EDS-P510A Series

8+2G-port Gigabit PoE+ managed Ethernet switches with 8 IEEE 802.3af/at PoE+ ports

Features and Benefits

- 8 built-in PoE+ ports compliant with IEEE 802.3af/at
- Up to 36 W output per PoE+ port
- 3 kV LAN surge protection for extreme outdoor environments
- PoE diagnostics for powered-device mode analysis
- 2 Gigabit combo ports for high-bandwidth and long-distance communication
- Operates with 240 watts full PoE+ loading at -40 to 75°C
- Supports MXstudio for easy, visualized industrial network management
- V-ON™ ensures millisecond-level multicast data and video network recovery

Certifications

Introduction

Moxa's EDS-P510A Series has 8 10/100BaseT(X), 802.3af (PoE), and 802.3at (PoE+)-compliant Ethernet ports, and 2 combo Gigabit Ethernet ports. The EDS-P510A-8PoE Ethernet switches provide up to 30 watts of power per PoE+ port in standard mode and allow high-power output of up to 36 watts for industrial heavy-duty PoE devices, such as weather-proof IP surveillance cameras with wipers/heaters, high-performance wireless access points, and IP phones. The EDS-P510A Ethernet Series is highly versatile, and the SFP fiber ports can transmit data up to 120 km from the device to the control center with high EMI immunity.

The Ethernet switches support a variety of management functions, as well as STP/RSTP, Turbo Ring, Turbo Chain, PoE power management, PoE device auto-checking, PoE power scheduling, PoE diagnostic, IGMP, VLAN, QoS, RMON, bandwidth management, and port mirroring. The EDS-P510A Series is designed with 3 kV surge protection for harsh outdoor applications to increase the reliability of PoE systems.

Additional Features and Benefits

- Supports different PoE output settings (High-power 36 W, Force and Legacy modes) to maximize powered device compatibility
- Supports Smart PoE functions (PoE diagnosis, PD failure check, PoE scheduling, PoE Event Warning) to enhance PoE operational efficiency
- Command line interface (CLI) for quickly configuring major managed functions
- DHCP Option 82 for IP address assignment with different policies
- Supports EtherNet/IP and Modbus TCP protocols for device management and monitoring
- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches),[1] RSTP/STP, and MSTP for network redundancy
- Compatible with PROFINET protocol for transparent data transmission
- IGMP snooping and GMRP for filtering multicast traffic

- Port-based VLAN, IEEE 802.1Q VLAN, and GVRP to ease network planning
- QoS (IEEE 802.1p/1Q and TOS/DiffServ) to increase determinism
- Port Trunking for optimum bandwidth utilization
- TACACS+, IEEE 802.1X, SNMPv3, HTTPS, and SSH to enhance network security
- Lock port function for blocking unauthorized access based on MAC address
- SNMPv1/v2c/v3 for different levels of network management
- RMON for proactive and efficient network monitoring
- Bandwidth management to prevent unpredictable network status
- Port mirroring for online debugging
- Automatic warning by exception through email and relay output

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1. Gigabit Ethernet recovery time < 50 ms

Specifications

Ethernet Interface

Combo Ports (10/100/1000BaseT(X) or 100/1000BaseSFP+)	2 Full/Half duplex mode Auto MDI/MDI-X connection Auto negotiation speed
PoE Ports (10/100BaseT(X), RJ45 connector)	8 Full/Half duplex mode Auto MDI/MDI-X connection Auto negotiation speed
Standards	IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1X for authentication IEEE 802.3 for 10BaseT IEEE 802.3ab for 1000BaseT(X) IEEE 802.3ad for Port Trunk with LACP IEEE 802.3af/at for PoE/PoE+ output IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for flow control IEEE 802.3z for 1000BaseSX/LX/LHX/ZX

Ethernet Software Features

Filter	GMRP, GVRP, IGMP v1/v2, Port-based VLAN
Industrial Protocols	EtherNet/IP, Modbus TCP
Management	Back Pressure Flow Control, BOOTP, DDM, DHCP Option 66/67/82, DHCP Server/Client, Fiber check, Flow control, IPv4/IPv6, LLDP, Port Mirror, RARP, RMON, SMTP, SNMP Inform, SNMPv1/v2c/v3, Syslog, Telnet, TFTP
MIB	Bridge MIB, Ethernet-like MIB, MIB-II, P-BRIDGE MIB, Q-BRIDGE MIB, RMON MIB Groups 1, 2, 3, 9, RSTP MIB
Redundancy Protocols	LACP, Link Aggregation, MSTP, RSTP, STP, Turbo Chain, Turbo Ring v1/v2
Security	HTTPS/SSL, Port Lock, RADIUS, TACACS+, SSH
Time Management	NTP Server/Client, SNTP

Switch Properties

IGMP Groups	1024
MAC Table Size	8 K
Max. No. of VLANs	64
Packet Buffer Size	1 Mbits
Priority Queues	4
VLAN ID Range	VID 1 to 4094

Serial Interface

Console Port	RS-232 (TxD, RxD, GND), 10-pin RJ45 (19200, n, 8, 1)

DIP Switch Configuration

Ethernet Interface	Turbo Ring, Master, Coupler, Reserve

Input/Output Interface

Alarm Contact Channels	1, Relay output with current carrying capacity of 0.5 A @ 48 VDC
Digital Input Channels	1
Digital Inputs	Max. input current: 8 mA +13 to +30 V for state 1 -30 to +3 V for state 0

Power Parameters

Input Voltage	48 VDC, Redundant dual inputs
Operating Voltage	44 to 57 VDC
Input Current	5.36 A @ 48 VDC
Power Consumption (Max.)	Max. 17.28 W full loading without PDs' consumption
Power Budget	Max. 240 W for total PD consumption Max. 36 W for each PoE port
Connection	2 removable 2-contact terminal block(s)
Overload Current Protection	Supported
Reverse Polarity Protection	Supported

Physical Characteristics

Housing	Metal
IP Rating	IP30
Dimensions	79.2 x 135 x 105 mm (3.12 x 5.31 x 4.13 in)
Weight	1030 g (2.28 lb)
Installation	DIN-rail mounting, Wall mounting (with optional kit)

Environmental Limits

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Operating Temperature	EDS-P510A-8PoE-2GTXSFP: -10 to 60°C (14 to 140°F) EDS-P510A-8PoE-2GTXSFP-T: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

Safety	UL 508
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Hazardous Locations	Class I Division 2
Railway	EN 50121-4
Traffic Control	NEMA TS2

Freefall	IEC 60068-2-31
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6

MTBF

Time	708,972 hrs
Standards	Telcordia (Bellcore), GB

Warranty

Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x EDS-P510A Series switch
Cable	1 x DB9 female to RJ45 10-pin
Installation Kit	4 x cap, plastic, for RJ45 port 2 x cap, plastic, for SFP slot
Documentation	1 x quick installation guide 1 x product certificates of quality inspection, Simplified Chinese 1 x product notice, Simplified Chinese 1 x warranty card
Note	SFP modules need to be purchased separately for use with this product.

Dimensions

Unit: mm (inch)

Side View   Front View   Rear View   DIN-Rail/Panel-Mounting Kit
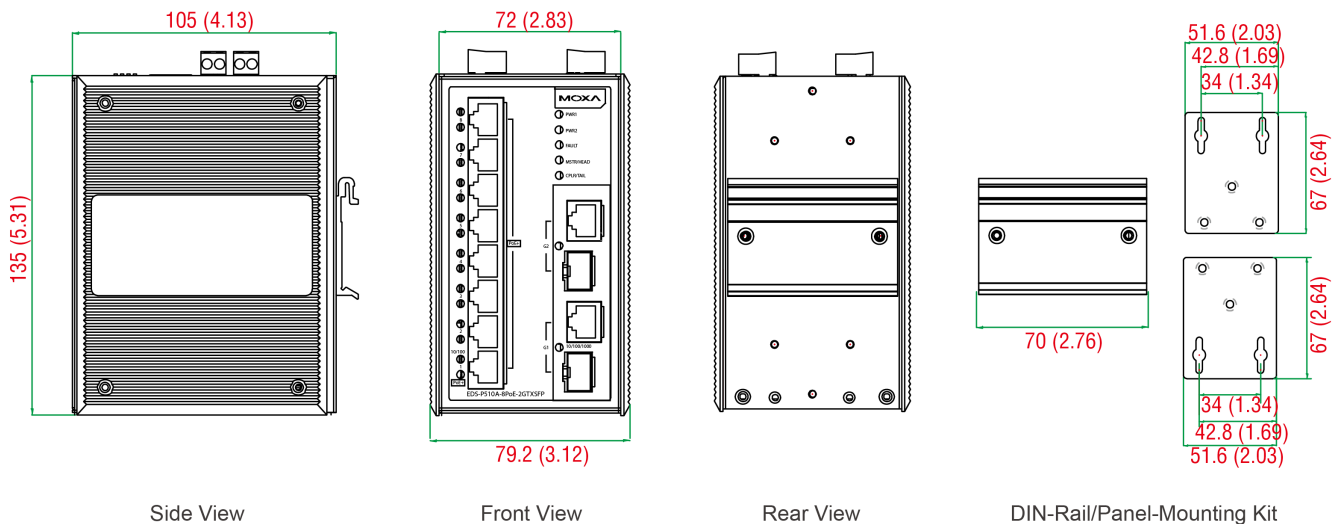
Ordering Information

Model Name	Combo Ports 10/100/1000BaseT(X) or 100/1000BaseSFP+	PoE Ports 10/100BaseT(X), RJ45 Connector	Operating Temp.
EDS-P510A-8PoE-2GTXSFP	2	8	-10 to 60°C
EDS-P510A-8PoE-2GTXSFP-T	2	8	-40 to 75°C

Accessories (sold separately)

Storage Kits

ABC-02-USB	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, 0 to 60°C operating temperature
ABC-02-USB-T	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, -40 to 75°C operating temperature

SFP Modules

SFP-1FELLC-T	SFP module with 1 100Base single-mode with LC connector for 80 km transmission, -40 to 85°C operating temperature
SFP-1FEMLC-T	SFP module with 1 100Base multi-mode with LC connector for 4 km transmission, -40 to 85°C operating temperature
SFP-1FESLC-T	SFP module with 1 100Base single-mode with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1G10ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G10ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G10BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G10BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1G20ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G20ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G20BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G20BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1G40ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G40ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G40BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G40BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1GEZXLC	SFP module with 1 1000BaseEZX port with LC connector for 110 km transmission, 0 to 60°C operating temperature
SFP-1GEZXLC-120	SFP module with 1 1000BaseEZX port with LC connector for 120 km transmission, 0 to 60°C operating temperature
SFP-1GLHLC	SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, 0 to 60°C operating temperature
SFP-1GLHLC-T	SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, -40 to 85°C operating temperature
SFP-1GLHXLC	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature
SFP-1GLHXLC-T	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1GLSXLC	SFP module with 1 1000BaseLSX port with LC connector for 500 m transmission, 0 to 60°C operating temperature
SFP-1GLSXLC-T	SFP module with 1 1000BaseLSX port with LC connector for 500 m transmission, -40 to 85°C operating temperature

SFP-1GLXLC	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature
SFP-1GLXLC-T	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature
SFP-1GSXLC	SFP module with 1 1000BaseSX port with LC connector for 300/550 m transmission, 0 to 60°C operating temperature
SFP-1GSXLC-T	SFP module with 1 1000BaseSX port with LC connector for 300/550 m transmission, -40 to 85°C operating temperature
SFP-1GZXLC	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, 0 to 60°C operating temperature
SFP-1GZXLC-T	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, -40 to 85°C operating temperature

Power Supplies

DR-120-48	120W/2.5A DIN-rail 48 VDC power supply with universal 88 to 132 VAC or 176 to 264 VAC input by switch, or 248 to 370 VDC input, -10 to 60°C operating temperature
DR-75-48	75W/1.6A DIN-rail 48 VDC power supply with universal 85 to 264 VAC or 120 to 370 VDC input, -10 to 60°C operating temperature
DRP-240-48	DIN-rail 48 VDC power supply with 240W/5A, 85 to 264 VAC, or 120 to 370 VDC input, -10 to 70°C operating temperature
SDR-480P-48	DIN-rail 48 VDC power supply with 480W/10A, 90 to 264 VAC, or 127 to 370 VDC input, (current sharing up to 3840 W), -25 to 70°C operating temperature

Wall-Mounting Kits

WK-46-01	Wall-mounting kit, 2 plates, 8 screws, 46 x 66.8 x 2 mm

Rack-Mounting Kits

RK-4U	19-inch rack-mounting kit

Software

MXview-50	Industrial network management software with a license for 50 nodes (by IP address)
MXview-100	Industrial network management software with a license for 100 nodes (by IP address)
MXview-250	Industrial network management software with a license for 250 nodes (by IP address)
MXview-500	Industrial network management software with a license for 500 nodes (by IP address)
MXview-1000	Industrial network management software with a license for 1000 nodes (by IP address)
MXview-2000	Industrial network management software with a license for 2000 nodes (by IP address)
MXview Upgrade-50	License expansion of MXview industrial network management software by 50 nodes (by IP address)

www.yoisys.com | moxa@yoisys.com