc	Fanless	19.3W @48Vdc	65.8 BTU/h	-	139.3W @48Vdc	475.3 BTU/h	-	120W	8	4

* including PD's consumption and margin

Standards and Protocols

Authentication

RFC 1321 MD5 Message-Digest algorithm
RFC 1828 IP authentication using keyed MD5

Encryption (management traffic only)

FIPS 180-1 Secure Hash standard (SHA-1)
FIPS 186 Digital signature standard (RSA)
FIPS 46-3 Data Encryption Standard (DES and 3DES)

Ethernet

IEEE 802.2 Logical Link Control (LLC)
IEEE 802.3 Ethernet
IEEE 802.3ab 1000BASE-T
IEEE 802.3af Power over Ethernet (PoE)
IEEE 802.3at Power over Ethernet plus (PoE+)
IEEE 802.3az Energy Efficient Ethernet (EEE)
IEEE 802.3u 100BASE-X
IEEE 802.3x Flow control - full-duplex operation
IEEE 802.3z 1000BASE-X

IPv4 Features

RFC 768 User Datagram Protocol (UDP)
RFC 791 Internet Protocol (IP)
RFC 792 Internet Control Message Protocol (ICMP)
RFC 793 Transmission Control Protocol (TCP)
RFC 826 Address Resolution Protocol (ARP)
RFC 894 Standard for the transmission of IP datagrams over Ethernet network
RFC 919 Broadcasting Internet datagrams
RFC 922 Broadcasting Internet datagrams in the presence of subnets
RFC 932 Subnetwork addressing scheme
RFC 950 Internet standard subnetting procedure
RFC 1042 Standard for the transmission of IP datagrams over IEEE 802 networks
RFC 1071 Computing the Internet checksum
RFC 1122 Internet host requirements
RFC 1191 Path MTU discovery
RFC 1918 IP addressing
RFC 2581 TCP congestion control over Ethernet networks

IPv6 Features

RFC 1981 Path MTU discovery for IPv6
RFC 2460 IPv6 specification
RFC 2464 Transmission of IPv6 packets over Ethernet networks
RFC 3484 Default address selection for IPv6
RFC 3587 IPv6 global unicast address format
RFC 4193 Unique local IPv6 unicast addresses
RFC 4291 IPv6 addressing architecture
RFC 4443 Internet Control Message Protocol (ICMPv6)
RFC 4861 Neighbor discovery for IPv6
RFC 4862 IPv6 Stateless Address Auto-Configuration (SLAAC)
RFC 5014 IPv6 socket API for source address selection

Management

SNMPv1, v2c and v3
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 1155 Structure and identification of management information for TCP/IP-based Internets
RFC 1157 Simple Network Management Protocol (SNMP)
RFC 1212 Concise MIB definitions
RFC 1213 MIB for network management of TCP/IP-based Internets: MIB-II
RFC 1239 Standard MIB
RFC 2674 Definitions of managed objects for bridges with traffic classes, multicast filtering and VLAN extensions
RFC 2819 RMON MIB (groups 1,2,3 and 9)
RFC 2863 Interfaces group MIB
RFC 3164 The BSD Syslog protocol
RFC 3418 MIB for SNMP
RFC 3635 Definitions of managed objects for the Ethernet-like interface types
RFC 4022 MIB for the Transmission Control Protocol (TCP)
RFC 4113 MIB for the User Datagram Protocol (UDP)
RFC 4188 Definitions of managed objects for bridges

Multicast Support

IGMP snooping (IGMPv1, v2 and v3)
IGMP snooping fast-leave
IGMP/MLD multicast forwarding (IGMP/MLD proxy)
MLD snooping (MLDv1 and v2)
RFC 2236 Internet Group Management Protocol v2 (IGMPv2)
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 2715 Interoperability rules for multicast routing protocols
RFC 3376 IGMPv3
RFC 3810 Multicast Listener Discovery v2 (MLDv2) for IPv6
RFC 4541 IGMP and MLD snooping switches

Quality of Service (QoS)

IEEE 802.1p Priority tagging
RFC 2211 Specification of the controlled-load network element service
RFC 2474 DiffServ precedence for eight queues/port
RFC 2475 DiffServ architecture
RFC 2597 DiffServ Assured Forwarding (AF)
RFC 3246 DiffServ Expedited Forwarding (EF)

Resiliency Features

IEEE 802.1AX Link aggregation (static and LACP)
IEEE 802.1D MAC bridges
IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
IEEE 802.3ad Static and dynamic link aggregation

Security Features

SSH remote login
SSLv2
IEEE 802.1X authentication protocols (TLS, TTLS, PEAP and MD5)
IEEE 802.1X multi-supplicant authentication
IEEE 802.1X port-based network access control
RFC 2818 HTTP over TLS ("HTTPS")
RFC 2865 RADIUS authentication
RFC 2866 RADIUS accounting
RFC 2986 PKCS #10: certification request syntax specification v1.7
RFC 3579 RADIUS support for Extensible Authentication Protocol (EAP)
RFC 3580 IEEE 802.1x RADIUS usage guidelines
RFC 3748 Extensible Authentication Protocol (EAP)
RFC 4251 Secure Shell (SSHv2) protocol architecture
RFC 4252 Secure Shell (SSHv2) authentication protocol
RFC 4253 Secure Shell (SSHv2) transport layer protocol
RFC 4254 Secure Shell (SSHv2) connection protocol
RFC 5246 Transport Layer Security (TLS) v1.2
RFC 5656 Elliptic curve algorithm integration for SSH
RFC 6668 SHA-2 data integrity verification for SSH
RFC 6818 Updates to the Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
RFC 6960 X.509 Internet Public Key Infrastructure Online Certificate Status Protocol - OCSP

Services

RFC 854 Telnet protocol specification
RFC 855 Telnet option specifications
RFC 857 Telnet echo option
RFC 858 Telnet suppress go ahead option
RFC 1091 Telnet terminal-type option
RFC 1350 The TFTP protocol (revision 2)
RFC 1985 SMTP service extension
RFC 2030 Simple Network Time Protocol (SNTP) version 4
RFC 2131 Dynamic Host Configuration Protocol
RFC 2616 Hypertext Transfer Protocol - HTTP/1.1
RFC 2821 Simple Mail Transfer Protocol (SMTP)
RFC 3046 DHCP relay agent information option (DHCP option 82)
RFC 3315 Dynamic Host Configuration Protocol for IPv6 (DHCPv6)
RFC 3396 Encoding Long Options in the Dynamic Host Configuration Protocol (DHCPv4)

VLAN Support

Generic VLAN Registration Protocol (GVRP)
IEEE 802.1ad Provider bridges (VLAN stacking, Q-in-Q)
IEEE 802.1Q Virtual LAN (VLAN) bridges
IEEE 802.3ac VLAN tagging

Ordering Information

Switches

The DIN rail and wall mount kits are included.

AT-IS230-10GP-80
8x 10/100/1000T, 2x 100/1000X SFP combo, Industrial Layer 2 Switch, POE+ support (120W)

Supported SFP Modules

Refer to the installation guide for the recommended Max. Operating Temperature according to the selected SFP module.

1000Mbps SFP Modules

AT-SPBD10-13
10 km, 1G BiDi SFP, LC, SMF (1310Tx/1490Rx)

AT-SPBD10-14
10 km, 1G BiDi SFP, LC, SMF (1490Tx/1310Rx)

AT-SPBD20-13/I
20 km, 1G BiDi SFP, SC, SMF, I-Temp (1310Tx/1490Rx)

AT-SPBD20-14/I
20 km, 1G BiDi SFP, SC, SMF, I-Temp (1490Tx/1310Rx)

AT-SPEX
2 km, 1000EX SFP, LC, MMF, 1310 nm

AT-SPLX10
10 km, 1000LX SFP, LC, SMF, 1310 nm

AT-SPLX10/I
10 km, 1000LX SFP, LC, SMF, 1310 nm, I-Temp

AT-SPLX40
40 km, 1000LX SFP, LC, SMF, 1310 nm

AT-SPSX
550 m, 1000SX SFP, LC, MMF, 850 nm

AT-SPSX/I
550 m, 1000SX SFP, LC, MMF, 850 nm, I-Temp

AT-SPZX80
80 km, 1000ZX SFP, LC, SMF, 1550 nm

100Mbps SFP Modules

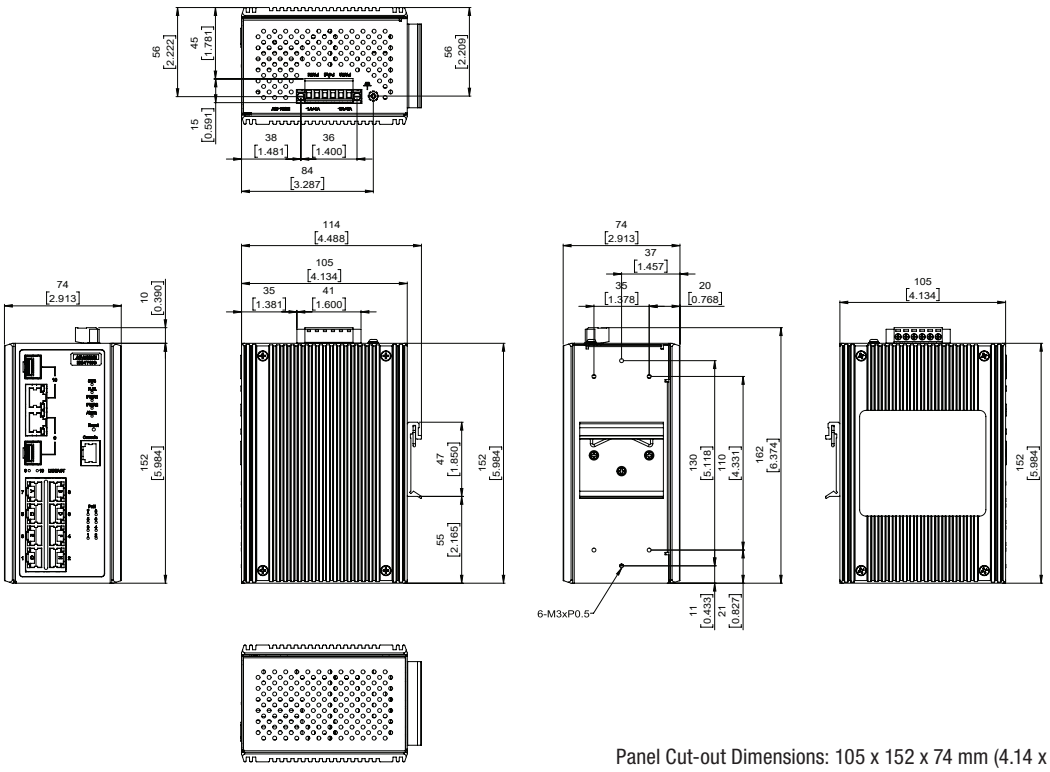
AT-SPFX/2
2 km, 100FX SFP, LC, MMF, 1310 nm

AT-SPFX/15
15 km, 100FX SFP, LC, SMF, 1310 nm

AT-SPFXBD-LC-13
15 km, 100FX BiDi SFP, LC, SMF (1310 Tx/1550 Rx)

AT-SPFXBD-LC-15
15 km, 100FX BiDi SFP, LC, SMF (1550 Rx/1310 Tx)

Dimensions
(mm)



Panel Cut-out Dimensions: 105 x 152 x 74 mm (4.14 x 5.98 x 2.91 in)

North America Headquarters | 19800 North Creek Parkway | Suite 100 | Bothell | WA 98011 | USA | T: +1 800 424 4284 | F: +1 425 481 3895
Asia-Pacific Headquarters | 11 Tai Seng Link | Singapore | 534182 | T: +65 6383 3832 | F: +65 6383 3830
EMEA & CSA Operations | Incheonweg 7 | 1437 EK Rozenburg | The Netherlands | T: +31 20 7950020 | F: +31 20 7950021

alliedtelesis.com

617-000643_ RevC