EDS-528E Series

24+4G-port Gigabit managed Ethernet switches

> 4 Gigabit plus 24 Fast Ethernet ports for copper and fiber
> Turbo Ring and Turbo Chain (recover 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/MSC/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-528E series is a standalone, compact-size 28-port managed Ethernet switch that provides 4 combo Gigabit ports with built-in RJ45 or SFP slots for Gigabit fiber optic communication. The28 fast Ethernet ports with a variety of copper and fiber port combinations gives the EDS-528E series greater flexibility for designing your network and application. The Ethernet redundant 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 especially 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.

Features and Benefits

- Software-based IEEE 1588v2 PTP (Precision Time Protocol) for precise 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 and proactive capability
- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches), RSTP/STP, and MSTP for network redundancy
- Bandwidth management prevents unpredictable network status
- Lock port function for blocking unauthorized access based on MAC address
- Automatic warning by exception through e-mail, relay output
- 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: 100/1000BaseSFP slot
Console Port: USB-serial console (Type B connector)
Storage Port: USB storage port (Type A connector)
LED Indicators: PWR1, PWR2 (LV model), STATE, FAULT, 10/100M (TP 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 +30V for state "1"
• -30 to +3V for state "0"
• Max. input current: 8 mA
Button: Reset button

Power Requirements

Input Voltage:
LV Model: 12/24/48/-48 VDC, redundant dual inputs
HV Model: 110/220 VDC/VAC
Operating Voltage:
LV Model: 9.6 to 60 VDC
HV Model: 85 to 264 VAC or 88 to 300 VDC
Input Current:
LV Model: 0.47 A @ 24 VDC
HV Model: 0.21/0.13 A @110/220 VAC
0.11/0.055 A @ 110/220 VDC
Overload Current Protection: Present
Connection:
LV Model: 2 removable 4-contact terminal blocks
HV Model: 1 removable 5-contact and 1 removable 4-contact terminal blocks
Reverse Polarity Protection: Present

Physical Characteristics

Housing: Metal
IP Rating: IP30 protection
Dimensions: 115.4 x 135 x 137 mm (4.54 x 5.31 x 5.39 in)
Weight: 1,850 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: -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 61010-2-201
EMC: EN 61000-6-2/6-4
EMI: 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: Signal: 10 V
IEC 61000-4-8
Electrical Substations: IEC 61850-3, IEEE 1613
Rail Traffic: EN 50121-4
Shock: IEC 60068-2-27
Freefall: IEC 60068-2-32
Vibration: IEC 60068-2-6

MTBF (mean time between failures)

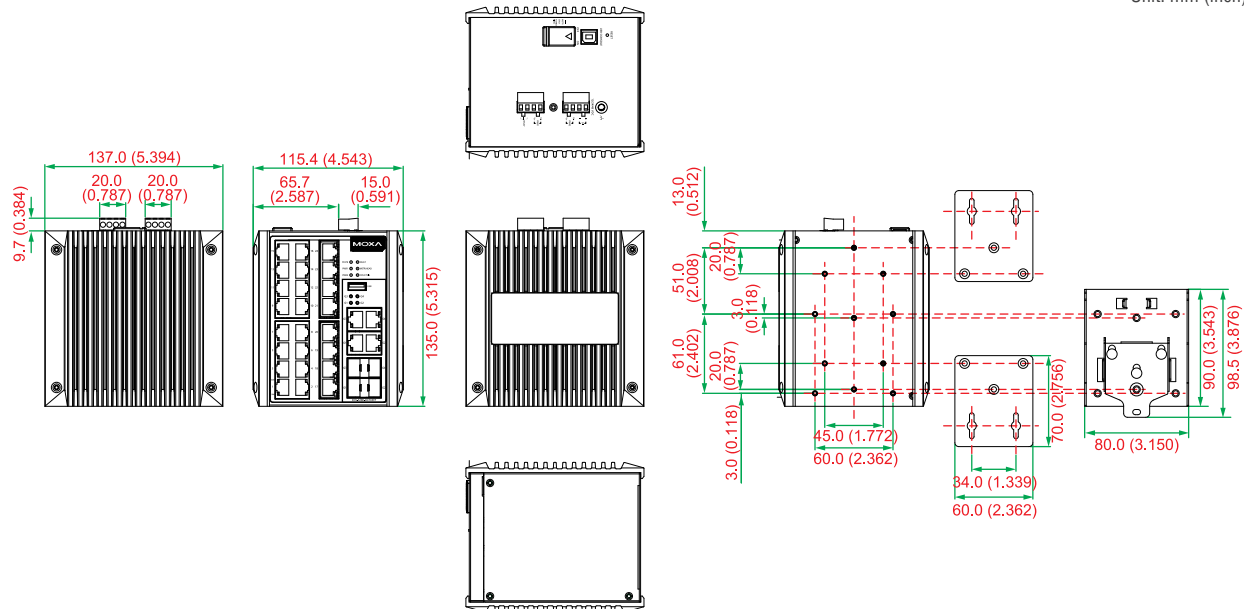**Time:** 774,634 hrs
Standard: Telcordia (Bellcore), GB

Warranty

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

Dimensions

Unit: mm (inch)

⋮ Ordering Information

Available Models		Total No. of Ports	Port Interface		Power Supply	
			Gigabit Combo Port	Fast Ethernet		
Standard Temperature (-10 to 60°C)	Wide Temperature (-40 to 75°C)		10/100/1000BaseT(X) or 100/1000BaseSFP*	10/100BaseT(X)	LV: 12/24/48 VDC (9.6 to 60 VDC), dual power inputs	HV: 110/220 VDC/VAC (88 to 300 VDC, 85 to 264 VAC)
EDS-528E-4GTXSFP-LV	EDS-528E-4GTXSFP-LV-T	28	4	24	1	–
EDS-528E-4GTXSFP-HV	EDS-528E-4GTXSFP-HV-T	28	4	24	–	1

*The EDS-528E series supports 4 1000BaseSFP slots. See the SFP section for Fast Ethernet or 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-60-01: Wall-mounting kit
RK-4U: 4U-high 19-inch rack-mounting kit

Package Checklist

- EDS-528E switch
- USB cable: CBL-USBA/B-100
- Protective caps for unused ports
- Documentation and software CD
- Hardware installation guide (printed)
- Warranty card