

# 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		
		OM1	Multi-Mode	Single-Mode
Fiber Cable Type	50/125 μm		G.652	
		800 MHz*km		
Typical Distance		4 km	5 km	40 km
Wave-length	Typical (nm)	1300		
	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:** 12/24/48 VDC, redundant dual inputs  
**Operating Voltage:** 9.6 to 60 VDC  
**Input Current:**  
 EDS-405A, EDS-405A-EIP, EDS-405A-PN: 0.21 A @ 24 V  
 EDS-405A-MM/SS: 0.26 A @ 24 V  
 EDS-408A, EDS-408A-EIP, EDS-408A-PN: 0.18 A @ 24 V  
 EDS-408A-MM/SS: 0.30 A @ 24 V  
 EDS-408A-3M/3S/2M1S/1M2S: 0.35 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: -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

**Safety:** UL 508, UL 60950-1\*, EN 60950-1(LVD)  
**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 55032/24  
**EMI:** CISPR 32, 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: 20 V/m  
 IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 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\*

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

**Freefall:** IEC 60068-2-31

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

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

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

\*\*\*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: 1,547,941 hrs

EDS-408A Series: 1,339,439 hrs

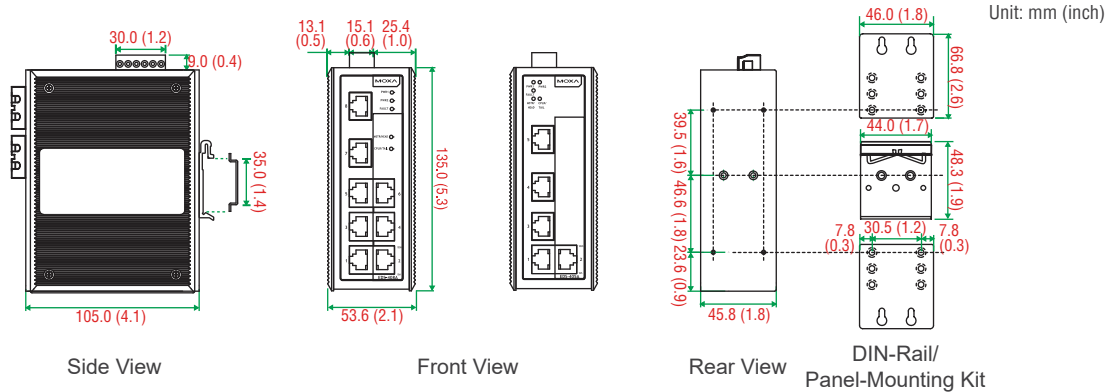
**Standard:** Telcordia (Bellcore), GB

### 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 (-10 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	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-46-01:** Wall-mounting kit, 2 plates with 8 screws

### Package Checklist

- EDS-405A or EDS-408A switch
- Serial Cable: CN20070
- Protective caps for unused ports
- Quick installation guide (printed)
- Warranty card