

# 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



### 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

- Command Line Interface (CLI) for quickly configuring major managed functions
- IPv6 Ready logo awarded (IPv6 Logo Committee certified)
- DHCP Option 82 for IP address assignment with different policies
- Support EtherNet/IP, Modbus/TCP and PROFINET\* protocols for device management and monitoring
- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches), and RSTP/STP for network redundancy
- 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

**Protocols:** IGMPv1/v2, GMRP, GVRP, SNMPv1/v2c/v3, DHCP Server/Client, TFTP, SNMP, SMTP, RARP, RMON, HTTP, Telnet, Syslog, DHCP Option 66/67/82, BootP, LLDP, PROFINET\*, EtherNet/IP, Modbus/TCP, IPv6, NTP Server/Client

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

**Flow Control:** IEEE 802.3x flow control, back pressure flow control  
\*EDS-405A/408A-PN series only

#### 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

**LED Indicators:** PWR1, PWR2, FAULT, MSTR/HEAD, CPLR/TAIL, 10/100M

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

#### Optical Fiber

Table:

	100BaseFX	
	Multi-mode	Single-mode
Wavelength	1300 nm	1310 nm
Max. TX	-10 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm
Link Budget	12 dB	29 dB
Typical Distance	5 km <sup>a</sup> 4 km <sup>b</sup>	40 km <sup>c</sup>
Saturation	-6 dBm	-3 dBm

- a. 50/125 μm, 800 MHz\*km fiber optic cable
- b. 62.5/125 μm, 500 MHz\*km fiber optic cable
- c. 9/125 μm single-mode fiber optic cable

### Power Requirements

**Input Voltage:** 24 VDC (12 to 45 VDC), redundant dual inputs

**Input Current:**

- EDS-405A, EDS-405A-EIP/PN: 0.24 A @ 24 V
- EDS-405A-MM/SS: 0.32 A @ 24 V
- EDS-408A, EDS-408A-EIP/PN: 0.26 A @ 24 V
- EDS-408A-MM/SS: 0.35 A @ 24 V
- EDS-408A-3M/3S/2M1S/1M2S: 0.32 A @ 24 V

**Overload Current Protection:** Present

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

**Reverse Polarity Protection:** Present

### Physical Characteristics

**Housing:** Metal, IP30 protection

**Dimensions:** 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)

**Weight:**

EDS-405A/408A series: 650 g

**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:** EDS-405A/408A series: UL 508, UL 60950-1\*

EDS-408A series: CSA C22.2 No. 60950-1, EN 60950-1

**Hazardous Location:** EDS-405A/408A series: UL/cUL Class 1 Division 2 Groups A/B/C/D\*

EDS-405A series: ATEX Zone 2 Ex nA nC IIC T4 Gc

EDS-408A series: ATEX Zone 2 Ex nA nC op is IIC T4 Gc, IECEx\*

**EMI:** FCC Part 15 Subpart B Class A, EN 55022 Class A

**EMS:**

EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3,

EN 61000-4-4 (EFT) Level 3, EN 61000-4-5 (Surge) Level 3,

EN 61000-4-6 (CS) Level 3, EN 61000-4-8

**Traffic Control:** NEMA TS2

**Rail Traffic:** EDS-408A series: EN 50121-4

**Marine:**

EDS-405A/408A series: DNV, GL

EDS-408A-3M/3S/2M1S/1M2S series: DNV, GL, LR, ABS, NK

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

**Vibration:** IEC 60068-2-32

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

\*Does not apply to the EDS-408A-3M/3S/2M1S/1M2S series.

### MTBF (mean time between failures)

**Time:**

EDS-405A Series: 392,000 hrs

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

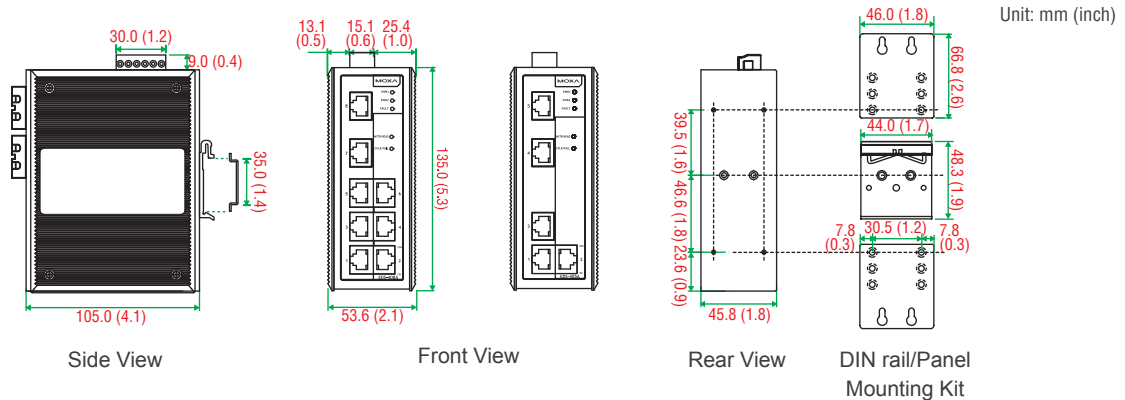
**Database:** Telcordia (Bellcore), GB

### 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 (0 to 60°C)	Wide Temperature (-40 to 75°C)	10/100BaseT(X)	100BaseFX		
			Multi-mode, SC Connector	Multi-mode, ST Connector	Single-mode, 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/PN	EDS-405A/408A-EIP/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" rack mounting kit

**WK-46:** Wall mounting kit

### Package Checklist

- EDS-405A or EDS-408A switch
- RJ45 to DB9 console port cable
- Protective caps for unused ports
- Documentation and software CD
- Hardware installation guide (printed)
- Warranty card