# EDS-505A Series

*5-port managed Ethernet switches*

### Features and Benefits

- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches), and STP/RSTP/MSTP for network redundancy
- TACACS+, SNMPv3, IEEE 802.1X, HTTPS, and SSH to enhance network security
- Easy network management by web browser, CLI, Telnet/serial console, Windows utility, and ABC-01
- Supports MXstudio for easy, visualized industrial network management

### Certifications

## Introduction

The EDS-505A standalone 5-port managed Ethernet switches, with their advanced Turbo Ring and Turbo Chain technologies (recovery time < 20 ms), RSTP/STP, and MSTP, increase the reliability and availability of your industrial Ethernet network. Models with a wide operating temperature range of -40 to 75°C are also available, and the switches support advanced management and security features, making the EDS-505A switches suitable for any harsh industrial environment.

### Additional Features and Benefits

- Command line interface (CLI) for quickly configuring major managed functions
- DHCP Option 82 for IP address assignment with different policies
- Supports EtherNet/IP and Modbus TCP protocols for device management and monitoring
- Compatible with PROFINET protocol for transparent data transmission
- Lock port function for blocking unauthorized access based on MAC address
- 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/1Q and TOS/DiffServ) to increase determinism
- Port Trunking for optimum bandwidth utilization
- RMON for proactive and efficient network monitoring
- SNMPv1/v2c/v3 for different levels of network management
- Bandwidth management to prevent unpredictable network status
- Automatic warning by exception through email and relay output

## Specifications

Input/Output Interface

| | |
|---|---|
| Alarm Contact Channels | 2, Relay output with current carrying capacity of 1 A @ 24 VDC |
| Digital Input Channels | 2 |
| Digital Inputs | +13 to +30 V for state 1<br>-30 to +3 V for state 0<br>Max. input current: 8 mA |
| Buttons | Reset button |

## Ethernet Interface

| | |
|---|---|
| 10/100BaseT(X) Ports (RJ45 connector) | EDS-505A/505A-T: 5<br>EDS-505A-MM-SC/MM-ST/SS-SC Series: 3<br><br>All models support:<br>Auto negotiation speed<br>Full/Half duplex mode<br>Auto MDI/MDI-X connection |
| 100BaseFX Ports (multi-mode SC connector) | EDS-505A-MM-SC Series: 2 |
| 100BaseFX Ports (multi-mode ST connector) | EDS-505A-MM-ST Series: 2 |
| 100BaseFX Ports (single-mode SC connector) | EDS-505A-SS-SC Series: 2 |
| Standards | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT(X) and 100BaseFX<br>IEEE 802.1X for authentication<br>IEEE 802.1D-2004 for Spanning Tree Protocol<br>IEEE 802.1w for Rapid Spanning Tree Protocol<br>IEEE 802.1s for Multiple Spanning Tree Protocol<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1p for Class of Service<br>IEEE 802.3x for flow control<br>IEEE 802.3ad for Port Trunk with LACP |
| Optical Fiber | |

| | | 100BaseFX | | |
|---|---|---|---|---|
| | | Multi-Mode | | Single-Mode |
| Fiber Cable Type | | OM1 | 50/125 µm<br>800 MHz x km | G.652 |
| 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).

## Ethernet Software Features

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|---|---|
| Filter | 802.1Q VLAN, Port-based VLAN, IGMP v1/v2, GVRP, GMRP |
| Industrial Protocols | EtherNet/IP, Modbus TCP |
| Management | IPv4/IPv6, SNMPv1/v2c/v3, LLDP, Port Mirror, Back Pressure Flow Control, BOOTP, DDM, DHCP Option 66/67/82, DHCP Server/Client, Fiber check, Flow control, RARP, RMON, SMTP, SNMP Inform, Syslog, Telnet, TFTP |
| MIB | MIB-II, Bridge MIB, Ethernet-like MIB, P-BRIDGE MIB, Q-BRIDGE MIB, RMON MIB Groups 1, 2, 3, 9, RSTP MIB |
| Redundancy Protocols | STP, MSTP, RSTP, LACP, Link Aggregation, Turbo Chain, Turbo Ring v1/v2 |

| | |
|---|---|
| Security | HTTPS/SSL, RADIUS, TACACS+, Port Lock, SSH, Broadcast storm protection |
| Time Management | NTP Server/Client, SNTP |

### Switch Properties

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|---|---|
| IGMP Groups | 256 |
| MAC Table Size | 8 K |
| Max. No. of VLANs | 64 |
| Packet Buffer Size | 1 Mbits |
| Priority Queues | 4 |
| VLAN ID Range | VID 1 to 4094 |

### LED Interface

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|---|---|
| LED Indicators | PWR1, PWR2, FAULT, 10/100M (TP port), 100M (fiber port), MSTR/HEAD, CPLR/TAIL |

### Serial Interface

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|---|---|
| Console Port | RS-232 (TxD, RxD, GND), 8-pin RJ45 (115200, n, 8, 1) |

### DIP Switch Configuration

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|---|---|
| Ethernet Interface | Turbo Ring, Master, Coupler, Reserve |

### Power Parameters

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|---|---|
| Connection | 2 removable 6-contact terminal block(s) |
| Input Voltage | 12/24/48 VDC, Redundant dual inputs |
| Operating Voltage | 9.6 to 60 VDC |
| Input Current | EDS-505A/EDS-505A-T: 0.21 A @ 24 VDC<br>EDS-505A-MM-SC/MM-ST/SS-SC Series: 0.29 A @ 24 VDC |
| Overload Current Protection | Supported |
| Reverse Polarity Protection | Supported |

### Physical Characteristics

| | |
|---|---|
| Housing | Metal |
| IP Rating | IP30 |
| Dimensions | 80.2 x 135 x 105 mm (3.16 x 5.31 x 4.13 in) |
| Weight | 1040 g (2.3 lb) |
| Installation | DIN-rail mounting, Wall mounting (with optional kit) |

### Environmental Limits

| | |
|---|---|
| Operating Temperature | Standard Models: -10 to 60°C (14 to 140°F)<br>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

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|---|---|
| Safety | EN 60950-1, UL 60950-1, CSA C22.2 No. 60950-1, UL 508 |
| Hazardous Locations | ATEX, Class I Division 2 |
| EMC | EN 55032/24 |
| EMI | CISPR 32, FCC Part 15B Class A |
| EMS | IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 PFMF |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-31 |
| Vibration | IEC 60068-2-6 |

## MTBF

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| Time | 1,090,077 hrs |
| Standards | Telcordia (Bellcore), GB |

## Warranty

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

## Package Contents

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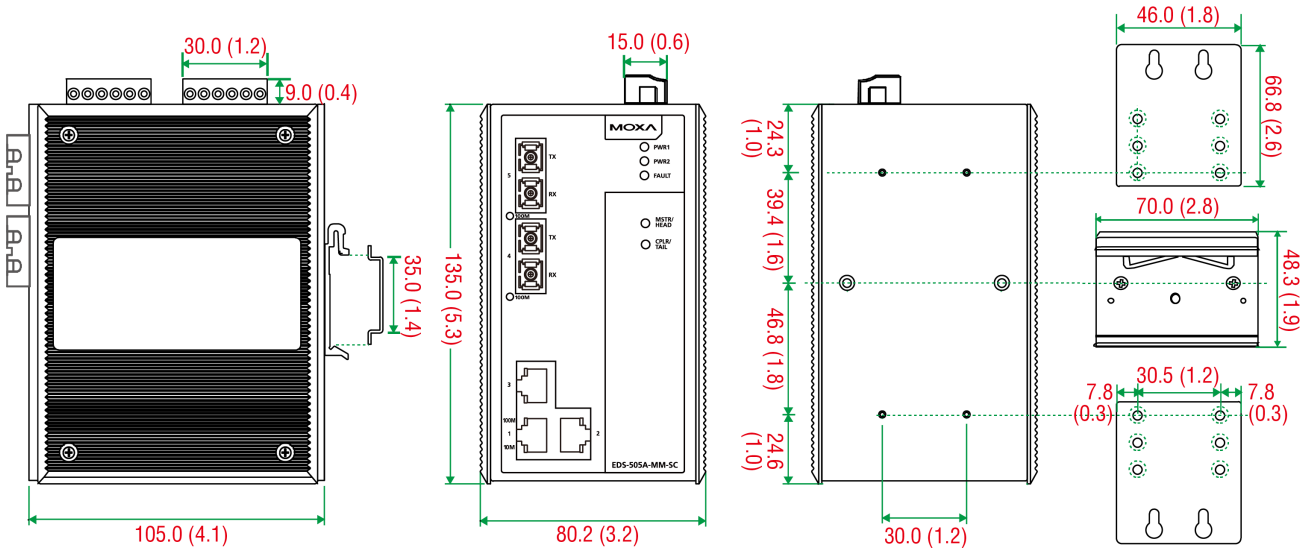
|---|---|
| Device | 1 x EDS-505A Series switch |
| Cable | 1 x DB9 female to RJ45 10-pin |
| Installation Kit | 4 x cap, plastic, for RJ45 port<br>2 x cap, plastic, for SC fiber port (-SC models)<br>2 x cap, plastic, for ST fiber port (-ST models) |
| Documentation | 1 x quick installation guide<br>1 x warranty card<br>1 x product certificates of quality inspection, Simplified Chinese<br>1 x product notice, Simplified Chinese |

## Dimensions

Unit: mm (inch)




Side View | Front View | Rear View | DIN-Rail/Panel-Mounting Kit

## Ordering Information

| Model Name | 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-505A | 5 | – | – | – | -10 to 60°C |
| EDS-505A-T | 5 | – | – | – | -40 to 75°C |
| EDS-505A-MM-SC | 3 | 2 | – | – | -10 to 60°C |
| EDS-505A-MM-SC-T | 3 | 2 | – | – | -40 to 75°C |
| EDS-505A-MM-ST | 3 | – | 2 | – | -10 to 60°C |
| EDS-505A-MM-ST-T | 3 | – | 2 | – | -40 to 75°C |
| EDS-505A-SS-SC | 3 | – | – | 2 | -10 to 60°C |
| EDS-505A-SS-SC-T | 3 | – | – | 2 | -40 to 75°C |

## Accessories (sold separately)

### Storage Kits

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|---|---|
| ABC-01 | Configuration backup and restoration tool for managed Ethernet switches and AWK Series wireless APs/bridges/clients, 0 to 60°C operating temperature |

### 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

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|---|---|
| WK-46 | Wall-mounting kit, 2 plates, 8 screws, 46.5 x 66.8 x 1 mm |

### Rack-Mounting Kits

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|---|---|
| RK-4U | 19-inch rack-mounting kit |

### Software

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|---|---|
| MXview-50 | Industrial network management software with a license for 50 nodes (by IP address) |
| MXview-100 | Industrial network management software with a license for 100 nodes (by IP address) |
| MXview-250 | Industrial network management software with a license for 250 nodes (by IP address) |
| MXview-500 | Industrial network management software with a license for 500 nodes (by IP address) |
| MXview-1000 | Industrial network management software with a license for 1000 nodes (by IP address) |
| MXview-2000 | Industrial network management software with a license for 2000 nodes (by IP address) |
| MXview Upgrade-50 | License expansion of MXview industrial network management software by 50 nodes (by IP address) |