

EDS-405A Series

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 models: 5 EDS-405A-MM-SC/MM-ST/SS-SC models: 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 models: 2
100BaseFX Ports (multi-mode ST connector)	EDS-405A-MM-ST models: 2
100BaseFX Ports (single-mode SC connector)	EDS-405A-SS-SC models: 2

1. EDS-405A-PN Series only

Optical Fiber	100BaseFX		
	Multi-Mode		Single-Mode
	Fiber Cable Type	OM1	50/125 μm 800 MHz x km
			G.652
	Typical Distance	4 km	5 km
Wavelength	Typical (nm)	1300	
	TX Range (nm)	1260 to 1360	
	RX Range (nm)	1100 to 1600	
Optical Power	TX Range (dBm)	-10 to -20	
	RX Range (dBm)	-3 to -32	
	Link Budget (dB)	12	
	Dispersion Penalty (dB)	3	
<p>Note: When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by excessive optical power.</p> <p>Note: Compute the “typical distance” of a specific fiber transceiver as follows: Link budget (dB) > dispersion penalty (dB) + total link loss (dB).</p>			

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 models: 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

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

	RSTP MIB
Redundancy Protocols	RSTP STP Turbo Chain Turbo Ring v1/v2
Time Management	All models: NTP Server/Client, SNTP EDS-405A-PTP models: IEEE 1588v2 PTP (hardware-based)
Switch Properties	
IGMP Groups	256
MAC Table Size	EDS-405A, EDS-405A-EIP/MM-SC/MM-ST/PN/SS-SC models: 2 K EDS-405A-PTP models: 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 (115200, 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-EIP/PN/MM-SC/MM-ST/SS-SC models: 0.594 A @ 12 VDC 0.286 A @ 24 VDC 0.154 A @ 48 VDC EDS-405A-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)

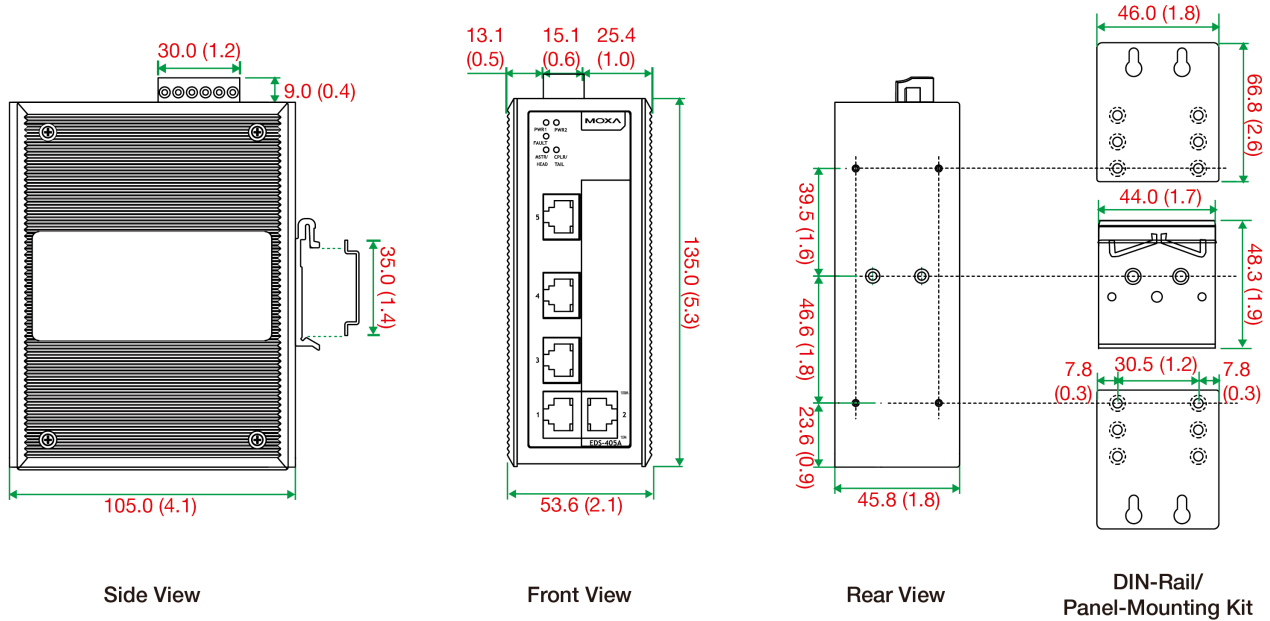
Weight	EDS-405A-EIP/MM-SC/MM-ST/PN/SS-SC models: 650 g (1.44 lb) EDS-405A-PTP models: 820 g (1.81 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)
Environmental Limits	
Operating Temperature	Standard Models: -10 to 60°C (14 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage 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, EN 62368-1
EMC	EN 55032/35
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
Railway	Non-PTP models: EN 50121-4
Traffic Control	Non-PTP models: NEMA TS2
Vibration	IEC 60068-2-6
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-31
Maritime	Non-PTP models: DNV, LR
MTBF	
Time	EDS-405A, EDS-405A-EIP/PN models: 1,547,941 hrs EDS-405A-MM-SC/MM-ST/SS-SC models: 1,429,327 hrs EDS-405A-PTP models: 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

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-PTP	2	5	5	–	–	–	-10 to 60°C
EDS-405A-PTP-T	2	5	5	–	–	–	-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
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Power Supplies

HDR-60-24	60 W/2.5 A DIN-rail 24 VDC power supply, universal 85 to 264 VAC or 120 to 370 VDC input voltage, -30 to 70°C operating temperature
NDR-120-24	120 W/5.0 A DIN-rail 24 VDC power supply, universal 90 to 264 VAC or 127 to 370 VDC input voltage, -20 to 70°C operating temperature
NDR-120-48	120 W/2.5 A DIN-rail 48 VDC power supply, universal 90 to 264 VAC or 127 to 370 VDC input voltage, -20 to 70°C operating temperature
NDR-240-48	240 W/5.0 A DIN-rail 48 VDC power supply, universal 90 to 264 VAC or 127 to 370 VDC input voltage, -20 to 70°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

Software

MXview-50	MXview license for 50 nodes
MXview-100	MXview license for 100 nodes
MXview-250	MXview license for 250 nodes
MXview-500	MXview license for 500 nodes
MXview-1000	MXview license for 1000 nodes
MXview-2000	MXview license for 2000 nodes
MXview Upgrade-50	MXview license expansion for 50 nodes

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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