EDS-528E Series

24+4G-port Gigabit managed Ethernet switches

Features and Benefits

- 4 Gigabit plus 24 fast Ethernet ports for copper and fiber
- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches),[1] 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

IEC 61850-3 IEEE 1613

Introduction

The EDS-528E standalone, compact 28-port managed Ethernet switches have 4 combo Gigabit ports with built-in RJ45 or SFP slots for Gigabit fiber-optic communication. The 24 fast Ethernet ports have a variety of copper and fiber port combinations that give the EDS-528E 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-528E also supports advanced management and security features.

In addition, the EDS-528E 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
- 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
- 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
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

1. Gigabit Ethernet recovery time < 50 ms

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	24 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
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, GVRP, IGMP v1/v2/v3, GMRP, Port-based VLAN
Industrial Protocols	EtherNet/IP, Modbus TCP, PROFINET IO Device (Slave)
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

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

USB Interface

Storage Port	USB Type A

LED Interface

LED Indicators	PWR1, PWR2 (LV model), STATE, FAULT, 10/100M (TP port), Gigabit combo port, MSTR/HEAD, CPLR/TAIL

Serial Interface

Console Port	USB-serial console (Type B connector)

DIP Switch Configuration

DIP Switches	Turbo Ring, Master, Coupler, Reserve

Power Parameters

Connection	EDS-528E-4GTXSFP-HV Series: 1 removable 4-contact and 1 removable 5-contact terminal block EDS-528E-4GTXSFP-LV Series: 2 removable 4-contact terminal block(s)
Input Current	EDS-528E-4GTXSFP-LV Series: 0.47 A @ 24 VDC EDS-528E-4GTXSFP-HV Series: 0.11/0.055 A @ 110/220 VDC, 0.21/0.13 A @ 110/220 VAC
Input Voltage	EDS-528E-4GTXSFP-LV Series: 12/24/48/-48 VDC, Redundant dual inputs EDS-528E-4GTXSFP-HV Series: 110/220 VDC/VAC, Single input
Operating Voltage	EDS-528E-4GTXSFP-LV Series: 9.6 to 60 VDC EDS-528E-4GTXSFP-HV Series: 88 to 300 VDC, 85 to 264 VAC
Overload Current Protection	Supported
Reverse Polarity Protection	Supported

Physical Characteristics

Housing	Metal
IP Rating	IP30
Dimensions	115.4 x 135 x 137 mm (4.54 x 5.31 x 5.39 in)
Weight	1850 g (4.08 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 (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

Safety	UL 61010-2-201, 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: 20 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
Power Substation	IEC 61850-3, IEEE 1613
Railway	EN 50121-4
Shock	IEC 60068-2-27

Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

MTBF

Time	774,634 hrs
Standards	Telcordia (Bellcore), GB

Warranty

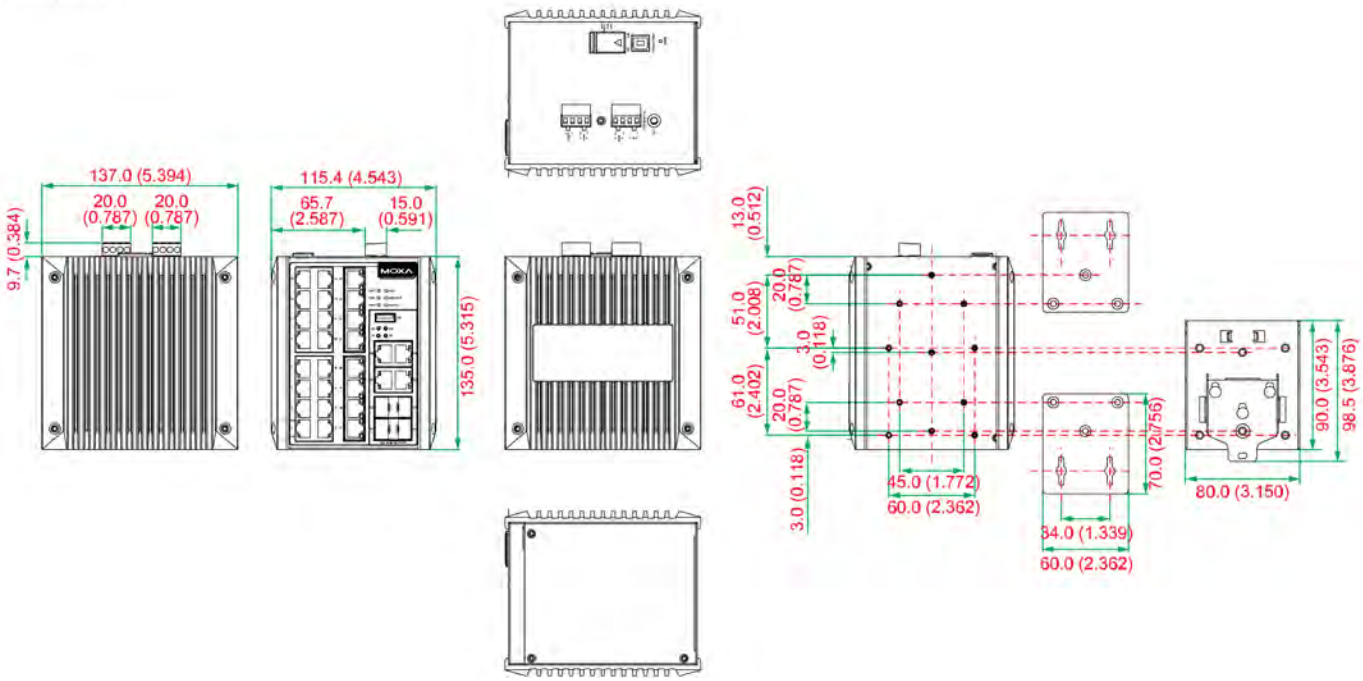
Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x EDS-528E 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+	12/24/48/-48 VDC	110/220 VDC/VAC	Operating Temp.
EDS-528E-4GTXSFP-LV	24	4	2	–	-10 to 60°C
EDS-528E-4GTXSFP-LV-T	24	4	2	–	-40 to 75°C
EDS-528E-4GTXSFP-HV	24	4	–	1	-10 to 60°C
EDS-528E-4GTXSFP-HV-T	24	4	–	1	-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 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 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-1GLHXLC	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature
SFP-1GLHXLC-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

Wall-Mounting Kits

WK-60-01	Wall-mounting kit, 2 plates, 6 screws, 60 x 70 x 2 mm

Rack-Mounting Kits

RK-4U	19-inch rack-mounting kit

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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