

5-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-405A 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-405A switches.

Additional Features and Benefits

- DHCP Option 82 for IP address assignment with different policies
 - Supports EtherNet/IP, Modbus TCP and PROFINET¹ 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 available¹
 - 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-405A, 405A-EIP/PN/PTP Series: 5 EDS-405A-MM-SC/MM-ST/SS-SC Series: 3 All models support: Auto negotiation speed Full/Half duplex mode Auto MDI/MDI-X connection
100BaseFX Ports (multi-mode SC connector)	EDS-405A-MM-SC Series: 2
100BaseFX Ports (multi-mode ST connector)	EDS-405A-MM-ST Series: 2
100BaseFX Ports (single-mode SC connector)	EDS-405A-SS-SC Series: 2

1. EDS-405A-PN Series only

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
	Wavelength	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).				

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 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1w for Rapid Spanning Tree Protocol
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Ethernet Software Features

Filter	802.1Q VLAN, GMRP, GVRP, IGMP v1/v2, Port-based VLAN
Industrial Protocols	EtherNet/IP ² , Modbus TCP EDS-405A-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	All models: NTP Server/Client, SNTP EDS-405A-PTP Series: IEEE 1588v2 PTP (hardware-based)

Switch Properties

IGMP Groups	256
MAC Table Size	EDS-405A Series, EDS-405A-EIP/MM-SC/MM-ST/PN/SS-SC Series: 2 K EDS-405A-PTP Series: 8 K
Max. No. of VLANs	64
Packet Buffer Size	1 Mbits
Priority Queues	4
VLAN ID Range	VID 1 to 4094

2. EDS-405A-EIP Series: EtherNet/IP protocol enabled by default.

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	
Input Voltage	12/24/48 VDC, Redundant dual inputs
Operating Voltage	9.6 to 60 VDC
Input Current	EDS-405A/405A-T, EDS-405A-EIP/PN Series: 0.21 A @ 24 VDC Fiber models: 0.26 A @ 24 VDC PTP models: 0.23 A @ 24 VDC
Overload Current Protection	Supported
Reverse Polarity Protection	Supported
Connection	1 removable 6-contact terminal block(s)
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-405A-EIP/MM-SC/MM-ST/PN/SS-SC Series: 650 g (1.44 lb) EDS-405A-PTP Series: 820 g (1.81 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 (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Standards and Certifications	
Safety	All models: UL 508 non-PTP models: UL 60950-1
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	Non-PTP models: 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: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PTP models: IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV

	IEC 61000-4-6 CS: 3 V IEC 61000-4-8
Hazardous Locations	Non-PTP models: ATEX, Class I Division 2
Maritime	Non-PTP models: DNV-GL
Traffic Control	Non-PTP models: NEMA TS2
Freefall	IEC 60068-2-31
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6

MTBF

Time	EDS-405A/405A-T, EDS-405A-EIP/PN Series: 1,547,941 hrs EDS-405A-MM-SC/MM-ST/SS-SC Series: 1,429,327 hrs EDS-405A-PTP Series: 1,316,464 hrs
Standards	Telcordia (Bellcore), GB

Warranty

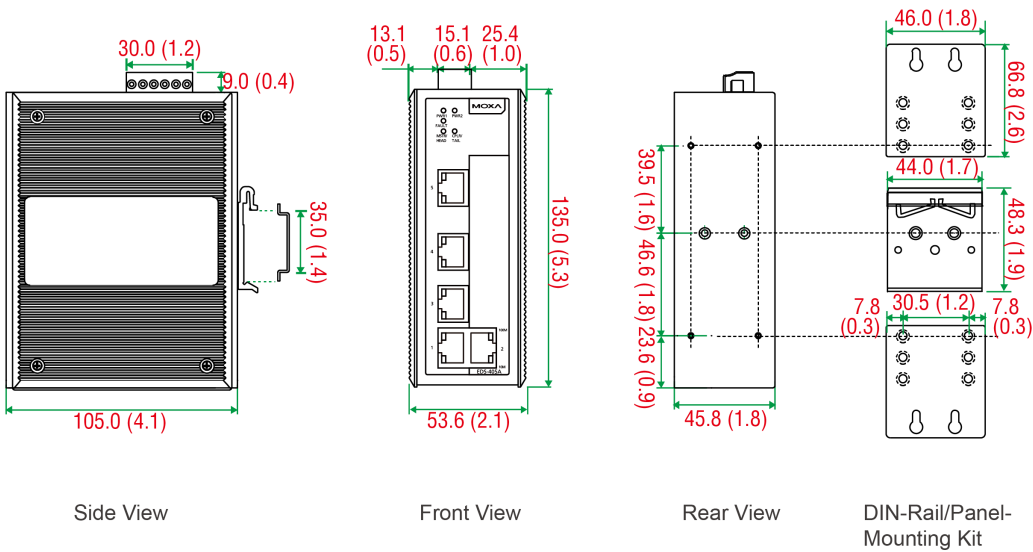
Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x EDS-405A Series switch
Cable	1 x RJ45-to-DB9 console cable
Installation Kit	2 x cap, plastic, for RJ45 port
Documentation	1 x product certificates of quality inspection, Simplified Chinese 1 x product notice, Simplified Chinese 1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)



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-405A	2	5	5	–	–	–	-10 to 60°C
EDS-405A-T	2	5	5	–	–	–	-40 to 75°C
EDS-405A-MM-ST	2	5	3	–	2	–	-10 to 60°C
EDS-405A-MM-ST-T	2	5	3	–	2	–	-40 to 75°C
EDS-405A-MM-SC	2	5	3	2	–	–	-10 to 60°C
EDS-405A-MM-SC-T	2	5	3	2	–	–	-40 to 75°C
EDS-405A-SS-SC	2	5	3	–	–	2	-10 to 60°C
EDS-405A-SS-SC-T	2	5	3	–	–	2	-40 to 75°C
EDS-405A-EIP	2	5	5	–	–	–	-10 to 60°C
EDS-405A-EIP-T	2	5	5	–	–	–	-40 to 75°C
EDS-405A-PN	2	5	5	–	–	–	-10 to 60°C
EDS-405A-PN-T	2	5	5	–	–	–	-40 to 75°C
EDS-405A-PTP	2	5	5	–	–	–	-10 to 60°C
EDS-405A-PTP-T	2	5	5	–	–	–	-40 to 75°C

Accessories (sold separately)

Software

MXview	Industrial network management software designed for converged automation networks
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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
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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
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Rack-Mounting Kits

RK-4U	19-inch rack-mounting kit
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