

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                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                      |                  |      |                     |                     |
| Optical Fiber                              |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                      |                  |      |                     |                     |
|                                            |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                      | 100BaseFX        |      |                     |                     |
|                                            |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                      | Multi-Mode       |      | Single-Mode (40 km) | Single-Mode (80 km) |
|                                            |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                      | Fiber Cable Type | OM1  | 50/125 μm           | G.652               |
|                                            | 800 MHz x km                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                      |                  |      |                     |                     |
|                                            | Typical Distance                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                      | 4 km             | 5 km | 40 km               | 80 km               |
|                                            | Wavelength                                                                                                                                                                                                                                                                                          | Typical (nm)                                                                                                                                                                                                                                                                                                                                                                                         | 1300             |      | 1310                | 1550                |
|                                            |                                                                                                                                                                                                                                                                                                     | TX Range (nm)                                                                                                                                                                                                                                                                                                                                                                                        | 1260 to 1360     |      | 1280 to 1340        | 1530 to 1570        |
|                                            |                                                                                                                                                                                                                                                                                                     | RX Range (nm)                                                                                                                                                                                                                                                                                                                                                                                        | 1100 to 1600     |      | 1100 to 1600        | 1100 to 1600        |
|                                            | Optical Power                                                                                                                                                                                                                                                                                       | TX Range (dBm)                                                                                                                                                                                                                                                                                                                                                                                       | -10 to -20       |      | 0 to -5             | 0 to -5             |
|                                            |                                                                                                                                                                                                                                                                                                     | RX Range (dBm)                                                                                                                                                                                                                                                                                                                                                                                       | -3 to -32        |      | -3 to -34           | -3 to -34           |
|                                            |                                                                                                                                                                                                                                                                                                     | Link Budget (dB)                                                                                                                                                                                                                                                                                                                                                                                     | 12               |      | 29                  | 29                  |
|                                            |                                                                                                                                                                                                                                                                                                     | Dispersion Penalty (dB)                                                                                                                                                                                                                                                                                                                                                                              | 3                |      | 1                   | 1                   |
|                                            | Note: When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by excessive optical power.<br>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<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 |                  |      |                     |                     |

## Ethernet Software Features

|                      |                                                                                                                                                                                                               |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Filter               | 802.1Q VLAN, Port-based VLAN, IGMP v1/v2, GVRP, GMRP                                                                                                                                                          |
| Industrial Protocols | EtherNet/IP, Modbus TCP, PROFINET                                                                                                                                                                             |
| 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                                                |
| Time Management                        | NTP Server/Client, SNTP                                                                   |
| <b>Switch Properties</b>               |                                                                                           |
| 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                                                                             |
| <b>LED Interface</b>                   |                                                                                           |
| LED Indicators                         | PWR1, PWR2, FAULT, 10/100M (TP port), 100M (fiber port), MSTR/HEAD, CPLR/TAIL             |
| <b>Serial Interface</b>                |                                                                                           |
| Console Port                           | RS-232 (TxD, RxD, GND), 8-pin RJ45 (115200, n, 8, 1)                                      |
| <b>DIP Switch Configuration</b>        |                                                                                           |
| Ethernet Interface                     | Turbo Ring, Master, Coupler, Reserve                                                      |
| <b>Power Parameters</b>                |                                                                                           |
| 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: 0.3 A @ 24 VDC |
| Overload Current Protection            | Supported                                                                                 |
| Reverse Polarity Protection            | Supported                                                                                 |
| <b>Physical Characteristics</b>        |                                                                                           |
| 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)                                      |
| <b>Environmental Limits</b>            |                                                                                           |
| Operating Temperature                  | Standard Models: 0 to 60°C (32 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

|                     |                                                                                                                                                                                                                                            |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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

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

## Warranty

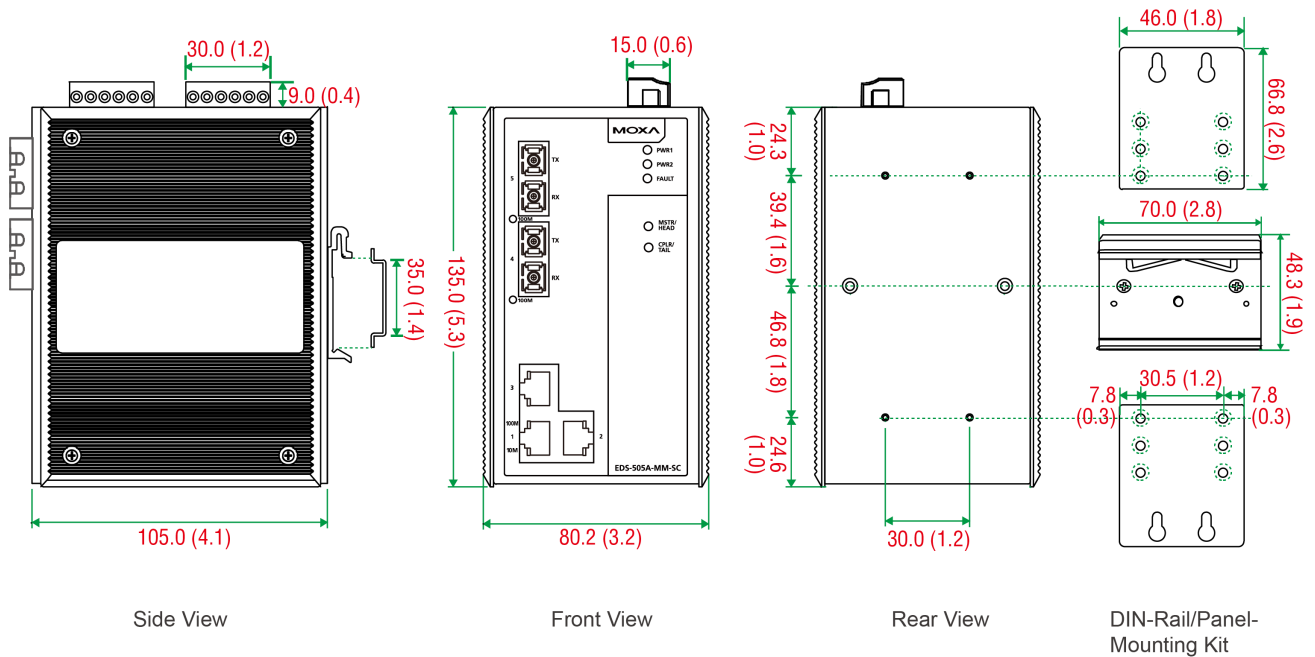
|                 |                                                                      |
|-----------------|----------------------------------------------------------------------|
| Warranty Period | 5 years                                                              |
| Details         | See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a> |

## Package Contents

|                  |                                                                                                                                                                                                   |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 document and software CD<br>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)



## Ordering Information

| Model Name       | 10/100BaseT(X) Ports<br>RJ45 Connector | 100BaseFX Ports<br>Multi-Mode, SC<br>Connector | 100BaseFX Ports<br>Multi-Mode, ST<br>Connector | 100BaseFX Ports<br>Single-Mode, SC<br>Connector | Operating Temp. |
|------------------|----------------------------------------|------------------------------------------------|------------------------------------------------|-------------------------------------------------|-----------------|
| EDS-505A         | 5                                      | –                                              | –                                              | –                                               | 0 to 60°C       |
| EDS-505A-T       | 5                                      | –                                              | –                                              | –                                               | -40 to 75°C     |
| EDS-505A-MM-SC   | 3                                      | 2                                              | –                                              | –                                               | 0 to 60°C       |
| EDS-505A-MM-SC-T | 3                                      | 2                                              | –                                              | –                                               | -40 to 75°C     |
| EDS-505A-MM-ST   | 3                                      | –                                              | 2                                              | –                                               | 0 to 60°C       |
| EDS-505A-MM-ST-T | 3                                      | –                                              | 2                                              | –                                               | -40 to 75°C     |
| EDS-505A-SS-SC   | 3                                      | –                                              | –                                              | 2                                               | 0 to 60°C       |
| EDS-505A-SS-SC-T | 3                                      | –                                              | –                                              | 2                                               | -40 to 75°C     |

## Accessories (sold separately)

### Software

|        |                                                                                   |
|--------|-----------------------------------------------------------------------------------|
| MXview | Industrial network management software designed for converged automation networks |
|--------|-----------------------------------------------------------------------------------|

### 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 |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------|

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

#### Rack-Mounting Kits

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

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