# EDS-408A Series

*8-port entry-level managed Ethernet switches*

## Features and Benefits

- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches), and RSTP/STP for network redundancy

- IGMP Snooping, QoS, IEEE 802.1Q VLAN, and port-based VLAN supported

- Easy network management by web browser, CLI, Telnet/serial console, Windows utility, and ABC-01

- PROFINET or EtherNet/IP enabled by default (PN or EIP models)

- Supports MXstudio for easy, visualized industrial network management

## Certifications

## Introduction

The EDS-408A Series is designed especially for industrial applications. The switches support a variety of useful management functions, such as Turbo Ring, Turbo Chain, ring coupling, IGMP snooping, IEEE 802.1Q VLAN, port-based VLAN, QoS, RMON, bandwidth management, port mirroring, and warning by email or relay. The ready-to-use Turbo Ring can be set up easily using the web-based management interface, or with the DIP switches located on the top panel of the EDS-408A switches.

### Additional Features and Benefits

- DHCP Option 82 for IP address assignment with different policies
- Supports EtherNet/IP, Modbus TCP and PROFINET[1] protocols for device management and monitoring
- EtherNet/IP EDS (Electronic Data Sheet) file, custom AOI (Add-On Instructions) and FactoryTalk® View faceplate available
- PROFINET GSDML file and SIMATIC STEP 7 device icons available[1]
- Port mirroring for online debugging

- Port-based VLAN, IEEE 802.1Q VLAN, and GVRP to ease network planning
- QoS (IEEE 802.1p and TOS/DiffServ) to increase determinism
- RMON for proactive and efficient network monitoring
- SNMPv1/v2c/v3 for different levels of network management security
- Bandwidth management to prevent unpredictable network status

## Specifications

### Ethernet Interface

| | |
|---|---|
| 10/100BaseT(X) Ports (RJ45 connector) | EDS-408A/408A-T, EDS-408A-EIP/PN Series: 8<br>EDS-408A-MM-SC/MM-ST/SS-SC Series: 6<br>EDS-408A-3M-SC/3M-ST/3S-SC/3S-SC-48/1M2S-SC/2M1S-SC Series: 5<br><br>All models support:<br>Auto negotiation speed<br>Full/Half duplex mode<br>Auto MDI/MDI-X connection |
| 100BaseFX Ports (multi-mode SC connector) | EDS-408A-MM-SC/2M1S-SC Series: 2<br>EDS-408A-3M-SC Series: 3<br>EDS-408A-1M2S-SC Series: 1 |
| 100BaseFX Ports (multi-mode ST connector) | EDS-408A-MM-ST Series: 2<br>EDS-408A-3M-ST Series: 3 |
| 100BaseFX Ports (single-mode SC connector) | EDS-408A-SS-SC/1M2S-SC Series: 2<br>EDS-408A-2M1S-SC Series: 1<br>EDS-408A-3S-SC/3S-SC-48 Series: 3 |

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1.   EDS-408A-PN Series only

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| Standards | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT(X) and 100BaseFX<br>IEEE 802.3x for flow control<br>IEEE 802.1D-2004 for Spanning Tree Protocol<br>IEEE 802.1p for Class of Service<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1w for Rapid Spanning Tree Protocol |
|---|---|

## Optical Fiber

| | | 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 |
| Waveleng-th | 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 |

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).

## Ethernet Software Features

| Filter | 802.1Q VLAN, GMRP, GVRP, IGMP v1/v2, Port-based VLAN |
|---|---|
| Industrial Protocols | EtherNet/IP, Modbus TCP, EDS-408A-PN Series: PROFINET IO Device (Slave) |
| Management | Back Pressure Flow Control, BOOTP, DHCP Option 66/67/82, DHCP Server/Client, Flow control, IPv4/IPv6, LLDP, Port Mirror, RARP, RMON, SMTP, SNMP Inform, SNMPv1/v2c/v3, Syslog, Telnet, TFTP |
| MIB | Bridge MIB, Ethernet-like MIB, MIB-II, P-BRIDGE MIB, RMON MIB Groups 1, 2, 3, 9, RSTP MIB |
| Redundancy Protocols | RSTP, STP, Turbo Chain, Turbo Ring v1/v2 |
| Time Management | NTP Server/Client, SNTP |

## Switch Properties

| IGMP Groups | 256 |
|---|---|
| MAC Table Size | 8 K |
| Max. No. of VLANs | 64 |
| Packet Buffer Size | 1 Mbits |
| Priority Queues | 4 |
| VLAN ID Range | VID 1 to 4094 |

## Serial Interface

| Console Port | RS-232 (TxD, RxD, GND), 10-pin RJ45 (19200, n, 8, 1) |
|---|---|

## DIP Switch Configuration

| | |
|---|---|
| Ethernet Interface | Turbo Ring, Master, Coupler, Reserve |

## Input/Output Interface

| | |
|---|---|
| Alarm Contact Channels | Relay output with current carrying capacity of 1 A @ 24 VDC |

## Power Parameters

| | |
|---|---|
| Connection | 1 removable 6-contact terminal block(s) |
| Input Voltage | All models: Redundant dual inputs<br>EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC/3M-SC/3M-ST/3S-SC/1M2S-SC/<br>2M1S-SC/EIP/PN Series: 12/24/48 VDC<br>EDS-408A-3S-SC-48/408A-3S-SC-48-T: ±24/±48 VDC |
| Operating Voltage | EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC/3M-SC/3M-ST/3S-SC/1M2S-SC/<br>2M1S-SC/EIP/PN Series: 9.6 to 60 VDC<br><br>EDS-408A-3S-SC-48 Series:<br>±19 to ±60 VDC[2] |
| Input Current | EDS-408A/408A-T, EDS-408A-EIP/PN Series: 0.18 A @ 24 VDC<br>EDS-408A-MM-SC/MM-ST/SS-SC Series: 0.30 A @ 24 VDC<br>EDS-408A-3M-SC/3M-ST/3S-SC/3S-SC-48/1M2S-SC/2M1S-SC Series: 0.35 A @ 24 VDC |
| Overload Current Protection | Supported |
| Reverse Polarity Protection | Supported |

## Physical Characteristics

| | |
|---|---|
| Housing | Metal |
| IP Rating | IP30 |
| Dimensions | 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in) |
| Weight | EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC, EDS-408A-EIP/PN Series: 650 g<br>(1.44 lb)<br>EDS-408A-3M-SC/3M-ST/3S-SC/3S-SC-48/1M2S-SC/2M1S-SC Series: 890 g (1.97 lb) |
| Installation | DIN-rail mounting, Wall mounting (with optional kit) |

## Environmental Limits

| | |
|---|---|
| Operating Temperature | Standard Models: -10 to 60°C (32 to 140°F)<br>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 | All models: EN 60950-1, UL 508<br>EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC Series, EDS-EIP/PN Series: UL<br>60950-1 |
| EMC | EN 55032/24 |
| EMI | CISPR 32, FCC Part 15B Class A |
| EMS | IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-6 CS: 10 V |

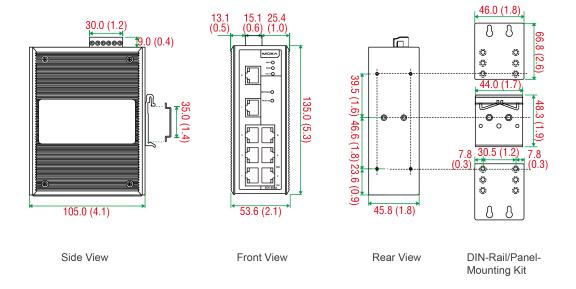2.    -60 to -19 VDC or 19 to 60 VDC. Do not mix power polarity systems.

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|---|---|
| | IEC 61000-4-8 PFMF |
| Hazardous Locations | EDS-408A/408A-T, EDS-408A-MM-SC/MM-ST/SS-SC Series, EDS-408A-EIP/PN Series: ATEX, Class I Division 2 |
| Maritime | EDS-408A/408A-T, EDS-408A-MM/SS Series: NK<br>EDS-408A/408A-T, EDS-408A-MM/SS Series, EDS-408A-EIP/PN Series: DNV-GL |
| Railway | EN 50121-4 |
| Traffic Control | NEMA TS2 |
| Freefall | IEC 60068-2-31 |
| Shock | IEC 60068-2-27 |
| Vibration | IEC 60068-2-6 |

**MTBF**

| | |
|---|---|
| Time | EDS-408A/408A-T, EDS-408A-EIP/PN Series: 1,339,439 hrs<br>EDS-408A-MM-SC/MM-ST/SS-SC/3M-SC/3M-ST/3S-SC/1M2S-SC/2M1S-SC Series: 1,253,072 hrs<br>EDS-408A-3S-SC-48 Series: 989,940 hrs |
| Standards | Telcordia (Bellcore), GB |

**Warranty**

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

**Package Contents**

| | |
|---|---|
| Device | 1 x EDS-408A Series switch |
| Cable | 1 x RJ45-to-DB9 console cable |
| Installation Kit | 4 x cap, plastic, for RJ45 port |
| Documentation | 1 x product certificates of quality inspection, Simplified Chinese<br>1 x product notice, Simplified Chinese<br>1 x quick installation guide<br>1 x warranty card |

# Dimensions

Unit: mm (inch)



Side View

Front View

Rear View

DIN-Rail/Panel-Mounting Kit

# Ordering Information

| Model Name | Layer | Total No. of Ports | 10/100BaseT(X) Ports RJ45 Connector | 100BaseFX Ports Multi-Mode, SC Connector | 100BaseFX Ports Multi-Mode, ST Connector | 100BaseFX Ports Single-Mode, SC Connector | Operating Temp. |
|---|---|---|---|---|---|---|---|
| EDS-408A | 2 | 8 | 8 | – | – | – | -10 to 60°C |
| EDS-408A-T | 2 | 8 | 8 | – | – | – | -40 to 75°C |
| EDS-408A-MM-ST | 2 | 8 | 6 | – | 2 | – | -10 to 60°C |
| EDS-408A-MM-ST-T | 2 | 8 | 6 | – | 2 | – | -40 to 75°C |
| EDS-408A-MM-SC | 2 | 8 | 6 | 2 | – | – | -10 to 60°C |
| EDS-408A-MM-SC-T | 2 | 8 | 6 | 2 | – | – | -40 to 75°C |
| EDS-408A-SS-SC | 2 | 8 | 6 | – | – | 2 | -10 to 60°C |
| EDS-408A-SS-SC-T | 2 | 8 | 6 | – | – | 2 | -40 to 75°C |
| EDS-408A-3M-ST | 2 | 8 | 5 | – | 3 | – | -10 to 60°C |
| EDS-408A-3M-ST-T | 2 | 8 | 5 | – | 3 | – | -40 to 75°C |
| EDS-408A-3M-SC | 2 | 8 | 5 | 3 | – | – | -10 to 60°C |
| EDS-408A-3M-SC-T | 2 | 8 | 5 | 3 | – | – | -40 to 75°C |
| EDS-408A-3S-SC | 2 | 8 | 5 | – | – | 3 | -10 to 60°C |
| EDS-408A-3S-SC-T | 2 | 8 | 5 | – | – | 3 | -40 to 75°C |
| EDS-408A-3S-SC-48 | 2 | 8 | 5 | – | – | 3 | -10 to 60°C |
| EDS-408A-3S-SC-48-T | 2 | 8 | 5 | – | – | 3 | -40 to 75°C |
| EDS-408A-1M2S-SC | 2 | 8 | 5 | 1 | – | 2 | -10 to 60°C |
| EDS-408A-1M2S-SC-T | 2 | 8 | 5 | 1 | – | 2 | -40 to 75°C |
| EDS-408A-2M1S-SC | 2 | 8 | 5 | 2 | – | 1 | -10 to 60°C |
| EDS-408A-2M1S-SC-T | 2 | 8 | 5 | 2 | – | 1 | -40 to 75°C |

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| Model Name | Layer | Total No. of Ports | 10/100BaseT(X) Ports RJ45 Connector | 100BaseFX Ports Multi-Mode, SC Connector | 100BaseFX Ports Multi-Mode, ST Connector | 100BaseFX Ports Single-Mode, SC Connector | Operating Temp. |
|---|---|---|---|---|---|---|---|
| EDS-408A-EIP | 2 | 8 | 8 | – | – | – | -10 to 60°C |
| EDS-408A-EIP-T | 2 | 8 | 8 | – | – | – | -40 to 75°C |
| EDS-408A-PN | 2 | 8 | 8 | – | – | – | -10 to 60°C |
| EDS-408A-PN-T | 2 | 8 | 8 | – | – | – | -40 to 75°C |

## Accessories (sold separately)

### Storage Kits

| ABC-01 | Configuration backup and restoration tool for managed Ethernet switches and AWK Series wireless APs/bridges/clients, 0 to 60°C operating temperature |
|---|---|

### Power Supplies

| DR-120-24 | 120W/2.5A DIN-rail 24 VDC power supply with universal 88 to 132 VAC or 176 to 264 VAC input by switch, or 248 to 370 VDC input, -10 to 60°C operating temperature |
|---|---|
| DR-4524 | 45W/2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC or 120 to 370 VDC input, -10 to 50°C operating temperature |
| DR-75-24 | 75W/3.2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC or 120 to 370 VDC input, -10 to 60°C operating temperature |
| MDR-40-24 | DIN-rail 24 VDC power supply with 40W/1.7A, 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature |
| MDR-60-24 | DIN-rail 24 VDC power supply with 60W/2.5A, 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature |

### Wall-Mounting Kits

| WK-46-01 | Wall-mounting kit, 2 plates, 8 screws, 46 x 66.8 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) |