

# EDS-P510 Series

7+3G-port Gigabit PoE managed Ethernet switches with 4 IEEE 802.3af PoE ports



### Feature and Benefits

- 4 IEEE 802.3af-compliant PoE and Ethernet combo ports
- Provides up to 15.4 watts at 48 VDC per PoE port
- Intelligent power consumption detection, PD failure check, and PoE scheduling function
- 3 combo (10/100/1000BaseT(X) or 100/1000BaseSFP slot) Gigabit ports; 2 ports for redundant ring and 1 port for uplink
- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches), RSTP/STP, and MSTP for network redundancy
- Supports MXstudio for easy, visualized industrial network management
- V-ON™ ensures millisecond-level multicast data and video network recovery

### Certifications



### Introduction

The EDS-P510 Series Gigabit managed redundant Ethernet switches have 4 10/100BaseT(X) 802.3af (PoE) compliant Ethernet ports and 3 combo Gigabit Ethernet ports. The EDS-P510 switches provide up to 15.4 watts of power per PoE port, and allow power to be supplied to connected devices (such as surveillance cameras, wireless access points, and IP phones) when AC power is not readily available or is cost-prohibitive to provide locally. The EDS-P510 switches are highly versatile, and their SFP fiber port can transmit data up to 80 km from the device to the control center with high EMI immunity. The Ethernet switches support advanced management and security features. The EDS-P510 Series is designed especially for security automation applications such as IP surveillance and entry system gates, which can benefit from a scalable backbone construction and PoE.

### Additional Features and Benefits

- Advanced PoE management function (PoE port setting, PD failure check, and PoE scheduling)
- Command Line Interface (CLI) for quickly configuring major managed functions
- DHCP Option 82 for IP address assignment with different policies
- Support EtherNet/IP and Modbus/TCP protocols for device management and monitoring
- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches), RSTP/STP, and MSTP for network redundancy
- 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 efficient network monitoring and proactive capability
- Bandwidth management to prevent unpredictable network status
- Port mirroring for online debugging
- Automatic warning by exception through e-mail, relay output

### Specifications

#### Ethernet Interface

|   |   |
|---|---|
| Combo Ports (10/100/1000BaseT(X) or 100/1000BaseSFP+) | 3<br>Auto negotiation speed<br>Full/Half duplex mode<br>Auto MDI/MDI-X connection |
| 10/100BaseT(X) Ports (RJ45 connector)                 | 3<br>Auto negotiation speed<br>Full/Half duplex mode<br>Auto MDI/MDI-X connection |

|  |   |
|--|---|
| PoE Ports (10/100BaseT(X), RJ45 connector) | 4<br>Auto negotiation speed<br>Full/Half duplex mode<br>Auto MDI/MDI-X connection   |
| Standards                                  | IEEE 802.1D-2004 for Spanning Tree Protocol<br>IEEE 802.1p for Class of Service<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1s for Multiple Spanning Tree Protocol<br>IEEE 802.1w for Rapid Spanning Tree Protocol<br>IEEE 802.1X for authentication<br>IEEE 802.3 for 10BaseT<br>IEEE 802.3ab for 1000BaseT(X)<br>IEEE 802.3ad for Port Trunk with LACP<br>IEEE 802.3u for 100BaseT(X) and 100BaseFX<br>IEEE 802.3x for flow control<br>IEEE 802.3z for 1000BaseSX/LX/LHX/ZX<br>IEEE 802.3af for PoE |

#### 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, 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             | TACACS+, HTTPS/SSL, Port Lock, RADIUS, SSH   |
| Time Management      | NTP Server/Client, SNTP  |

#### Input/Output Interface

|                        |   |
|------------------------|---|
| Alarm Contact Channels | 2, Relay output with current carrying capacity of 1 A @ 24 VDC                  |
| Digital Input Channels | 2   |
| Digital Inputs         | -30 to +3 V for state 0<br>+13 to +30 V for state 1<br>Max. input current: 8 mA |

#### 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 |
|--------------------|--------------------------------------|

## Power Parameters

|                             |   |
|-----------------------------|---|
| Connection                  | 2 removable 6-contact terminal block(s)                               |
| Input Current               | 1.58 A @ 48 VDC   |
| Input Voltage               | 48 VDC, Redundant dual inputs   |
| Operating Voltage           | 44 to 57 VDC  |
| Overload Current Protection | Supported   |
| Power Budget                | Max. 15.4 W for each PoE port<br>Max. 61.6 W for total PD consumption |
| Power Consumption (Max.)    | Max. 14.24 W full loading without PDs' consumption                    |
| Reverse Polarity Protection | Supported   |

## Physical Characteristics

|              |  |
|--------------|--|
| Dimensions   | 80.2 x 135 x 105 mm (3.16 x 5.31 x 4.13 in)          |
| Housing      | Metal  |
| Installation | DIN-rail mounting, Wall mounting (with optional kit) |
| IP Rating    | IP30   |
| Weight       | 1,170 g (2.58 lb)                                    |

## Environmental Limits

|  |   |
|--|---|
| Ambient Relative Humidity              | 5 to 95% (non-condensing)   |
| Operating Temperature                  | EDS-P510: 0 to 60°C (32 to 140°F)<br>EDS-P510-T: -40 to 75°C (-40 to 167°F) |
| Storage Temperature (package included) | -40 to 85°C (-40 to 185°F)  |

## Standards and Certifications

|           |  |
|-----------|--|
| EMC       | EN 55032/24  |
| EMI       | CISPR 32, FCC Part 15B Class A   |
| EMS       | IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 PFMF |
| Freefall  | IEC 60068-2-31   |
| Safety    | UL 508   |
| Shock     | IEC 60068-2-27   |
| Vibration | IEC 60068-2-6  |

## MTBF

|           |                          |
|-----------|--------------------------|
| Time      | 205,384 hrs              |
| Standards | Telcordia (Bellcore), GB |

## Warranty

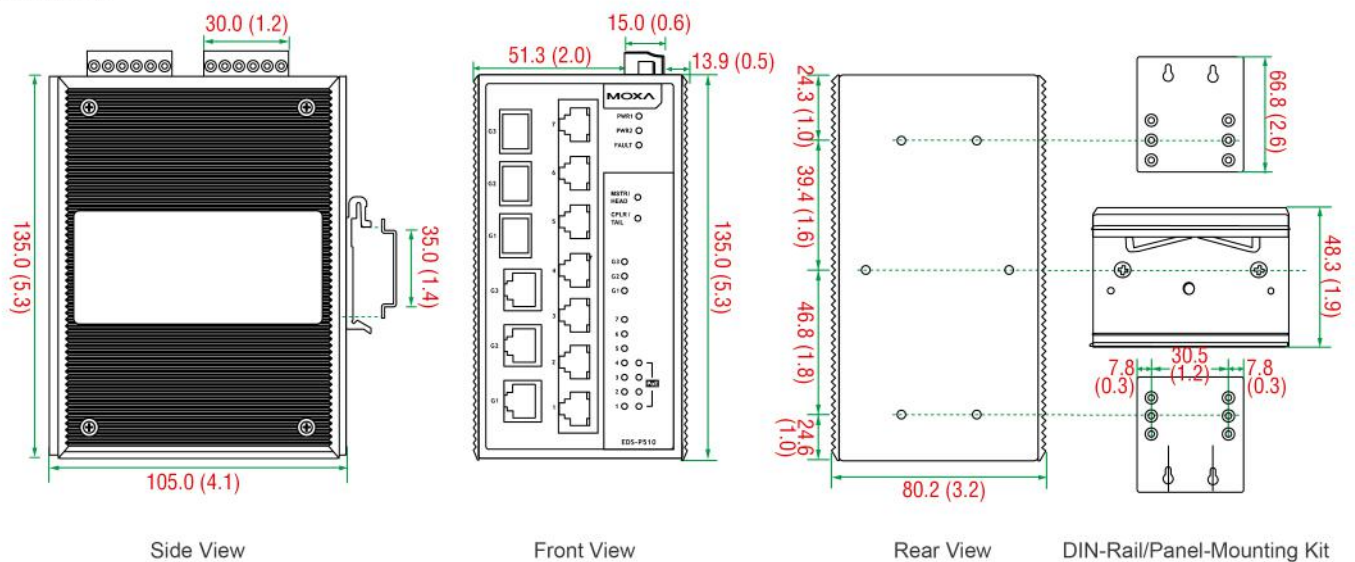
|                 |  |
|-----------------|--|
| Warranty Period | 5 years  |
| Details         | See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a> |

## Package Contents

|                  |   |
|------------------|---|
| Note             | SFP modules need to be purchased separately for use with this product.  |
| Cable            | 1 x DB9 female to RJ45 10-pin   |
| Device           | 1 x EDS-P510 Series switch  |
| Documentation    | 1 x product certificates of quality inspection, Simplified Chinese<br>1 x product notice, Simplified Chinese<br>1 x quick installation guide<br>1 x warranty card |
| Installation Kit | 8 x cap, plastic, for RJ45 port<br>3 x cap, plastic, for SFP slot   |

## Dimensions

Unit: mm (inch)



## Ordering Information

| Model Name | Combo Ports<br>10/100/1000BaseT(X) or 100/<br>1000BaseSFP | PoE Ports<br>10/100BaseT(X) | non-PoE Ports<br>10/100BaseT(X) | Operating Temp. |
|------------|---|-----------------------------|---------------------------------|-----------------|
| EDS-P510   | 3   | 4                           | 3                               | 0 to 60°C       |
| EDS-P510-T | 3   | 4                           | 3                               | -40 to 75°C     |

## Accessories (sold separately)

### Software

|        |   |
|--------|---|
| MXview | Industrial network management software designed for converged automation networks |
|--------|---|

### 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 |
| <b>SFP Modules</b> |   |
| 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 1000BaseEZXC port with LC connector for 110 km transmission, 0 to 60°C operating temperature  |
| SFP-1GEZXLC-120    | SFP module with 1 1000BaseEZXC 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-1GLHLC         | SFP module with 1 1000BaseLH port with LC connector for 40 km transmission, 0 to 60°C operating temperature   |
| SFP-1GLHLC-T       | SFP module with 1 1000BaseLH port with LC connector for 40 km transmission, -40 to 85°C operating temperature   |
| SFP-1GLSXC         | SFP module with 1 1000BaseLSX port with LC connector for 500 m transmission, 0 to 60°C operating temperature  |
| SFP-1GLSXC-T       | SFP module with 1 1000BaseLSX port with LC connector for 500 m transmission, -40 to 85°C operating temperature  |
| SFP-1GLXC          | SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature   |
| SFP-1GLXC-T        | SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature   |
| SFP-1GSXC          | 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 |
|-------|---------------------------|

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