

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

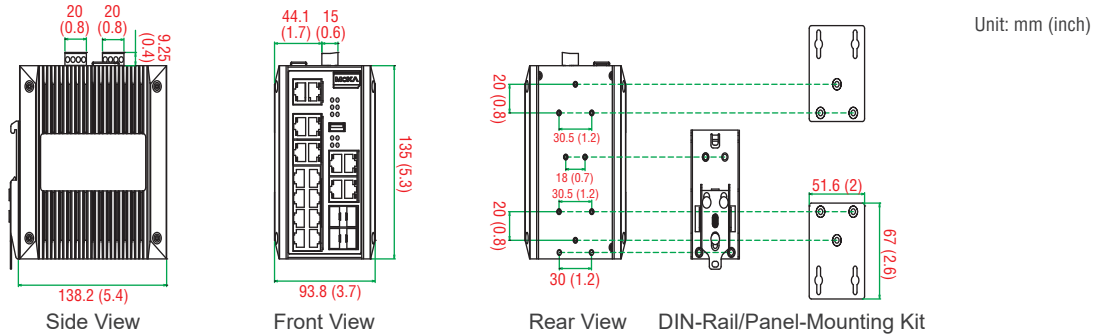
Standard: Telcordia (Bellcore), GB

Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

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