

# EDS-316/308/305 Series

## 16-, 8-, or 5-Port Unmanaged Ethernet Switch



### Highlights

- > 10/100BaseT(X), 100BaseFX (Multi/single mode, SC/ST connector)
- > Redundant dual 24 VDC power inputs
- > Relay output warning for power failure and port break alarm
- > Broadcast storm protection
- > Transmits VLAN tag packets transparently
- > -40 to 75°C operating temperature range (T models)
- > Rugged hardware design well suited for industrial environments



### Features

#### High Performance Network Switching Technology

- 10/100BaseT(X) (RJ45), 100BaseFX (SC/ST connector, Multi/Single mode)
- Broadcast storm protection
- IEEE802.3/802.3u/802.3x supported
- Store and Forward switching process type
- 10/100M, Full/Half-Duplex, MDI/MDI-X auto sensing

#### Industrial-grade Reliability

- Power failure, port break alarm by relay output
- Redundant dual DC power inputs

#### Rugged Design

- Operating temperature range from 0 to 60°C, or extended operating temperature from -40 to 75°C
- IP30, rugged high-strength metal case
- DIN-Rail or panel mounting ability
- Long-haul transmit distance of 40 km or 80 km
- Designed for hazardous locations (Class 1 Div. 2/Zone 2)

#### Recommended Accessories

- DR series DIN-Rail 24 VDC power supplies

### Introduction

The EDS-316/308/305 series includes 16, 8, and 5 port Ethernet switches that provide an economical solution for your industrial Ethernet connection, and the built-in relay warning function alerts maintainers when power failures or port breaks occur.

These switches have been designed for harsh industrial environments, such as in hazardous locations (Class 1 Div. 2/Zone 2) that comply

with FCC, TÜV, UL, and CE standards. EDS-316/308/305 series includes 2 models: one with an operating temperature range of 0 to 60°C, and the other one with extended operating temperature range of -40 to 75°C. These 2 models pass through a 100% burn-in test to ensure that they fulfill the special needs of industrial automation control.

### Specifications

#### Technology

**Standards:** IEEE802.3, 802.3u, 802.3x

**Processing Type:** Store and Forward

**Flow Control:** IEEE802.3x flow control, back pressure flow control

#### Interface

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

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

**LED Indicators:** PWR1, PWR2, Fault, 10/100M (TP port), and 100M (Fiber port)

**DIP Switch:** Port break alarm mask

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

**Optical Fiber**

**Distance:**

**EDS-316 series:**

- Multi mode: 0 to 5 km, 1300 nm (50/125 μm, 800 MHz\*km) for standard temperature models
- 0 to 4 km, 1300 nm (62.5/125 μm, 500 MHz\*km) for standard temperature models
- 0 to 2 km, 1300 nm (50/125 μm, 800 MHz\*km) for wide temperature models (T Models)
- 0 to 2 km, 1300 nm (62.5/125 μm, 500 MHz\*km) for wide temperature models (T Models)

- Single mode: 0 to 40 km, 1310 nm (9/125 μm, 3.5 PS/(nm\*km))
- 0 to 80 km, 1550 nm (9/125 μm, 19 PS/(nm\*km))

**EDS-308/305 series:**

- Multi mode: 0 to 5 km, 1300 nm (50/125 μm, 800 MHz\*km)
- 0 to 4 km, 1300 nm (62.5/125 μm, 500 MHz\*km)
- Single mode: 0 to 40 km, 1310 nm (9/125 μm, 3.5 PS/(nm\*km))
- 0 to 80 km, 1550 nm (9/125 μm, 19 PS/(nm\*km))

**Min. TX Output:**

- Multi mode : -20 dBm
- Single mode: 0 to 40 km, -5 dBm
- 0 to 80 km, -5 dBm

**Max. TX Output:**

- Multi mode: -14 dBm
- Single mode: 0 to 40 km, 0 dBm
- 0 to 80 km, 0 dBm

**RX Sensitivity:** -34 to -30 dBm (Multi), -36 to -32 dBm (Single)

**Power**

**Input Voltage:**

- EDS-316 series: 24 VDC (12 to 45VDC), redundant inputs
- EDS-308/305 series : 24 VDC (12 to 48 VDC), redundant inputs

**Input Current (@ 24 VDC):**

- 0.29A (EDS-316)
- 0.34A (EDS-316-S)
- 0.36A (EDS-316-M)
- 0.40A (EDS-316-SS)
- 0.44A (EDS-316-MM, EDS-316-MS)
- 0.35A (EDS-308-M, EDS-308-S, EDS-308-MM, EDS-308-SS)
- 0.25A (EDS-305, EDS-305-M, EDS-305-S, EDS-308)

**Overload Current Protection:**

- 1.6A (EDS-308-M, EDS-308-S, EDS-308-MM, EDS-308-SS, EDS-316, EDS-316-M, EDS-316-MM, EDS-316-MS, EDS-316-S, EDS-316-SS)
- 1.1A (EDS-305, EDS-305-M, EDS-305-S, EDS-308)

**Connection:** Removable 6-pin terminal block

**Reverse Polarity Protection:** Present

**Mechanical**

**Casing:** IP30 protection, metal case

**Dimensions (W x H x D):**

- EDS-316 series: 80.5x 135 x 105 mm
- 3.16 x 5.31 x 4.13 in.
- EDS-308/305 series: 53.6 x 135 x 105 mm
- 2.11 x 5.31 x 4.13 in.

**Weight:**

- EDS-316 series: 1140 g
- EDS-308/305 series: 630 g

**Installation:** DIN-Rail or Wall Mounting (optional kit)

**Environmental**

**Operating Temperature:** 0 to 60°C (32 to 140°F), -40 to 75°C (-40 to 167°F) for T models

**Storage Temperature:** -40 to 85°C (-40 to 185°F)

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

**Regulatory Approvals**

**Safety:**

- EDS-316 series: UL508, UL60950-1, EN60950-1
- EDS 308/305 series: UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1

**Hazardous location:**

- UL/cUL Class 1, Division 2, Groups A, B, C and D
- ATEX Class 1, Zone 2, EEx nC IIC (Pending)

**Maritime:** DNV, GL

**EMI:** FCC Part 15, CISPR (EN55022) class A

- EMS:** EN61000-4-2 (ESD), level 3
- EN61000-4-3 (RS), level 3
- EN61000-4-4 (EFT), level 3
- EN61000-4-5 (Surge), level 3
- EN61000-4-6 (CS), level 3

**Shock:** IEC60068-2-27

**Free Fall:** IEC60068-2-32

**Vibration:** IEC60068-2-6

- MTBF:** EDS-316 series 257,000 hrs
- EDS-308 series 255,000 hrs
- EDS-305 series 422,000 hrs
- Database: MIL-HDBK-217F, GB 25°C

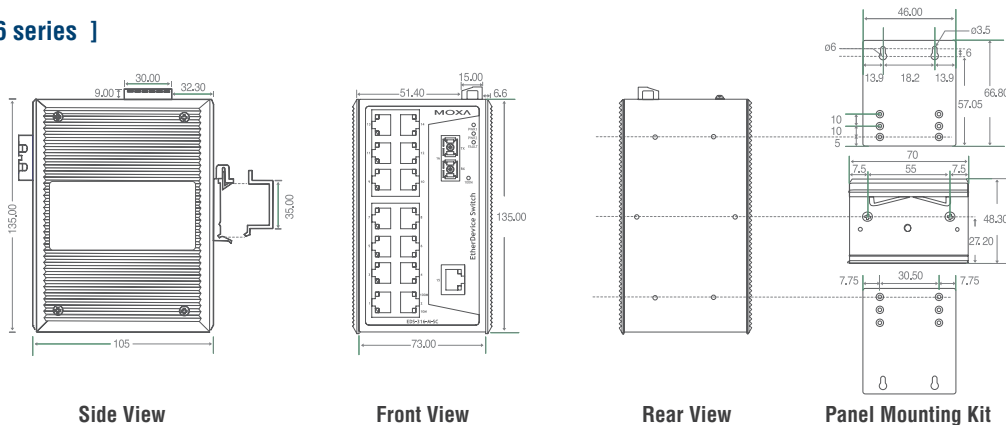
\*Please check MOXA's website for the most up-to-date certification status.

**Warranty**

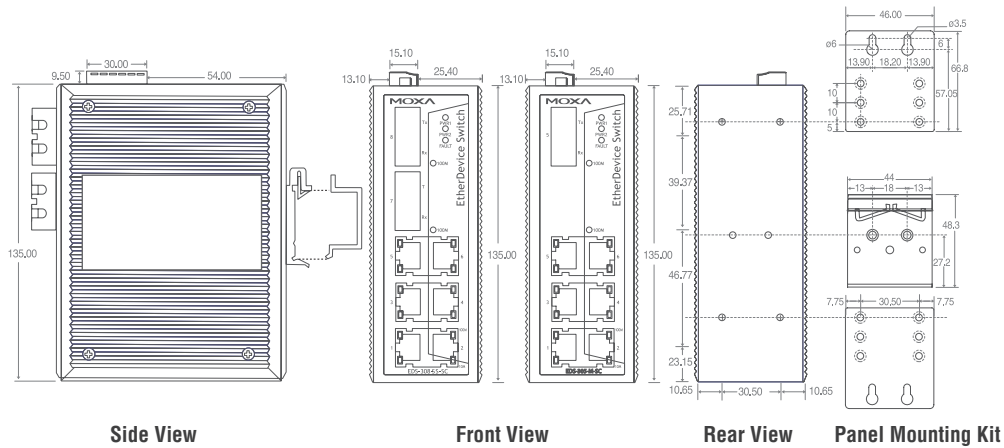
5 years

**Dimensions (unit = mm)**

[ EDS-316 series ]



[ EDS-308/305 series ]



3

Unmanaged Ethernet Switches EDS-316/308/305

**Ordering Information**

EDS-316/308/305-AA-BB-CC-D

Ordering Code Definition	Fiber Port	FO Connector	Single Mode Distance	Operating Temperature
	<b>M:</b> One Multi Mode <b>S:</b> One Single Mode <b>MM:</b> Two Multi Mode <b>SS:</b> Two Single Mode <b>MS:</b> One Multi Mode One Single Mode	<b>SC:</b> SC Connector <b>ST:</b> ST Connector	<b>40/80:</b> One 40Km port plus one 80Km port	<b>T:</b> Operating Temp. -40 to 75°C (Standard Models: 0 to 60°C)
Available Models	<b>EDS-316 Series</b> Standard: • EDS-316 • EDS-316-M-SC • EDS-316-M-ST • EDS-316-MM-SC • EDS-316-MM-ST • EDS-316-MS-SC • EDS-316-S-SC • EDS-316-SS-SC Long-Haul: • EDS-316-MS-SC-80 • EDS-316-S-SC-80 • EDS-316-SS-SC-80 • EDS-316-SS-SC-40/80 Wide Temperature: • EDS-316-T • EDS-316-M-SC-T • EDS-316-M-ST-T • EDS-316-MM-SC-T • EDS-316-MM-ST-T • EDS-316-MS-SC-T • EDS-316-S-SC-T • EDS-316-SS-SC-T			
	<b>EDS-308 Series</b> Standard: • EDS-308 • EDS-308-M-SC • EDS-308-MM-SC • EDS-308-MM-ST • EDS-308-S-SC • EDS-308-SS-SC Long-Haul: • EDS-308-S-SC-80 • EDS-308-SS-SC-80 Wide Temperature: • EDS-308-T • EDS-308-M-SC-T • EDS-308-MM-SC-T • EDS-308-MM-ST-T • EDS-308-S-SC-T • EDS-308-SS-SC-T • EDS-308-S-SC-80-T • EDS-308-SS-SC-80-T			
	<b>EDS-305 Series</b> Standard: • EDS-305 • EDS-305-M-SC • EDS-305-M-ST • EDS-305-S-SC Long-Hual: • EDS-305-S-SC-80 Wide Temperature: • EDS-305-T • EDS-305-M-SC-T • EDS-305-M-ST-T • EDS-305-S-SC-T			
Optional Accessories	• <b>DR-4524:</b> 45W/2A DIN-Rail 24 VDC Power Supply, 85 to 264 VAC input • <b>DR-75-24:</b> 75W/3.2A DIN-Rail 24 VDC Power Supply, 85 to 264 VAC input • <b>DR-120-24:</b> 120W/5A DIN-Rail 24 VDC Power Supply, 88 to 132 VAC/176 to 264 VAC input by switch • <b>WK-46:</b> Wall Mounting Kit			