

EDS-405A-PTP Series

5-port IEEE 1588v2 PTP managed Ethernet switches



- > IEEE 1588v2 PTP with hardware time stamping for precise time synchronization of networks
- > 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
- > Supports MXstudio for easy, visualized industrial network management



Introduction

The EDS-405A-PTP are 5-port IEEE 1588v2 PTP switches designed especially for real-time control applications. The switches support Modbus TCP, PROFINET RT, and EtherNet/IP for better SCADA

integration. Other management functions such as IGMP snooping, IEEE 802.1Q VLAN, QoS, RMON and relay warning, make the network planning more flexible and easy.

IEEE 1588 PTP Features

- IEEE 1588v2 PTP (Precision Time Protocol) with hardware time stamping for precise time synchronization of networks
- Support both IEEE 1588 Boundary Clock and Transparent Clock
- Support both End to End (2-step) and Peer to Peer (2-step) modes in Transparent Clock
- High precision time accuracy (under 1 μs)

General Features and Benefits

- Command Line Interface (CLI) for quickly configuring major managed functions
- 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

Specifications

Technology

Standards:

- IEEE 802.3 for 10BaseT
- IEEE 802.3u for 100BaseT(X)
- 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 802.1X for Authentication
- 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, DDM, 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, IEEE 1588v2 PTP (hardware-based)

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

Priority Queues: 4

Max. Number of VLANs: 64

VLAN ID Range: VID 1 to 4094

IGMP Groups: 256

MAC Table Size: 8 K

Packet Buffer Size: 1 Mbit

Interface

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

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

Power Requirements

Input Voltage: 12/24/48 VDC, redundant dual inputs

Operating Voltage: 9.6 to 60 VDC

Input Current: 0.23 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: 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: -40 to 85°C (-40 to 185°F)

Ambient Relative Humidity: 5 to 95% (non-condensing)

Standards and Certifications

Safety: UL 508

EMC: EN 55032/24

EMI: CISPR 32, FCC Part 15B Class A

EMS:

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: Signal: 3 V

IEC 61000-4-8

Shock: IEC 60068-2-27

Freefall: IEC 60068-2-32

Vibration: IEC 60068-2-6

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

MTBF (mean time between failures)

Time: 1,354,590 hours

Standard: Telcordia (Bellcore), GB

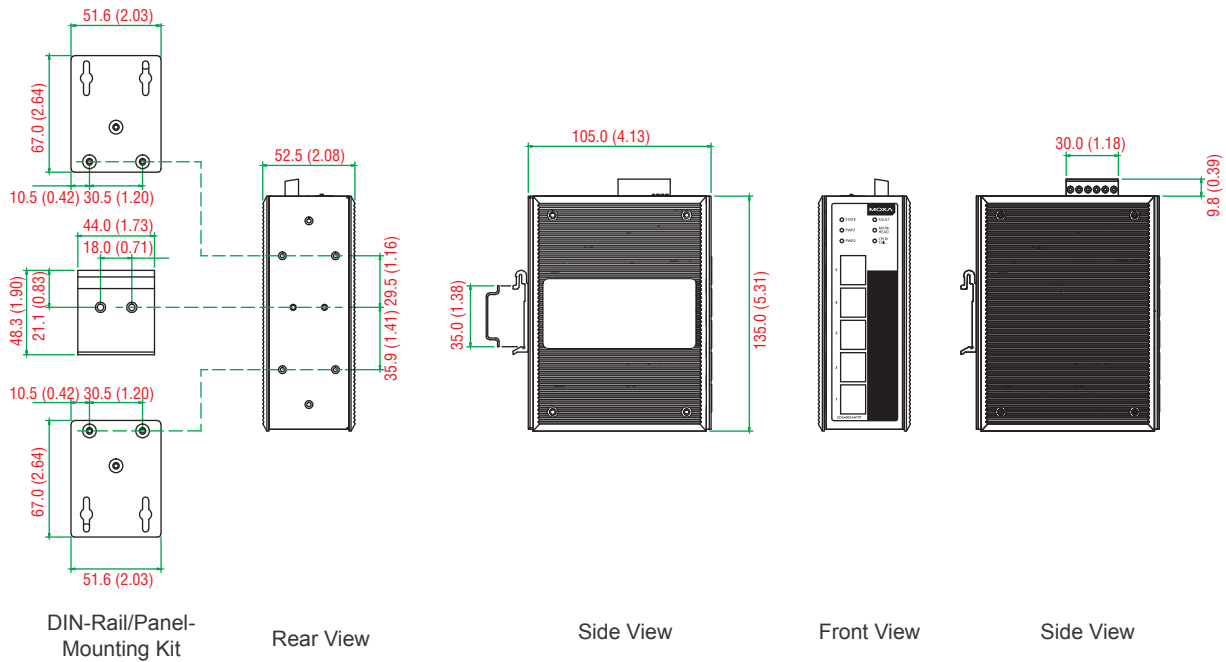
Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)



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	Single-Mode, SC Connector
EDS-405A-PTP	EDS-405A-PTP-T	5	-	-

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-PTP switch
- Serial Cable: CN20070
- Protective caps for unused ports
- Documentation and software CD
- Hardware installation guide (printed)
- Warranty card