

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). 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), 1.5 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, 2 km (EDS-316-T) ^a	40 km ^c	80 km ^d
	4 km, 2 km (EDS-316-T) ^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-309/316: 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: 80.5 x 135 x 105 mm (3.16 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)

Regulatory Approvals

Safety:

EDS-305/308/309 Series: UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1

EDS-316 series: UL508, UL60950-1, EN60950-1

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

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), EDS-305/308: level 2; EDS-309/316: level 3

Maritime: 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 (meantime 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

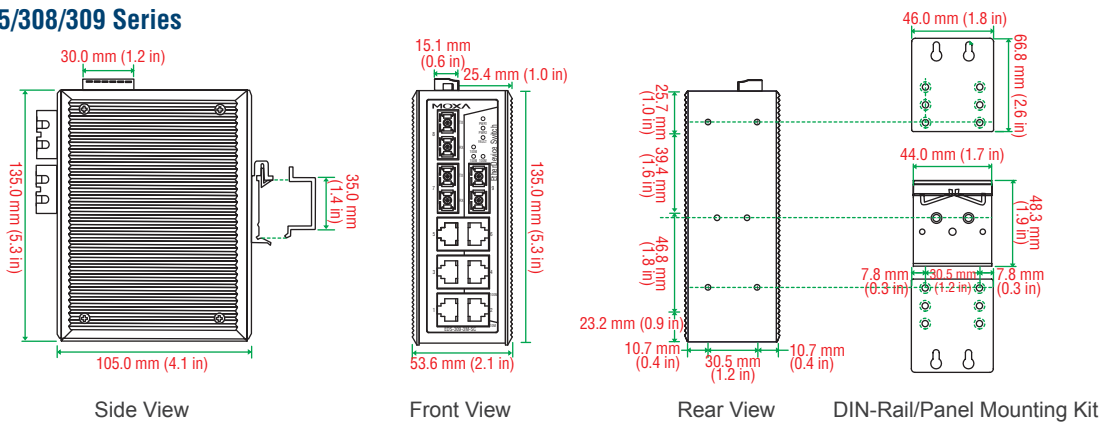
Warranty

Warranty Period: 5 years

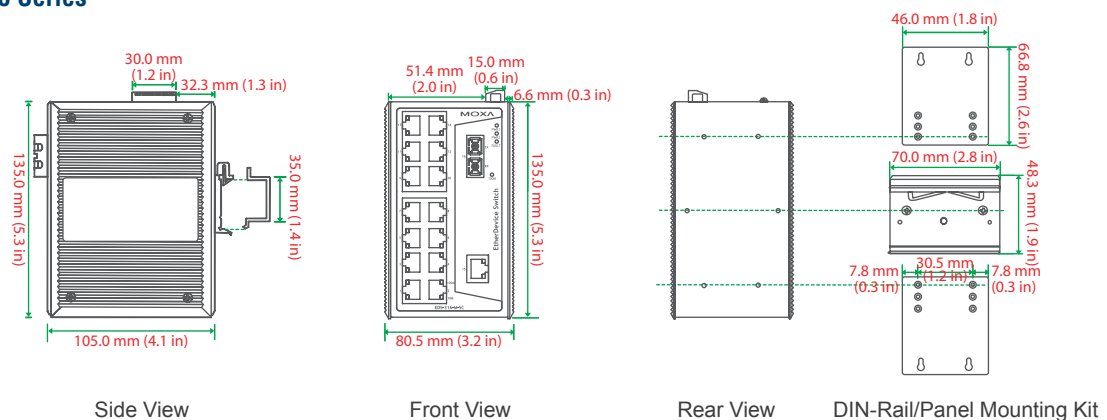
Details: See www.moxa.com/warranty

Dimensions

EDS-305/308/309 Series



EDS-316 Series



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	EDS-308-S-SC-80-T*	7	–	–	–	1
EDS-308-SS-SC-80	EDS-308-SS-SC-80-T*	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

* EDS-308-S-SC-80-T/EDS-308-SS-SC-80-T: -40 to 60°C operating temperature

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