# EDS-2010-ML Series

*8+2G-port Gigabit unmanaged Ethernet switches*

## Features and Benefits

- 2 Gigabit uplinks with flexible interface design for high-bandwidth data aggregation
- QoS supported to process critical data in heavy traffic
- Relay output warning for power failure and port break alarm
- IP30-rated metal housing
- Redundant dual 12/24/48 VDC power inputs
- -40 to 75°C operating temperature range (-T models)

## Certifications

CE  FC  EN 50121-4  NEMA TS2

## Introduction

The EDS-2010-ML series of industrial Ethernet switches have eight 10/100M copper ports and two 10/100/1000BaseT(X) or 100/1000BaseSFP combo ports, which are ideal for applications that require high-bandwidth data convergence. Moreover, to provide greater versatility for use with applications from different industries, the EDS-2010-ML Series also allows users to enable or disable the Quality of Service (QoS) function, broadcast storm protection, and the port break alarm function with DIP switches on the outer panel.

The EDS-2010-ML Series has 12/24/48 VDC redundant power inputs, DIN-rail mounting, and high-level EMI/EMC capability. In addition to its compact size, the EDS-2010-ML Series has passed a 100% burn-in test to ensure it will function reliably in the field. The EDS-2010-ML Series has a standard operating temperature range of -10 to 60°C with wide-temperature (-40 to 75°C) models also available.

## Specifications

### Ethernet Interface

| | |
|---|---|
| 10/100BaseT(X) Ports (RJ45 connector) | 8<br>Auto negotiation speed<br>Full/Half duplex mode<br>Auto MDI/MDI-X connection |
| Combo Ports (10/100/1000BaseT(X) or 100/1000BaseSFP+) | 2<br>Auto negotiation speed<br>Auto MDI/MDI-X connection<br>Full/Half duplex mode |
| Standards | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT(X)<br>IEEE 802.3ab for 1000BaseT(X)<br>IEEE 802.3z for 1000BaseX<br>IEEE 802.3x for flow control<br>IEEE 802.1p for Class of Service |

### DIP Switch Configuration

| | |
|---|---|
| Ethernet Interface | Quality of Service (QoS), Broadcast storm protection, Port break alarm |

### Input/Output Interface

| | |
|---|---|
| Alarm Contact Channels | Relay output with current carrying capacity of 1 A @ 24 VDC |

## Switch Properties

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|---|---|
| MAC Table Size | 8 K |
| Packet Buffer Size | 4 Mbits |
| Processing Type | Store and Forward |

## Power Parameters

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|---|---|
| Connection | 1 removable 6-contact terminal block(s) |
| Input Current | 0.251 A @ 24 VDC |
| Input Voltage | 12/24/48 VDC, Redundant dual inputs |
| Operating Voltage | 9.6 to 60 VDC |
| Overload Current Protection | Supported |
| Reverse Polarity Protection | Supported |

## Physical Characteristics

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|---|---|
| Housing | Metal |
| IP Rating | IP30 |
| Dimensions | 36 x 135 x 95 mm (1.41 x 5.31 x 3.74 in) |
| Weight | 498 g (1.10 lb) |
| Installation | DIN-rail mounting, Wall mounting (with optional kit) |

## Environmental Limits

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|---|---|
| Operating Temperature | EDS-2010-ML-2GTXSFP: -10 to 60°C (14 to 140°F)<br>EDS-2010-ML-2GTXSFP-T: -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

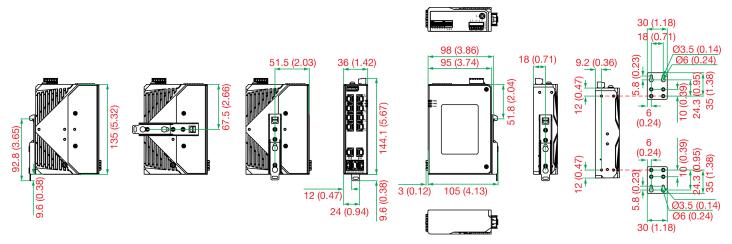| | |
|---|---|
| Safety | UL 61010-2-201, EN 62368-1(LVD) |
| EMC | EN 55032/35 |
| EMI | CISPR 32, FCC Part 15B Class A |
| EMS | IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 MHz: 20 V/m<br>IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 PFMF |
| Hazardous Locations | Class I Division 2, ATEX, IECEx |
| Railway | EN 50121-4 |
| Traffic Control | NEMA TS2 |
| Vibration | IEC 60068-2-6 |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-32 |

## MTBF

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|---|---|
| Time | 2,174,016 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-2010-ML Series switch |
| Installation Kit | 4 x cap, plastic, for RJ45 port<br>2 x cap, plastic, for SFP port |
| Documentation | 1 x quick installation guide<br>1 x warranty card |

## Dimensions

Unit: mm (inch)



## Ordering Information

| Model Name | 10/100BaseT(X) Ports (RJ45 connector) | Combo Ports (10/100/1000BaseT(X) or 100/1000BaseSFP+) | Operating Temp. |
|---|---|---|---|
| EDS-2010-ML-2GTXSFP | 8 | 2 | -10 to 60°C |
| EDS-2010-ML-2GTXSFP-T | 8 | 2 | -40 to 75°C |

## Accessories (sold separately)

### SFP Modules

| | |
|---|---|
| SFP-1FEMLC-T | SFP module with 1 100Base multi-mode, LC connector for 2/4 km transmission, -40 to 85°C operating temperature |
| SFP-1FESLC-T | SFP module with 1 100Base single-mode with LC connector for 40 km transmission, -40 to 85°C operating temperature |
| SFP-1FELLC-T | SFP module with 1 100Base single-mode with LC connector for 80 km transmission, -40 to 85°C operating temperature |
| SFP-1GTXRJ45-T | SFP module with 1 1000BaseT port with RJ45 connector for 100 m transmission, -40 to 75°C operating temperature |
| SFP-1GSXLC | SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, 0 to 60°C operating temperature |

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| | |
|---|---|
| SFP-1GSXLC-T | SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, -40 to 85°C operating temperature |
| SFP-1GLSXLC | SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, 0 to 60°C operating temperature |
| SFP-1GLSXLC-T | SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, -40 to 85°C operating temperature |
| SFP-1GLXLC | SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature |
| SFP-1GLXLC-T | SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature |
| SFP-1GLHLC | SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, 0 to 60°C operating temperature |
| SFP-1GLHLC-T | SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, -40 to 85°C operating temperature |
| SFP-1GLHXLC | SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature |
| SFP-1GLHXLC-T | SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, -40 to 85°C operating temperature |
| SFP-1GZXLC | SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, 0 to 60°C operating temperature |
| SFP-1GZXLC-T | SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, -40 to 85°C operating temperature |
| SFP-1GEZXLC | SFP module with 1 1000BaseEZX port with LC connector for 110 km transmission, 0 to 60°C operating temperature |
| SFP-1GEZXLC-120 | SFP module with 1 1000BaseEZX port with LC connector for 120 km transmission, 0 to 60°C operating temperature |
| SFP-1G10ALC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature |
| SFP-1G10ALC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature |
| SFP-1G10BLC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature |
| SFP-1G10BLC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature |
| SFP-1G20ALC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature |
| SFP-1G20ALC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature |
| SFP-1G20BLC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature |
| SFP-1G20BLC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature |
| SFP-1G40ALC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature |
| SFP-1G40ALC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature |
| SFP-1G40BLC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature |
| SFP-1G40BLC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature |

## Power Supplies

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|---|---|
| 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 |

| | |
|---|---|
| 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 |
| 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-30-02 | Wall-mounting kit, 2 plates, 4 screws, 30 x 66.8 x 2 mm |

## Rack-Mounting Kits

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

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