# SDS-3010 Series

*10-port (with options of 8 PoE+ ports or 2 Giga uplink ports) smart Ethernet switches*

### Features and Benefits

- 8 IEEE 802.3af/at PoE+ standard ports
- 36-watt output per PoE+ port in high-power mode
- Compact and flexible housing design to fit into confined spaces
- Web-based GUI for easy device configuration and management
- Multi-language web GUI: English, Traditional Chinese, Simplified Chinese, Japanese, German, and French
- Supports RSTP/STP, and MRP for network redundancy to ensure high network availability
- EtherNet/IP, PROFINET, and Modbus TCP industrial protocols supported for easy integration and monitoring in automation HMI/SCADA systems
- Security features based on IEC 62443
- Rotary DIP switch can perform profile-based settings without using a web browser
- Supports MXstudio for easy, visualized industrial network management

### Certifications

## Introduction

The SDS-3010 smart Ethernet switch is the ideal product for IA engineers and automation machine builders to make their networks compatible with the vision of Industry 4.0. By breathing life into machines and control cabinets, the smart switch simplifies daily tasks with its easy configuration and easy installation. In addition, it is monitorable and is easy to maintain throughout the entire product life cycle.

The most frequently used automation protocols—including EtherNet/IP, PROFINET, and Modbus TCP—are embedded in the SDS-3010 switch to provide enhanced operational performance and flexibility by making it controllable and visible from automation HMIs. It also supports a range of useful management functions, including IEEE 802.1Q VLAN, port mirroring, SNMP, warning by relay, and a multi-language Web GUI.

### Additional Features and Benefits

- IP port binding to ensure critical devices can be replaced quickly without reassigning the IP Address
- IEEE 802.1Q VLAN to ease network planning
- Supports the ABC-02-USB (automatic Backup Configurator) for quick system configuration backup/restore and firmware upgrade
- Automatic warning by exception through relay output
- Unused port lock, SNMPv3 and HTTPS to enhance network security
- Port mirroring for online debugging and monitoring
- Local log and the ability to export inventory files ease inventory management
- Advanced PoE management function (PoE port setting, PD failure check, and PoE scheduling)

## Specifications

Ethernet Interface

| | |
|---|---|
| 10/100BaseT(X) Ports (RJ45 connector) | SDS-3010-2GTXSFP(-T) models: 8<br>SDS-3010-8PoE-2GTXSFP(-T) models: 8[1]<br>Auto negotiation speed<br>Full/Half duplex mode<br>Auto MDI/MDI-X connection |
| Combo Ports (10/100/1000BaseT(X) or 100/1000BaseSFP) | SDS-3010-2GTXSFP(-T) models: 2<br>SDS-3010-8PoE-2GTXSFP(-T) models: 2[1] |

1. PoE model specifications are preliminary.

| | |
|---|---|
| PoE Ports (10/100BaseT(X), RJ45 connector) | SDS-3010-8PoE-2GTXSFP(-T) models: 8[2] |
| Standards | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 100BaseT(X)<br>IEEE 802.3ab for 1000BaseT(X)<br>IEEE 802.3x for flow control<br>IEEE 802.1D-2004 for Spanning Tree Protocol<br>IEEE 802.1w for Rapid Spanning Tree Protocol<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1p for Class of Service |

## Ethernet Software Features

| | |
|---|---|
| Industrial Protocols | EtherNet/IP<br>Modbus TCP<br>PROFINET IO Device |
| Management | Back Pressure Flow Control<br>DHCP Client<br>Fiber check<br>Flow control<br>IPv4/IPv6<br>LLDP<br>Port Mirror<br>RMON<br>SNMP Inform<br>SNMPv1/v2c/v3<br>Syslog |
| MIB | RFC1213<br>Ethernet-like MIB<br>IF MIB<br>LLDP MIB<br>Bridge MIB<br>Q-BRIDGE MIB |
| Redundancy Protocols | RSTP<br>STP<br>MRP |
| Security | Broadcast storm protection<br>HTTPS/SSL<br>Port Lock<br>SNMPv3<br>Trust access control |
| Time Management | NTP Server/Client<br>SNTP |
| Filter | 802.1Q VLAN |

## Rotary Switch Configuration

Industrial Profile

| Indicator | Mode |
|---|---|
| 0 | No function enabled via DIP switch (Default) |
| 1 | PROFINET profile enabled |
| 2 | PROFINET profile and DHCP client enabled |
| 3 | EtherNet/IP profile enabled |
| 4 | EtherNet/IP profile and DHCP client enabled |
| 5 | Modbus TCP profile enabled |
| 6 | Modbus TCP profile and DHCP client enabled |
| 7-9 | Reserved (currently performs the same behavior as indicator 0) |

2. PoE model specifications are preliminary.

### Switch Properties

| | |
|---|---|
| MAC Table Size | 8 K |
| Max. No. of VLANs | 8 |
| VLAN ID Range | VID 1 to 4094 |
| Packet Buffer Size | 3 Mbits |

### LED Interface

| | |
|---|---|
| LED Indicators | PWR1, PWR2, STATE, FAULT, 10/100M (TP Port), 10/100/1000M (Gigabit Combo port), smart PoE LED (SDS-3010-8PoE-2GTXSFP(-T) models only)[3] |

### USB Interface

| | |
|---|---|
| Storage Port | USB Type A (for ABC-02 only) |

### Input/Output Interface

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

### Power Parameters

| | |
|---|---|
| Connection | 2 removable 4-contact terminal block(s) |
| Input Voltage | SDS-3010-2GTXSFP(-T) models: 12-48 VDC<br>SDS-3010-8PoE-2GTXSFP(-T) models: 48 VDC[3]<br>Redundant dual inputs |
| Operating Voltage | SDS-3010-2GTXSFP(-T) models: 9.6 to 60 VDC<br>SDS-3010-8PoE-2GTXSFP(-T) models: 44 to 57 VDC[3] |
| Input Current | SDS-3010-2GTXSFP(-T) models: 0.98 A max. 12-48 VDC<br>SDS-3010-8PoE-2GTXSFP(-T) models: 0.28 A max. 48 VDC[3] |
| Power Budget | Max. 240 W for total PD consumption @ 48 VDC input<br>Max. 36 W for each PoE port<br><br>Note: PoE model specifications are preliminary. |
| Power Consumption (Max.) | SDS-3010-2GTXSFP(-T) models: 7.20 W<br>SDS-3010-8PoE-2GTXSFP(-T) models: 10.76 W full loading without PDs' consumption[3] |
| Overload Current Protection | Supported |
| Reverse Polarity Protection | Supported |

### Physical Characteristics

| | |
|---|---|
| Housing | Metal |
| IP Rating | IP40 |
| Dimensions | 36 x 135 x 111 mm (1.42 x 5.32 x 4.37 in) |

3. PoE model specifications are preliminary.

| | |
|---|---|
| Weight | SDS-3010-2GTXSFP(-T): 767g (1.69 lbs)<br>SDS-3010-8PoE-2GTXSFP(-T): 795g (1.75 lbs)[4] |
| Installation | DIN-rail mounting<br>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

| | |
|---|---|
| EMC | EN 55032/35<br>EN 61000-6-2/-6-4 |
| 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 800 MHz: 10 V/m; 800 MHz to 1 GHz: 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 (1.2/50 µs), 1 kV (10/700 µs)<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 PFMF |
| Safety | EN IEC 62368-1<br>UL 61010-2-201 |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-32 |
| Vibration | IEC 60068-2-6 |

### MTBF

| | |
|---|---|
| Time | SDS-3010-2GTXSFP(-T): 3,086,399 hrs<br>SDS-3010-8PoE-2GTXSFP(-T): 2,150,066 hrs[4] |
| Standards | Telcordia (Bellcore), GB |

### Warranty

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

### Package Contents

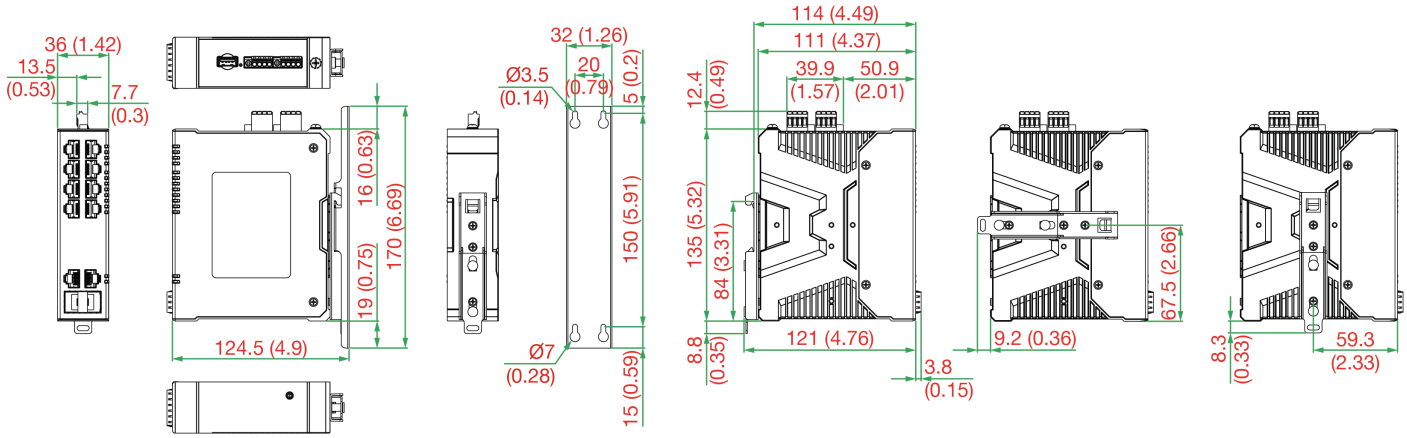
| | |
|---|---|
| Device | 1 x SDS-3010 Series switch |
| Documentation | 1 x product certificates of quality inspection, Simplified Chinese<br>1 x product notice, Simplified Chinese<br>1 x quick installation guide<br>1 x warranty card |

4. PoE model specifications are preliminary.

## Dimensions

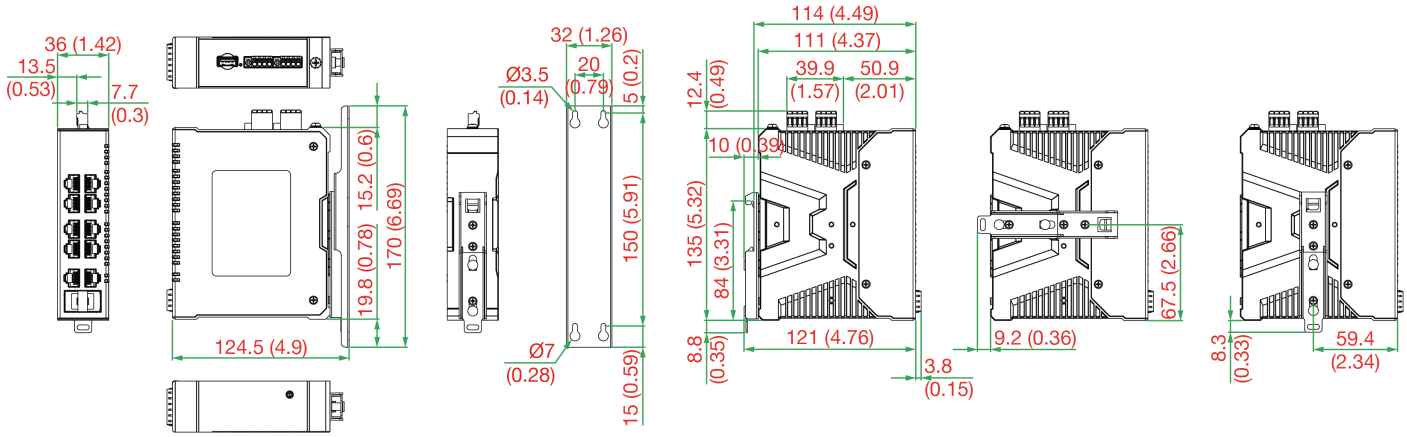
### SDS-3010 2GTXSFP Models

Unit: mm (inch)




### SDS-3010 8POE–2GTXSFP Models[5]

Unit: mm (inch)




## Ordering Information

| Model Name | 10/100BaseT(X) Ports, RJ45 Connector | Combo Ports, 10/100/1000BaseT(X) or 100/1000BaseSFP | PoE 10/100BaseT(X) Ports, RJ45 Connector | Operating Voltage | Operating Temp. |
|---|---|---|---|---|---|
| SDS-3010-2GTXSFP | 8 | 2 | - | 9.6 to 60 VDC | -10 to 60°C |
| SDS-3010-2GTXSFP-T | 8 | 2 | – | 9.6 to 60 VDC | -40 to 75°C |
| SDS-3010-8PoE-2GTXSFP | 8 | 2 | 8 | 44 to 57 VDC | -10 to 60°C |
| SDS-3010-8PoE-2GTXSFP-T | 8 | 2 | 8 | 44 to 57 VDC | -40 to 75°C |

## Accessories (sold separately)

### Storage Kits

| | |
|---|---|
| ABC-02-USB | Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, 0 to 60°C operating temperature |
| ABC-02-USB-T | Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, -40 to 75°C operating temperature |

### SFP Modules

5. PoE model specifications are preliminary.

| | |
|---|---|
| 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-1GLHLC | SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, 0 to 60°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-1GLSXLC | SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, 0 to 60°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-1GSXLC | SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, 0 to 60°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-1GLHLC-T | SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, -40 to 85°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-1GLSXLC-T | SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, -40 to 85°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-1GSXLC-T | SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, -40 to 85°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-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-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-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-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-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-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-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-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-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-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-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-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 |
| SFP-1FELLC-T | SFP module with 1 100Base single-mode with LC connector for 80 km transmission, -40 to 85°C operating temperature |
| 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-1GTXRJ45-T | SFP module with 1 1000BaseT port with RJ45 connector for 100 m transmission, -40 to 75°C operating temperature |

### Power Supplies

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