

# EDS-405A/408A Series

## 5 and 8-port entry-level managed Ethernet switches



- ▶ 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



### Introduction

The EDS-405A/408A are entry-level 5 and 8-port managed Ethernet switches 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-405A/408A switches.

### Features and Benefits

- DHCP Option 82 for IP address assignment with different policies
- Support EtherNet/IP, Modbus/TCP and PROFINET\* 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\*
- 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 and TOS/DiffServ) to increase determinism
- RMON for efficient network monitoring and proactive capability
- SNMPv1/v2c/v3 for different levels of network management security
- Bandwidth management to prevent unpredictable network status
- Port mirroring for online debugging

\* EDS-405A/408A-PN series only

### Specifications

#### Technology

##### Standards:

- IEEE 802.3 for 10BaseT
- IEEE 802.3u for 100BaseT(X) and 100BaseFX
- IEEE 802.3x for Flow Control
- IEEE 802.1D-2004 for Spanning Tree Protocol
- IEEE 802.1w for Rapid STP
- IEEE 802.1p for Class of Service
- IEEE 802.1Q for VLAN Tagging

##### Software Features

**Management:** IPv4/IPv6, SNMP v1/v2c/v3, LLDP, Port Mirror, 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, GMRP

**Redundancy Protocols:** STP, RSTP, Turbo Ring v1/v2, Turbo Chain

**Time Management:** SNTP, NTP Server/Client

**Industrial Protocols:** EtherNet/IP, Modbus/TCP

**MIB:** MIB-II, Ethernet-Like MIB, P-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9

##### Switch Properties

**MAC Table Size:** 2 K (EDS-405A), 8 K (EDS-408A)

**Packet Buffer Size:** 1 Mbit

##### Interface

**RJ45 Ports:** 10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection

**Fiber Ports:** 100BaseFX ports (SC/ST connector)

**Console Port:** RS-232 (RJ45 connector)

**DIP Switches:** Turbo Ring, Master, Coupler, Reserve

**Alarm Contact:** 1 relay output with current carrying capacity of 1 A @ 24 VDC

#### Optical Fiber

|                         |                  | 100BaseFX    |                         |              |
|-------------------------|------------------|--------------|-------------------------|--------------|
|                         |                  | Multi-Mode   |                         | Single-Mode  |
| Fiber Cable Type        |                  | OM1          | 50/125 μm<br>800 MHz*km | G.652        |
| Typical Distance        |                  | 4 km         | 5 km                    | 40 km        |
| Wave-length             | 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).

#### Power Requirements

**Input Voltage:** 24 VDC, redundant dual inputs

**Operating Voltage:** 12 to 45 VDC

**Input Current:** EDS-405A, EDS-405A-EIP, EDS-405A-PN: 0.21 A @ 24 V

EDS-405A-MM/SS: 0.28 A @ 24 V

EDS-408A, EDS-408A-EIP, EDS-408A-PN: 0.22 A @ 24 V

EDS-408A-MM/SS: 0.3 A @ 24 V

EDS-408A-3M/3S/2M1S/1M2S: 0.28 A @ 24 V

**Overload Current Protection:** Present

**Connection:** 1 removable 6-contact terminal block

**Reverse Polarity Protection:** Present

### Physical Characteristics

**Housing:** Metal  
**IP Rating:** IP30 protection  
**Dimensions:** 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)  
**Weight:**  
 EDS-405A, EDS-405A-MM, EDS-405A-SS, EDS-405A-PN, EDS-405A-EIP: 650 g (1.44 lb)  
 EDS-408A, EDS-408A-MM, EDS-408A-SS, EDS-408A-PN, EDS-408A-EIP: 650 g (1.44 lb)  
 EDS-408A-3M/3S/2M1S/1M2S: 890 g (1.97 lb)  
**Installation:** DIN-rail mounting, wall mounting (with optional kit)

### Environmental Limits

**Operating Temperature:**  
 Standard Models: 0 to 60°C (32 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

**Safety:** UL 508, UL 60950-1\*, CSA C22.2 No. 60950-1, EN 60950-1\*\*  
**Hazardous Location:** UL/cUL Class 1 Division 2 Groups A/B/C/D\*, ATEX Zone 2 Ex nA nC IIC T4 Gc\*\*\*, ATEX Zone 2 Ex nA nC op is IIC T4 Gc\*\*\*\*  
**EMC:** EN 55022/24  
**EMI:** CISPR 22, FCC Part 15B Class A  
**EMS:**  
 IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV

IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m  
 IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV  
 IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV  
 IEC 61000-4-6 CS: 10 V  
 IEC 61000-4-8

**Traffic Control:** NEMA TS2  
**Rail Traffic:** EN 50121-4\*\*

### Marine:

EDS-405A/408A, EDS-405A/408A 2 Fiber series: DNV, GL  
 EDS-408A 3 Fiber series: DNV, GL, LR, ABS, NK

**Shock:** IEC 60068-2-27

**Freefall:** IEC 60068-2-32

**Vibration:** IEC 60068-2-6

\*EDS-405A/408A, EDS-405A/408A 2 Fiber series only

\*\*EDS-408A only

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\*\*\*\*EDS-408A, EDS-408A 2 Fiber series only

Note: Please check Moxa's website for the most up-to-date certification status.

### MTBF (mean time between failures)

### Time:

EDS-405A Series: 852,421 hrs

EDS-408A Series: 1,102,845 hrs

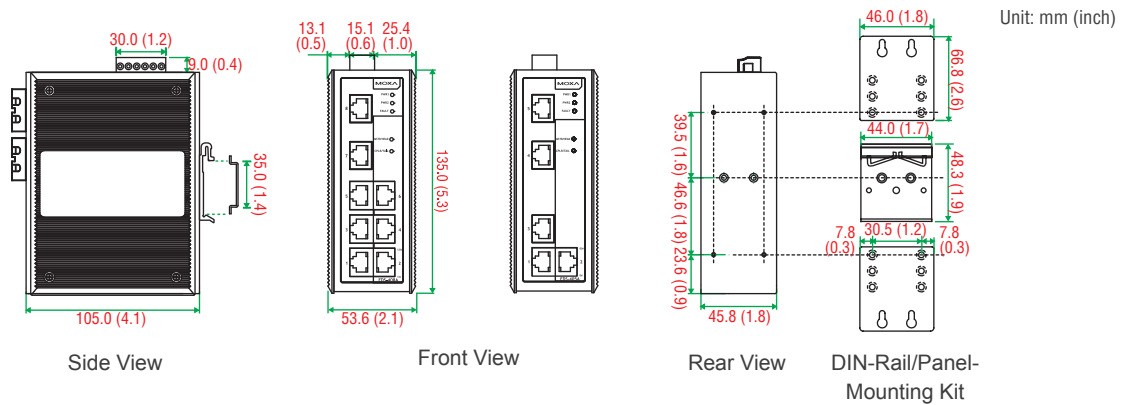
**Standard:** Telcordia (Bellcore), GB

### Warranty

**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

### Dimensions



### Ordering Information

| Available Models                    |                                   | Port Interface |                             |  |                              |
|-------------------------------------|-----------------------------------|----------------|-----------------------------|--|------------------------------|
| Standard Temperature<br>(0 to 60°C) | Wide Temperature<br>(-40 to 75°C) | 10/100BaseT(X) | Multi-Mode,<br>SC Connector | 100BaseFX<br>Multi-Mode,<br>ST Connector | Single-Mode,<br>SC Connector |
| EDS-405A/408A                       | EDS-405A/408A-T                   | 5/8            | –                           | –  | –                            |
| EDS-405A/408A-MM-SC                 | EDS-405A/408A-MM-SC-T             | 3/6            | 2                           | –  | –                            |
| EDS-405A/408A-MM-ST                 | EDS-405A/408A-MM-ST-T             | 3/6            | –                           | 2  | –                            |
| EDS-405A/408A-SS-SC                 | EDS-405A/408A-SS-SC-T             | 3/6            | –                           | –  | 2                            |
| EDS-408A-3M-SC                      | EDS-408A-3M-SC-T                  | 5              | 3                           | –  | –                            |
| EDS-408A-3M-ST                      | EDS-408A-3M-ST-T                  | 5              | –                           | 3  | –                            |
| EDS-408A-3S-SC                      | EDS-408A-3S-SC-T                  | 5              | –                           | –  | 3                            |
| EDS-408A-2M1S-SC                    | EDS-408A-2M1S-SC-T                | 5              | 2                           | –  | 1                            |
| EDS-408A-1M2S-SC                    | EDS-408A-1M2S-SC-T                | 5              | 1                           | –  | 2                            |
| EDS-405A/408A-EIP                   | EDS-405A/408A-EIP-T               | 5/8            | –                           | –  | –                            |
| EDS-405A/408A-PN                    | EDS-405A/408A-PN-T                | 5/8            | –                           | –  | –                            |

### 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-01:** Configuration backup and restoration tool for managed Ethernet switches, 0 to 60°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

**RK-4U:** 4U-high 19-inch rack-mounting kit

**WK-46:** Wall-mounting kit, 2 plates with 8 screws

### Package Checklist

- EDS-405A or EDS-408A switch
- Serial Cable: CN20070
- Protective caps for unused ports
- Documentation and software CD
- Hardware installation guide (printed)
- Warranty card