

EDS-305/308/309/316 Series

5, 8, 9, and 16-port unmanaged Ethernet switches



- > Redundant dual 24 VDC power inputs
- > Relay output warning for power failure and port break alarm
- > Broadcast storm protection
- > Transparent transmission of VLAN tagged packets
- > -40 to 75°C operating temperature range (T models)



Introduction

The EDS-305/308/309/316 are 5, 8, 9, and 16-port Ethernet switches that provide an economical solution for your industrial Ethernet connections. The built-in relay warning function alerts network engineers when power failures or port breaks occur, and the switches are designed for harsh industrial environments, such as in hazardous locations (Class I, Div. 2 / ATEX Zone 2). The switches comply with

FCC, UL, and CE standards, and come in two model types: standard operating temperature range models (0 to 60°C) and wide operating temperature range models (-40 to 75°C). Both models undergo a 100% burn-in test to ensure that they fulfill the special needs of industrial automation control applications. The EDS-305/308/309/316 switches can be installed easily on a DIN-Rail or in a distribution box.

Specifications

Technology

Standards:

IEEE 802.3 for 10BaseT
 IEEE 802.3u for 100BaseT(X) and 100BaseFX
 IEEE 802.3x for Flow Control

Processing Type: Store and Forward

Flow Control: IEEE 802.3x flow control, back pressure flow control

Switch Properties

MAC Table Size: 1 K (EDS-305/308/309), 4 K (EDS-316)

Packet Buffer Size: n/a (EDS-305), 512 Kbit (EDS-308/309), 1.25 Mbit (EDS-316)

Interface

Fiber Ports: 100BaseFX ports (SC/ST connector)

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

DIP Switches: Port break alarm mask

LED Indicators: PWR1, PWR2, FAULT, 10/100M (TP port), 100M (fiber port)

Alarm Contact: 1 relay output with current carrying capacity of 1 A @ 24 VDC

Optical Fiber

| | 100BaseFX | | |
|------------------|-------------------|--------------------|--------------------|
| | Multi-mode | Single-mode | Single-mode, 80 km |
| Wavelength | 1300 nm | 1310 nm | 1550 nm |
| Max. TX | -10 dBm | 0 dBm | 0 dBm |
| Min. TX | -20 dBm | -5 dBm | -5 dBm |
| RX Sensitivity | -32 dBm | -34 dBm | -34 dBm |
| Link Budget | 12 dB | 29 dB | 29 dB |
| Typical Distance | 5 km ^a | 40 km ^c | 80 km ^d |
| | 4 km ^b | | |
| Saturation | -6 dBm | -3 dBm | -3 dBm |

- a. 50/125 μm, 800 MHz*km fiber optic cable
- b. 62.5/125 μm, 500 MHz*km fiber optic cable
- c. 9/125 μm single-mode fiber optic cable
- d. 9/125 μm single-mode fiber optic cable (80 km)

Power Requirements

Input Voltage:

EDS-305/308: 24 VDC (12 to 48 VDC), redundant dual inputs

EDS-309: 24 VDC (12 to 45 VDC), redundant dual inputs

EDS-316: 24 VDC (12 to 45 VDC), redundant dual inputs

Input Current:

EDS-305: 0.13 A @ 24 V

EDS-305-M/S: 0.17 A @ 24 V

EDS-308: 0.13 A @ 24 V

EDS-308-M/S: 0.21 A @ 24 V

EDS-308-MM/SS: 0.26 A @ 24 V

EDS-309-3M: 0.31 A @ 24 V

EDS-316: 0.27 A @ 24 V

EDS-316-M/S/MM/SS/MS: 0.44 A @ 24 V

Overload Current Protection:

EDS-305, EDS-305-M, EDS-305-S, EDS-308: 1.1 A

EDS-308-M/S/MM/SS, EDS-309 series, EDS-316 series: 1.6 A

Connection: 1 removable 6-pin terminal blocks

Reverse Polarity Protection: Present

Physical Characteristics

Housing: Metal, IP30 protection

Dimensions:

EDS-305/308/309 Series:

53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)

EDS-316 Series:

80.1 x 135 x 105 mm (3.15 x 5.31 x 4.13 in)

Weight:

EDS-305/308/309 Series: 630 g

EDS-316 Series: 1140 g

Installation: DIN-Rail mounting, wall mounting (with optional kit)

Environmental Limits

Operating Temperature:

Standard Models: 0 to 60°C (32 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:

EDS-305 Series: UL 508, UL 60950-1, CSA C22.2 No. 60950-1

EDS-308/309/316 Series: UL 508, UL 60950-1, CSA C22.2 No.

60950-1, EN 60950-1

Hazardous Location: UL/cUL Class I Division 2 Groups A/B/C/D, ATEX Zone 2 Ex nC IIC

EMI: FCC Part 15 Subpart B Class A, EN 55022 Class A

EMS:

EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3,

EN 61000-4-4 (EFT) Level 3, EN 61000-4-5 (Surge) Level 3,

EN 61000-4-6 (CS) (EDS-305/308: Level 2; EDS-309/316: Level 3)

Marine: DNV, GL

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:

EDS-305 series: 422,000 hrs

EDS-308 series: 255,000 hrs

EDS-309 series: 396,000 hrs

EDS-316 series: 257,000 hrs

Database: MIL-HDBK-217F, GB 25°C

Warranty

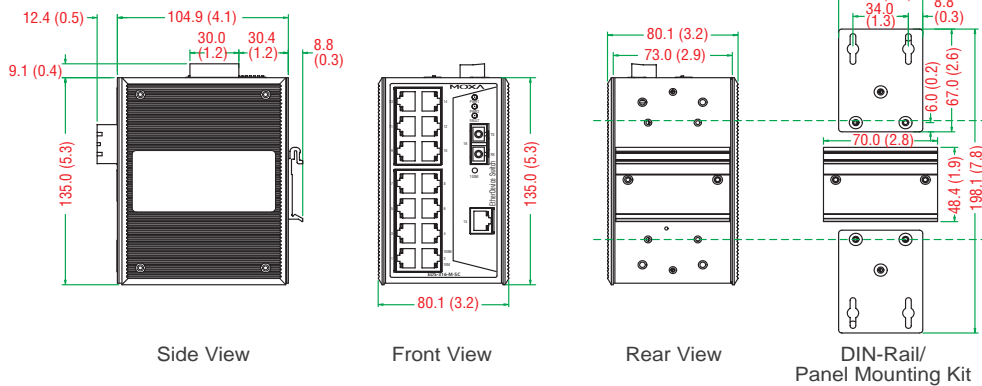
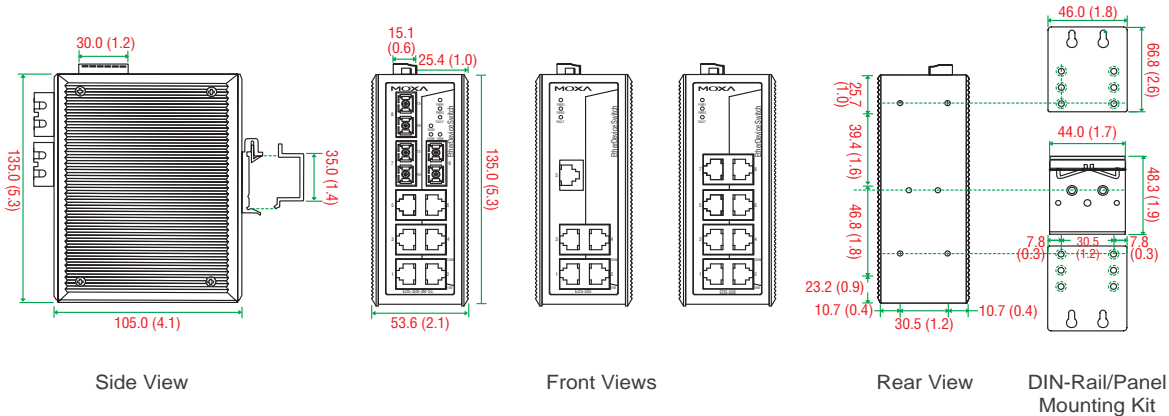
Warranty Period: 5 years

Details: See www.moxa.com/warranty

Dimensions

EDS-305/308/309 Series

Unit: mm (inch)



Ordering Information

| Available Models | | Port Interface | | | | |
|-------------------------------------|-----------------------------------|----------------|-----------------------------|-----------------------------|------------------------------|--|
| Standard Temperature (0 to 60°C) | Wide Temperature (-40 to 75°C) | 10/100BaseT(X) | 100BaseFX | | | |
| | | | Multi-mode, SC Connector | Multi-mode, ST Connector | Single-mode, SC Connector | Single-mode, SC Connector, 80 km |
| EDS-305 Series | | | | | | |
| EDS-305 | EDS-305-T | 5 | – | – | – | – |
| EDS-305-M-SC | EDS-305-M-SC-T | 4 | 1 | – | – | – |
| EDS-305-M-ST | EDS-305-M-ST-T | 4 | – | 1 | – | – |
| EDS-305-S-SC | EDS-305-S-SC-T | 4 | – | – | 1 | – |
| EDS-305-S-SC-80 | – | 4 | – | – | – | 1 |
| EDS-308 Series | | | | | | |
| EDS-308 | EDS-308-T | 8 | – | – | – | – |
| EDS-308-M-SC | EDS-308-M-SC-T | 7 | 1 | – | – | – |
| EDS-308-MM-SC | EDS-308-MM-SC-T | 6 | 2 | – | – | – |
| EDS-308-MM-ST | EDS-308-MM-ST-T | 6 | – | 2 | – | – |
| EDS-308-S-SC | EDS-308-S-SC-T | 7 | – | – | 1 | – |
| EDS-308-SS-SC | EDS-308-SS-SC-T | 6 | – | – | 2 | – |
| EDS-308-S-SC-80 | – | 7 | – | – | – | 1 |
| EDS-308-SS-SC-80 | – | 6 | – | – | – | 2 |
| EDS-309 Series | | | | | | |
| EDS-309-3M-SC | EDS-309-3M-SC-T | 6 | 3 | – | – | – |
| EDS-309-3M-ST | EDS-309-3M-ST-T | 6 | – | 3 | – | – |
| EDS-316 Series | | | | | | |
| EDS-316 | EDS-316-T | 16 | – | – | – | – |
| EDS-316-M-SC | EDS-316-M-SC-T | 15 | 1 | – | – | – |
| EDS-316-M-ST | EDS-316-M-ST-T | 15 | – | 1 | – | – |
| EDS-316-MM-SC | EDS-316-MM-SC-T | 14 | 2 | – | – | – |
| EDS-316-MM-ST | EDS-316-MM-ST-T | 14 | – | 2 | – | – |
| EDS-316-MS-SC | EDS-316-MS-SC-T | 14 | 1 | – | 1 | – |
| EDS-316-S-SC | EDS-316-S-SC-T | 15 | – | – | 1 | – |
| EDS-316-SS-SC | EDS-316-SS-SC-T | 14 | – | – | 2 | – |
| EDS-316-MS-SC-80 | – | 14 | 1 | – | – | 1 |
| EDS-316-S-SC-80 | – | 15 | – | – | – | 1 |
| EDS-316-SS-SC-80 | – | 14 | – | – | – | 2 |
| EDS-316-SS-SC-40/80 | – | 14 | – | – | 1 | 1 |

Optional Accessories (can be purchased separately)

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

WK-46: Wall mounting kit

RK-4U: 4U-high 19" rack mounting kit

Package Checklist

- EDS-305 or EDS-308 or EDS-309 or EDS-316 switch
- Protective caps for unused ports
- Hardware installation guide (printed)
- Warranty card

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