

# EDS-518E Series

## 14+4G-port Gigabit managed Ethernet switches



- ▶ 4 Gigabit plus 14 fast Ethernet ports for copper and fiber
- ▶ Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches), RSTP/STP, and MSTP for network redundancy
- ▶ RADIUS, TACACS+, MAB Authentication, SNMPv3, IEEE 802.1X, MAC ACL, HTTPS, SSH, and MAC-address sticky to enhance network security
- ▶ Security features based on IEC 62443
- ▶ EtherNet/IP, PROFINET, and Modbus/TCP protocols supported for device management and monitoring
- ▶ Fiber Check™—comprehensive fiber status monitoring and warning on MST/MS/SSC/SFP fiber ports
- ▶ Supports MXstudio for easy, visualized industrial network management
- ▶ V-ON™ ensures millisecond-level multicast data and video network recovery



### Introduction

The EDS-518E Series is a standalone, compact-size 18-port managed Ethernet switch that provides 4 combo Gigabit ports with built-in RJ45 or SFP slots for Gigabit fiber optic communication. The 14 fast Ethernet ports with a variety of copper and fiber port combinations gives the EDS-518E series greater flexibility for designing your network and application. The Ethernet redundancy technologies Turbo

Ring, Turbo Chain, RSTP/STP, and MSTP increase the system reliability and availability of your network backbone. The EDS-518E also supports advanced management and security features.

In addition, the EDS-518E Series is designed especially for harsh industrial environments with limited installation space and high protection level requirements, such as maritime, rail wayside, oil & gas, factory automation, and process automation.

### Features and Benefits

- Software-based IEEE 1588v2 PTP (Precision Time Protocol) for time synchronization of networks
- DHCP Option 82 for IP address assignment with different policies
- Support 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
- QoS (IEEE 802.1p/1Q) and TOS/DiffServ to increase determinism
- Port Trunking for optimum bandwidth utilization
- SNMPv1/v2c/v3 for different levels of network management
- RMON for efficient network monitoring
- Fiber Check™ provides a comprehensive fiber Digital Diagnostic Monitoring (DDM) function and event warning on MST/MS/SSC/SFP fiber ports
- Bandwidth management prevents unpredictable network status
- Lock port function for blocking unauthorized access based on MAC address
- Port mirroring for online debugging
- Automatic warning by exception through e-mail and relay output
- Supports the ABC-02-USB (Automatic Backup Configurator) for system configuration backup/restore and firmware upgrade

### Specifications

#### Technology

##### Standards:

- IEEE 802.3 for 10BaseT
- IEEE 802.3u for 100BaseT(X) and 100BaseFX
- IEEE 802.3ab for 1000BaseT(X)
- IEEE 802.3z for 1000BaseX
- IEEE 802.3x for Flow Control
- IEEE 802.1D-2004 for Spanning Tree Protocol
- IEEE 802.1w for Rapid STP
- IEEE 802.1s for Multiple Spanning Tree Protocol
- IEEE 802.1Q for VLAN Tagging
- IEEE 802.1p for Class of Service
- IEEE 802.1x for Authentication
- IEEE 802.3ad for Port Trunk with LACP

##### Software Features

**Management:** IPv4/IPv6, SNMP v1/v2c/v3, LLDP, Port Mirror, DDM, Fiber Check, RMON, DHCP Server/Client, DHCP Option 66/67/82, BootP, TFTP, SMTP, RARP, Telnet, Syslog, SNMP Inform, Flow Control, Back Pressure Flow Control  
**Filter:** 802.1Q VLAN, Port-Based VLAN, GVRP, IGMP v1/v2/v3, GMRP  
**Redundancy Protocols:** STP, RSTP, MSTP, Turbo Ring v1/v2, Turbo Chain, Link Aggregation  
**Security:** RADIUS, TACACS+, MAB Authentication, HTTPS, SSL, SSH, Broadcast Storm Protection, Port Lock, MAC ACL, MAC Sticky, NTP Authentication, SMTP with TLS

**Time Management:** SNTP, NTP Server/Client, IEEE 1588v2 PTP (software-based)

**Industrial Protocols:** EtherNet/IP, Modbus/TCP, PROFINET IO  
**MIB:** MIB-II, Ethernet-Like MIB, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9

##### Switch Properties

- Priority Queues:** 4
- Max. Number of Available VLANs:** 64
- VLAN ID Range:** VID 1 to 4094
- IGMP Groups:** 256
- MAC Table Size:** 16 K
- Packet Buffer Size:** 1 Mbit

##### Interface

**RJ45 Ports:** 10/100BaseT(X) or 10/100/1000BaseT(X) auto negotiation speed  
**Fiber Ports:** 100BaseFX (SC/ST connector) and 100/1000BaseSFP slot  
**Console Port:** USB-serial console (Type B connector)  
**Storage Port:** USB storage port (Type A connector)  
**LED Indicators:** PWR1, PWR2, STATE, FAULT, 10/100M (TP port), 100M (fiber port), 100/1000M (Gigabit port), MSTR/HEAD, CPLR/TAIL  
**Alarm Contact:** 1 relay output with current carrying capacity of 1 A @ 24 VDC

**Digital Inputs:** 1 input with the same ground, but electrically isolated from the electronics.

- +13 to +30 V for state “1”
- -30 to +3 V for state “0”
- Max. input current: 8 mA

**Button:** Reset button

**Optical Fiber**

		100BaseFX		
		Multi-Mode		Single-Mode
Fiber Cable Type	OM1	50/125 μm	G.652	
		800 MHz*km	5 km	40 km
Typical Distance		4 km	5 km	40 km
Wave-length	Typical (nm)	1300		
	TX Range (nm)	1260 to 1360	1280 to 1340	
	RX Range (nm)	1100 to 1600	1100 to 1600	
Optical Power	TX Range (dBm)	-10 to -20	0 to -5	
	RX Range (dBm)	-3 to -32	-3 to -34	
	Link Budget (dB)	12	29	
	Dispersion Penalty (dB)	3	1	

Note: When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by excessive optical power.

Note: Compute the “typical distance” of a specific fiber transceiver as follows: Link budget (dB) > dispersion penalty (dB) + total link loss (dB).

**Power Requirements**

**Input Voltage:** 12/24/48/-48 VDC, redundant dual inputs

**Operating Voltage:** 9.6 to 60 VDC

**Input Current:**

EDS-518E-4GTXSFP: 0.37 A @ 24 V

EDS-518E-MM-ST/SC-4GTXSFP: 0.41 A @ 24 V

EDS-518E-SS-SC-4GTXSFP: 0.41 A @ 24 V

**Overload Current Protection:** Present

**Connection:** 2 removable 4-contact terminal blocks

**Reverse Polarity Protection:** Present

**Physical Characteristics**

**Housing:** Metal

**IP Rating:** IP30 protection

**Dimensions:** 94 x 135 x 137 mm (3.7 x 5.31 x 5.39 in)

**Weight:** 1,518 g (3.35 lb)

**Installation:** DIN-rail mounting, wall mounting (with optional kit)

**Environmental Limits**

**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:** -40 to 85°C (-40 to 185°F)

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

**Standards and Certifications**

Note: Please check Moxa’s website for the most up-to-date certification status.

**Safety:** UL 508

**Hazardous Location:** UL/cUL Class 1 Division 2 Groups A/B/C/D, ATEX Zone 2 Ex nA nC IIC

**EMC:** EN 61000-6-2/6-4

**EMI:** CISPR 22, FCC Part 15B Class A

**EMS:**

IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV

IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m

IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV

IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV

IEC 61000-4-6 CS: Signal: 10 V

IEC 61000-4-8

**Electrical Substations:** IEC 61850-3, IEEE 1613

**Traffic Control:** NEMA TS2

**Rail Traffic:** EN 50121-4

**Marine:** DNV, ABS, LR, GL, NKK

**Shock:** IEC 60068-2-27

**Freefall:** IEC 60068-2-32

**Vibration:** IEC 60068-2-6

**MTBF** (mean time between failures)

**Time:** 723,953 hrs

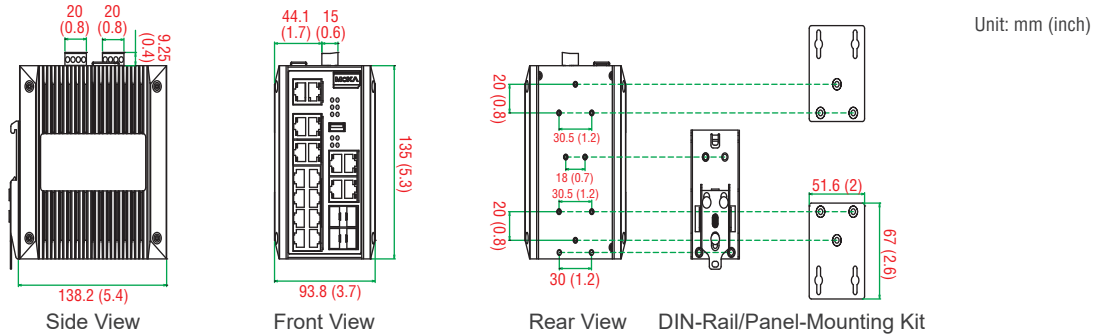
**Standard:** Telcordia (Bellcore), GB

**Warranty**

**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

**Dimensions**



**Ordering Information**

Available Models		Total No. of Ports	Port Interface				
Standard Temperature (-10 to 60°C)	Wide Temperature (-40 to 75°C)		Gigabit Combo Port 10/100/1000BaseT(X) or 100/1000BaseSFP*	10/ 100BaseT(X)	Fast Ethernet		
					100BaseFX		
				Multi-Mode, SC Connector	Multi-Mode, ST Connector	Single-Mode, SC Connector	
EDS-518E-4GTXSFP	EDS-518E-4GTXSFP-T	18	4	14	–	–	–
EDS-518E-MM-SC-4GTXSFP	EDS-518E-MM-SC-4GTXSFP-T	18	4	12	2	–	–
EDS-518E-MM-ST-4GTXSFP	EDS-518E-MM-ST-4GTXSFP-T	18	4	12	–	2	–
EDS-518E-SS-SC-4GTXSFP	EDS-518E-SS-SC-4GTXSFP-T	18	4	12	–	–	2

\*The EDS-518E series supports 4 1000BaseSFP slots. See the SFP section for Gigabit Ethernet SFP module product information.

**Optional Accessories** (can be purchased separately)

**MXview:** Moxa industrial network management software with 50, 100, 250, 500, 1000, or 2000 nodes

**EDS-SNMP OPC Server Pro:** OPC server software that works with all SNMP devices

**ABC-02-USB-T:** Configuration backup and restoration tool for managed Ethernet switches, -40 to 75°C operating temperature

**DR-4524/75-24/120-24:** 45/75/120 W DIN-rail 24 VDC power supplies

**MDR-40-24/60-24:** 40/60 W DIN-rail 24 VDC power supplies, -20 to 70°C operating temperature

**WK-51-01:** Wall-mounting kit, 2 plates with 6 screws

**RK-4U:** 4U-high 19-inch rack-mounting kit

**Package Checklist**

- EDS-518E switch
- USB Cable: CBL-USBA/B-100
- Protective caps for unused ports
- Documentation and software CD
- Hardware installation guide (printed)
- Warranty card