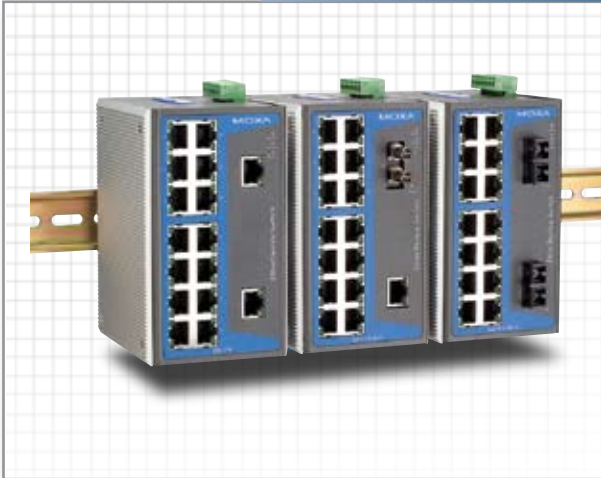# EtherDevice™ Switch EDS-316 Series

Industrial 16-Port Unmanaged Ethernet Switches

Highlights ▬

> 16-port unmanaged switches with 10/100BaseT(X), 100BaseFX (Multi mode, SC/ST connector)

> Relay output warning for power failure and port break alarm

> Redundant dual 24 VDC power inputs

> Broadcast storm protection

> -40 to 75˚C operating temperature range

CE FC

Features

High Performance Network Switching Technology

- 10/100BaseT(X) (RJ45), 100BaseFX (SC connector, Multi/Single mode)

- Broadcast storm protection

- IEEE802.3/802.3u/802.3x support

- 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

- For hazardous locations (Class 1 Div. 2/Zone 2) (pending)

Recommended Accessories

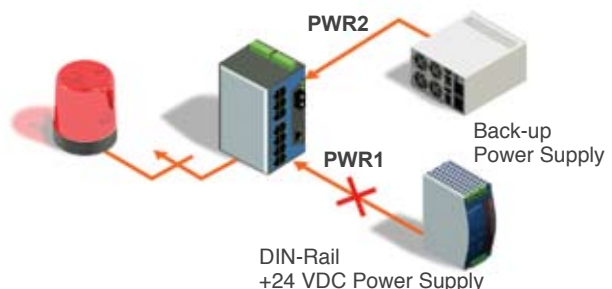- DR Series DIN-Rail 24 VDC Power Supplies

Introduction

The EDS-316 series includes 16 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 Series includes 2 models: one with an operating temperature range of 0 to 60°C, and the other with extended operating temperature range of -40 to 75°C.   The 2 models are designed for standard and extended operating temperatures respectively, and go through a 100% burn-in test to ensure that they fulfill the special needs of industrial automation control.

Redundant Power Inputs

EDS-316 provides two power inputs that can be connected simultaneously to live DC power sources. If one of the power inputs fails, the other live source acts as a backup to provide the EDS-316's power needs automatically.

PWR2

Back-up Power Supply

PWR1

DIN-Rail +24 VDC Power Supply

Relay Output Alarm for Port Breaks, Power Failure

EDS-316 provides relay contact outputs to warn technicians on the shop floor when the power fails or a port link breaks, so that they can respond quickly with appropriate emergency operation procedures.

Broadcast Storm Protection

EDS-316 protects itself from receiving too many broadcast packets. During normal use, broadcast packets will be forwarded to all ports except the source port. However, EDS-316 will discard broadcast or multicast packets if the number of those packets exceeds a threshold in a preset period of time. When the preset period expires, it will then resume receiving broadcast or multicast packets until the threshold is reached again.

Transmits VLAN Tag Packets Transparently

The IEEE802.1 standard defines the VLAN tag, including TPID Control (Information) with an additional 4 bytes inserted into an untagged Ethernet frame. EDS-316 can transmit and receive these data packet without any change.

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: Power, 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:

Multi mode: 0 to 5 km, 1310 nm (50/125 μm, 800 MHz*km) for standard temperature models
0 to 4 km, 1310 nm (62.5/125 μm, 500 MHz*km) for standard temperature models
0 to 2 km, 1310 nm (50/125 μm, 800 MHz*km) for wide temperature models (-T Models)
0 to 2 km, 1310 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))

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

Power
Input Voltage: 24 VDC (12 to 45 VDC), redundant inputs
Input Current (@24V): Input Current @ 24VDC
0.29 A (EDS-316)

0.34 A (EDS-316-S)
0.36 A (EDS-316-M)
0.40 A (EDS-316-SS)
0.44 A (EDS-316-MM, EDS-316-MS)
Overload Current Protection: 1.6A
Connection: Removable 6-pin Terminal Block

Mechanical
Casing: IP30 protection, metal case
Dimensions (W x H x D): 80.5 x 135 x 105 mm
3.16 x 5.31 x 4.13 in.
Weight: 1140 g
Installation: DIN-Rail, Wall Mounting

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: UL60950, UL 508, CSA C22.2 No. 60950, EN60950 (pending)
Hazardous location:
UL/cUL Class 1, Division 2, Groups A, B, C and D
ATEX Class 1, Zone 2, EEx nC IIC (pending)
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
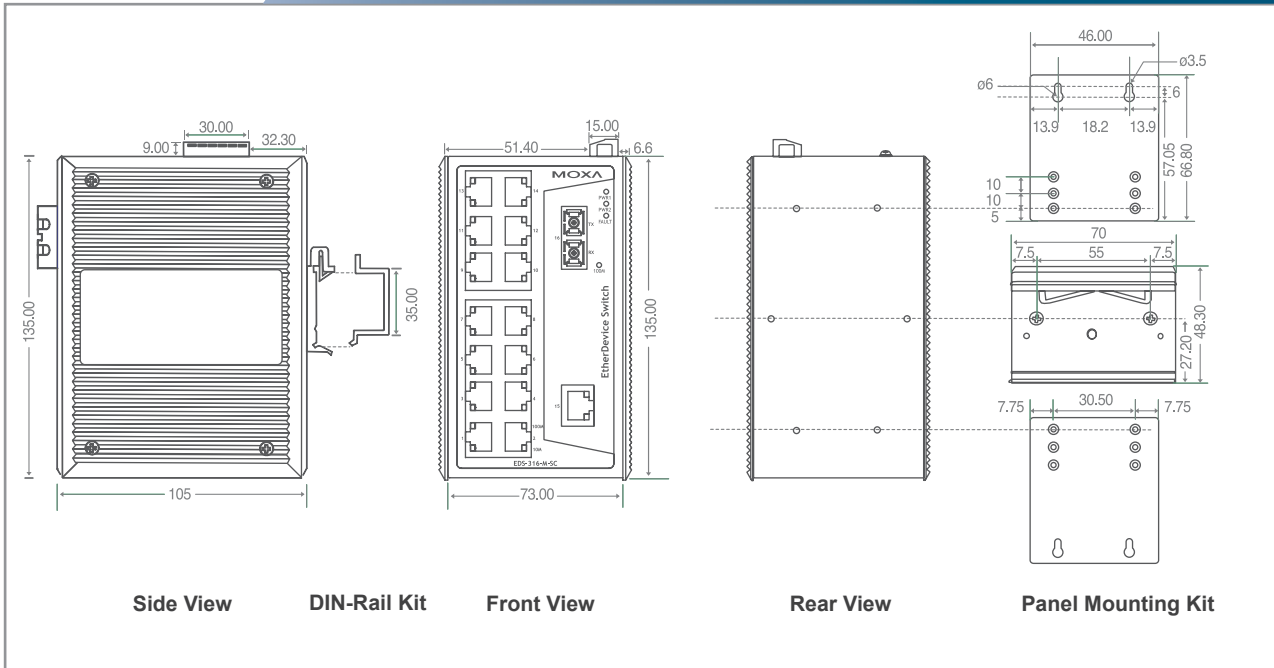EN61000-4-6 (CS), level 3
Shock: IEC60068-2-27
Freefall: IEC60068-2-32
Vibration: IEC60068-2-6

Warranty
5 years

Dimensions (unit = mm)

Side View   **DIN-Rail Kit**   **Front View**   **Rear View**   **Panel Mounting Kit**

Ordering Information

EDS-316-AA-BB-CC-E

	Fiber Port	FO Connector	Single Mode Distance	Operating Temperature
Ordering Code Definition	**M:** One Multi Mode **S:** One Single Mode **MM:** Two Multi Mode **SS:** Two Single Mode **MM:** One Multi Mode, **MS:** One Single Mode	**SC:** SC Connector **ST:** ST Connector	**40/80:** One 40 km port plus one 80 km port	**T:** Operating Temp. -40 to 75˚C * Standard Models: 0 to 60˚C
Available Models	**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
	* For detailed information, please check the above specifications.			
Optional Accessories	• **DR-4524:** 45W/2A DIN-Rail 24 VDC Power Supply, 85 to 264 VAC input • **DR-75-24:** 75W/3.2A DIN-Rail 24 VDC Power Supply, 85 to 264 VAC input • **DR-120-24:** 120W/5A DIN-Rail 24 VDC Power Supply, 88 to 132 VAC/176 to 264 VAC input by switch • **WK-46:** Wall Mounting Kit			