

EDS-G512E Series

12G-port (with 8 PoE+ ports option) full Gigabit managed Ethernet switches



Features and Benefits

- 8 IEEE 802.3af and IEEE 802.3at PoE+ standard ports
- 36-watt output per PoE+ port in high-power mode
- Turbo Ring and Turbo Chain (recovery time < 50 ms @ 250 switches), RSTP/STP, and MSTP for network redundancy
- RADIUS, TACACS+, MAB Authentication, SNMPv3, IEEE 802.1X, MAC ACL, HTTPS, SSH, and sticky MAC-addresses to enhance network security
- Security features based on IEC 62443
- EtherNet/IP, PROFINET, and Modbus TCP protocols supported for device management and monitoring
- Supports MXstudio for easy, visualized industrial network management
- V-ON™ ensures millisecond-level multicast data and video network recovery

Certifications



Introduction

The EDS-G512E Series is equipped with 12 Gigabit Ethernet ports and up to 4 fiber-optic ports, making it ideal for upgrading an existing network to Gigabit speed or building a new full Gigabit backbone. It also comes with 8 10/100/1000BaseT(X), 802.3af (PoE), and 802.3at (PoE+)-compliant Ethernet port options to connect high-bandwidth PoE devices. Gigabit transmission increases bandwidth for higher performance and transfers large amounts of triple-play services across a network quickly.

Redundant Ethernet technologies such as Turbo Ring, Turbo Chain, RSTP/STP, and MSTP increase the reliability of your system and improve the availability of your network backbone. The EDS-G512E Series is designed specifically for communication demanding applications, such as video and process monitoring, ITS, and DCS systems, all of which can benefit from a scalable backbone construction.

Additional Features and Benefits

- Command line interface (CLI) for quickly configuring major managed functions
- Advanced PoE management function (PoE port setting, PD failure check, and PoE scheduling)
- DHCP Option 82 for IP address assignment with different policies
- Supports EtherNet/IP, PROFINET, and Modbus TCP protocols for device management and monitoring
- IGMP snooping and GMRP for filtering multicast traffic
- Port-based VLAN, IEEE 802.1Q VLAN, and GVRP to ease network planning
- Supports the ABC-02-USB (Automatic Backup Configurator) for system configuration backup/restore and firmware upgrade
- Port mirroring for online debugging
- QoS (IEEE 802.1p/1Q and TOS/DiffServ) to increase determinism
- Port Trunking for optimum bandwidth utilization
- RADIUS, TACACS+, MAB Authentication, SNMPv3, IEEE 802.1X, MAC ACL, HTTPS, SSH, and sticky MAC address to enhance network security
- SNMPv1/v2c/v3 for different levels of network management
- RMON for proactive and efficient network monitoring
- Bandwidth management to prevent unpredictable network status
- Lock port function for blocking unauthorized access based on MAC address
- Automatic warning by exception through email and relay output

Specifications

Input/Output Interface

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

Ethernet Interface

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|---|---|
| 10/100/1000BaseT(X) Ports (RJ45 connector) | EDS-G512E-4GSFP: 8 Auto negotiation speed Full/Half duplex mode Auto MDI/MDI-X connection |
| PoE Ports (10/100/1000BaseT(X), RJ45 connector) | EDS-G512E-8PoE-4GSFP: 8 |
| 100/1000BaseSFP Slots | 4 |
| Standards | IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseSX/LX/LHX/ZX IEEE 802.3x for flow control IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1X for authentication IEEE 802.3ad for Port Trunk with LACP |

Ethernet Software Features

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| Filter | 802.1Q VLAN, Port-based VLAN, GVRP, IGMP v1/v2/v3, GMRP |
| Industrial Protocols | EtherNet/IP, Modbus TCP, PROFINET IO Device |
| Management | LLDP, Back Pressure Flow Control, BOOTP, Port Mirror, DHCP Option 66/67/82, DHCP Server/Client, Fiber check, Flow control, IPv4/IPv6, RARP, RMON, SMTP, SNMP Inform, SNMPv1/v2c/v3, Syslog, Telnet, TFTP |
| MIB | Ethernet-like MIB, MIB-II, Bridge MIB, P-BRIDGE MIB, Q-BRIDGE MIB, RMON MIB Groups 1, 2, 3, 9, RSTP MIB |
| Redundancy Protocols | Link Aggregation, MSTP, RSTP, STP, Turbo Chain, Turbo Ring v1/v2 |
| Security | Broadcast storm protection, HTTPS/SSL, TACACS+, SNMPv3, MAB authentication, Sticky MAC, NTP authentication, MAC ACL, Port Lock, RADIUS, SSH, SMTP with TLS |
| Time Management | NTP Server/Client, SNTP |

Switch Properties

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| IGMP Groups | 2048 |
| Jumbo Frame Size | 9.6 KB |
| MAC Table Size | 8 K |
| Max. No. of VLANs | 256 |
| Packet Buffer Size | 4 Mbits |
| Priority Queues | 4 |
| VLAN ID Range | VID 1 to 4094 |

USB Interface

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| Storage Port | USB Type A |
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LED Interface

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| LED Indicators | PWR1, PWR2, STATE, FAULT, 10/100M (TP port), 1000M (TP port), 100/1000M (SFP port), MSTR/HEAD, CPLR/TAIL, smart PoE LED (EDS-G512E-8PoE-4GSFP Series only) |
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Serial Interface

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| Console Port | USB-serial console (Type B connector) |
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DIP Switch Configuration

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| DIP Switches | Turbo Ring, Master, Coupler, Reserve |
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Power Parameters

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| Connection | 2 removable 4-contact terminal block(s) |
| Input Current | EDS-G512E-4GSFP Series: 0.34 A @ 24 VDC EDS-G512E-8PoE-4GSFP Series: 5.30 A @ 48 VDC |
| Input Voltage | EDS-G512E-4GSFP Series: 12/24/48/-48 VDC EDS-G512E-8PoE-4GSFP Series: 48 VDC (Both series have redundant dual input) |
| Operating Voltage | EDS-G512E-4GSFP Series: 9.6 to 60 VDC EDS-G512E-8PoE-4GSFP Series: 44 to 57 VDC (> 50 VDC for PoE+ output recommended) |
| Overload Current Protection | Supported |
| Reverse Polarity Protection | Supported |
| Power Budget | EDS-G512E-8PoE-4GSFP: Max. 240 W for total PD consumption EDS-G512E-8PoE-4GSFP: Max. 36 W for each PoE port |
| Power Consumption (Max.) | EDS-G512E-8PoE-4GSFP: Max. 14.36 W full loading without PDs' consumption Note: When selecting a power supply, check the PD power consumption. |

Physical Characteristics

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| Housing | Metal |
| IP Rating | IP30 |
| Dimensions | 79.2 x 135 x 137 mm (3.1 x 5.3 x 5.4 in) |
| Weight | EDS-G512E-4GSFP: 1,440 g (3.18 lb) EDS-G512E-8PoE-4GSFP: 1,540 g (3.40 lb) |
| Installation | DIN-rail mounting, Wall mounting (with optional kit) |

Environmental Limits

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| Operating Temperature | Standard Models: -10 to 60°C (14 to 140°F) Wide Temp. Models: -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

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| Safety | EDS-G512E-4GSFP/EDS-G512E-8PoE-4GSFP Series: UL 508 EDS-G512E-8PoE-4GSFP Series: EN 60950-1 (LVD) |
| EMC | EN 61000-6-2/-6-4 |
| EMI | CISPR 32, FCC Part 15B Class A |
| EMS | EDS-G512E-4GSFP: IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV EDS-G512E-4GSFP: IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m EDS-G512E-8PoE-4GSFP: IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m EDS-G512E-4GSFP: IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV EDS-G512E-8PoE-4GSFP: IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV EDS-G512E-4GSFP: IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV EDS-G512E-8PoE-4GSFP: IEC 61000-4-5 Surge: Power: 2 kV; Signal: 4 kV |

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| | IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF |
| Hazardous Locations | EDS-G512E-4GSFP Series: ATEX, Class I Division 2 |
| Maritime | EDS-G512E-4GSFP: DNV-GL, EDS-G512E-4GSFP: LR, EDS-G512E-4GSFP: ABS, EDS-G512E-4GSFP: NK |
| Power Substation | IEC 61850-3, IEEE 1613 |
| Railway | EN 50121-4 |
| Traffic Control | EDS-G512E-4GSFP: NEMA TS2 |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-32 |
| Vibration | IEC 60068-2-6 |

MTBF

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|-----------|---|
| Time | EDS-G512E-4GSFP Series: 816,823 hrs EDS-G512E-8PoE-4GSFP Series: 361,368 hrs |
| Standards | Telcordia (Bellcore), GB |

Warranty

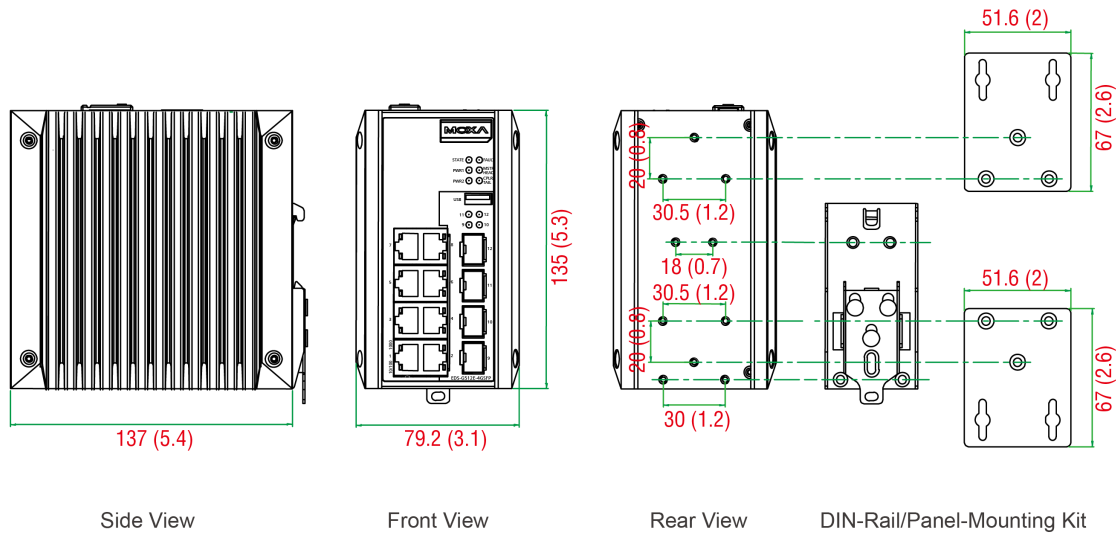
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|-----------------|--|
| Warranty Period | 5 years |
| Details | See www.moxa.com/warranty |

Package Contents

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|------------------|---|
| Device | 1 x EDS-G512E Series switch |
| Cable | 1 x USB type A male to USB type B male |
| Installation Kit | 4 x cap, plastic, for RJ45 port |
| Documentation | 1 x quick installation guide 1 x warranty card 1 x product certificates of quality inspection, Simplified Chinese 1 x product notice, Simplified Chinese |
| Note | SFP modules need to be purchased separately for use with this product. |

Dimensions

Unit: mm (inch)



Ordering Information

| Model Name | 10/100/1000BaseT(X) Ports, RJ45 Connector | PoE Ports, 10/100/1000BaseT(X), RJ45 Connector | IEEE 802.3af/at for PoE/PoE+ Output | 100/1000Base SFP Slots | Operating Temp. |
|------------------------|---|--|-------------------------------------|------------------------|-----------------|
| EDS-G512E-4GSFP | 8 | – | – | 4 | -10 to 60°C |
| EDS-G512E-4GSFP-T | 8 | – | – | 4 | -40 to 75°C |
| EDS-G512E-8PoE-4GSFP | – | 8 | ✓ | 4 | -10 to 60°C |
| EDS-G512E-8PoE-4GSFP-T | – | 8 | ✓ | 4 | -40 to 75°C |

Accessories (sold separately)

Storage Kits

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| 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

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| 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 |

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| 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-1GLHXC | SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature |
| SFP-1GLHXC-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 |
| SFP-1GTXRJ45-T | SFP module with 1 1000BaseT port with RJ45 connector for 100 m transmission, -40 to 75°C operating temperature |

Wall-Mounting Kits

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| WK-51-01 | Wall-mounting kit, 2 plates, 6 screws, 51.6 x 67 x 2 mm |
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Rack-Mounting Kits

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| RK-4U | 19-inch rack-mounting kit |
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Software

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|------------|---|
| 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) |

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|-------------------|--|
| 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) |

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