

# EDS-518E Series

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



### Features and Benefits

- 4 Gigabit plus 14 fast Ethernet ports for copper and fiber
- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches),<sup>1</sup> 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
- Fiber Check™—comprehensive fiber status monitoring and warning on MST/ MSC/SSC/SFP fiber ports
- Supports MXstudio for easy, visualized industrial network management
- V-ON™ ensures millisecond-level multicast data and video network recovery

### Certifications



## Introduction

The EDS-518E standalone, compact 18-port managed Ethernet switches have 4 combo Gigabit ports with built-in RJ45 or SFP slots for Gigabit fiber-optic communication. The 14 fast Ethernet ports have a variety of copper and fiber port combinations that give 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 specifically for harsh industrial environments with limited installation space and high protection level requirements, such as maritime, rail wayside, oil and gas, factory automation, and process automation.

### Additional Features and Benefits

- 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
- QoS (IEEE 802.1p/1Q and TOS/DiffServ) to increase determinism
- Port Trunking for optimum bandwidth utilization
- Port mirroring for online debugging
- Automatic warning by exception through email and relay output
- SNMPv1/v2c/v3 for different levels of network management
- RMON for proactive and efficient network monitoring
- Fiber Check™ provides a comprehensive fiber Digital Diagnostic Monitoring (DDM) function and event warning on MST/MSC/SSC/SFP fiber ports
- Bandwidth management to prevent unpredictable network status
- Lock port function for blocking unauthorized access based on MAC address
- Supports the ABC-02-USB (Automatic Backup Configurator) for system configuration backup/restore and firmware upgrade

## Specifications

### Input/Output Interface

Alarm Contact Channels	1 Relay output with current carrying capacity of 1 A @ 24 VDC
Buttons	Reset button

1. Gigabit Ethernet recovery time < 50 ms

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

10/100BaseT(X) Ports (RJ45 connector)	EDS-518E-4GTXSFP: 14 EDS-518E-MM-SC-4GTXSFP/MM-ST-4GTXSFP/SS-SC-4GTXSFP: 12  All models support: Auto negotiation speed Full/Half duplex mode Auto MDI/MDI-X connection																																																	
Combo Ports (10/100/1000BaseT(X) or 100/1000BaseSFP+)	4																																																	
10/100/1000BaseT(X) Ports (RJ45 connector)	Auto negotiation speed Full/Half duplex mode Auto MDI/MDI-X connection																																																	
100BaseFX Ports (multi-mode SC connector)	EDS-518E-MM-SC-4GTXSFP Series: 2																																																	
100BaseFX Ports (multi-mode ST connector)	EDS-518E-MM-ST-4GTXSFP Series: 2																																																	
100BaseFX Ports (single-mode SC connector)	EDS-518E-SS-SC-4GTXSFP Series: 2																																																	
Optical Fiber	<table border="1"> <thead> <tr> <th colspan="2" rowspan="2"></th> <th colspan="3">100BaseFX</th> </tr> <tr> <th colspan="2">Multi-Mode</th> <th>Single-Mode</th> </tr> <tr> <th rowspan="2">Fiber Cable Type</th> <th rowspan="2">OM1</th> <th>50/125 μm</th> <th colspan="2" rowspan="2">G.652</th> </tr> <tr> <th>800 MHz x km</th> </tr> </thead> <tbody> <tr> <td colspan="2">Typical Distance</td> <td>4 km</td> <td>5 km</td> <td>40 km</td> </tr> <tr> <td rowspan="3">Wavelength</td> <td>Typical (nm)</td> <td colspan="2">1300</td> <td>1310</td> </tr> <tr> <td>TX Range (nm)</td> <td colspan="2">1260 to 1360</td> <td>1280 to 1340</td> </tr> <tr> <td>RX Range (nm)</td> <td colspan="2">1100 to 1600</td> <td>1100 to 1600</td> </tr> <tr> <td rowspan="4">Optical Power</td> <td>TX Range (dBm)</td> <td colspan="2">-10 to -20</td> <td>0 to -5</td> </tr> <tr> <td>RX Range (dBm)</td> <td colspan="2">-3 to -32</td> <td>-3 to -34</td> </tr> <tr> <td>Link Budget (dB)</td> <td colspan="2">12</td> <td>29</td> </tr> <tr> <td>Dispersion Penalty (dB)</td> <td colspan="2">3</td> <td>1</td> </tr> </tbody> </table> <p>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) &gt; dispersion penalty (dB) + total link loss (dB).</p>			100BaseFX			Multi-Mode		Single-Mode	Fiber Cable Type	OM1	50/125 μm	G.652		800 MHz x km	Typical Distance		4 km	5 km	40 km	Wavelength	Typical (nm)	1300		1310	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
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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

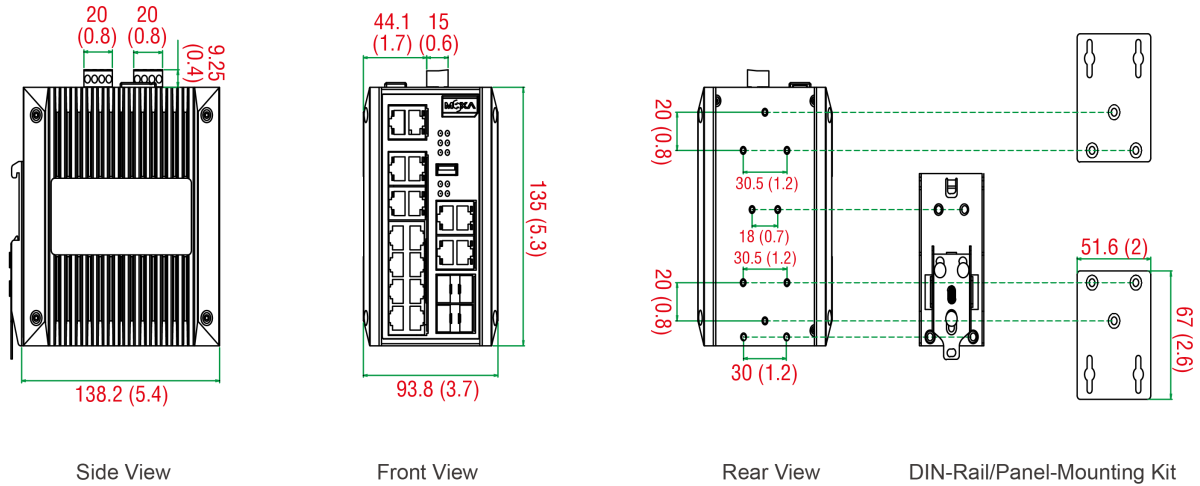
Filter	802.1Q VLAN BPDU Filter BPDU Guard GMRP GVRP IGMP v1/v2/v3 Port-based VLAN
Industrial Protocols	EtherNet/IP Modbus TCP PROFINET IO Device
Management	LLDP Back Pressure Flow Control BOOTP Port Mirror DHCP Option 66/67/82 DHCP Server/Client Fiber check Flow control IPv4/IPv6 RARP RMON SCP SMTP SNMP 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 MRP 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
<b>Switch Properties</b>	
IGMP Groups	2048
MAC Table Size	16 K
Max. No. of VLANs	64

Packet Buffer Size	1 Mbits
Priority Queues	4
VLAN ID Range	VID 1 to 4094
<b>USB Interface</b>	
Storage Port	USB Type A
<b>LED Interface</b>	
LED Indicators	PWR1, PWR2, STATE, FAULT, 10/100M (TP port), 100M (fiber port), Gigabit combo port, MSTR/HEAD, CPLR/TAIL
<b>Serial Interface</b>	
Console Port	USB-serial console (Type B connector)
<b>DIP Switch Configuration</b>	
DIP Switches	Turbo Ring, Master, Coupler, Reserve
<b>Power Parameters</b>	
Connection	2 removable 4-contact terminal block(s)
Input Current	EDS-518E-4GTXSFP Series: 0.37 A @ 24 VDC EDS-518E-MM-SC-4GTXSFP/MM-ST-4GTXSFP/SS-SC-4GTXSFP: 0.41 A @ 24 VDC
Input Voltage	12/24/48/-48 VDC Redundant dual inputs
Operating Voltage	9.6 to 60 VDC
Overload Current Protection	Supported
Reverse Polarity Protection	Supported
<b>Physical Characteristics</b>	
Housing	Metal
IP Rating	IP30
Dimensions	94 x 135 x 137 mm (3.7 x 5.31 x 5.39 in)
Weight	1518 g (3.35 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)
<b>Environmental Limits</b>	
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)
<b>Standards and Certifications</b>	
Safety	UL 508 EN 60950-1 (LVD)
EMC	EN 61000-6-2/-6-4
EMI	CISPR 32, 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: 10 V IEC 61000-4-8 PFMF
Hazardous Locations	ATEX Class I Division 2
Maritime	DNV-GL LR ABS NK
Power Substation	IEC 61850-3 IEEE 1613
Railway	EN 50121-4
Traffic Control	NEMA TS2
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
<b>MTBF</b>	
Time	723,953 hrs
Standards	Telcordia (Bellcore), GB
<b>Warranty</b>	
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>
<b>Package Contents</b>	
Device	1 x EDS-518E Series switch
Cable	1 x USB type A male to USB type B male
Installation Kit	4 x cap, plastic, for RJ45 port 4 x cap, plastic, for SFP slot
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	10/100BaseT(X) Ports RJ45 Connector	Combo Ports 10/100/1000BaseT(X) or 100/1000BaseSFP+	100BaseFX Ports Multi-Mode, SC Connector	100BaseFX Ports Multi-Mode, ST Connector	100BaseFX Ports Single-Mode, SC Connector	Operating Temp.
EDS-518E-4GTXSFP	14	4	-	-	-	-10 to 60°C
EDS-518E-4GTXSFP-T	14	4	-	-	-	-40 to 75°C
EDS-518E-MM-SC-4GTXSFP	12	4	2	-	-	-10 to 60°C
EDS-518E-MM-SC-4GTXSFP-T	12	4	2	-	-	-40 to 75°C
EDS-518E-MM-ST-4GTXSFP	12	4	-	2	-	-10 to 60°C
EDS-518E-MM-ST-4GTXSFP-T	12	4	-	2	-	-40 to 75°C
EDS-518E-SS-SC-4GTXSFP	12	4	-	-	2	-10 to 60°C
EDS-518E-SS-SC-4GTXSFP-T	12	4	-	-	2	-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, LC connector for 2/4 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-1GLHXL	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature
SFP-1GLHXL-T	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1GLSXL	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, 0 to 60°C operating temperature
SFP-1GLSXL-T	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, -40 to 85°C operating temperature
SFP-1GLXL	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature
SFP-1GLXL-T	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature
SFP-1GSXL	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, 0 to 60°C operating temperature
SFP-1GSXL-T	SFP module with 1 1000BaseSX port with LC connector for 300m/550m 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

#### Wall-Mounting Kits

WK-51-01	Wall mounting kit with 2 plates (51.6 x 67 x 2 mm) and 6 screws
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## 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)

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