EDS-305 Series

5-port unmanaged Ethernet switches

Features and Benefits

- Relay output warning for power failure and port break alarm

- Broadcast storm protection

- -40 to 75°C wide operating temperature range (-T models)

Certifications

Introduction

The EDS-305 Ethernet switches provide an economical solution for your industrial Ethernet connections. These 5-port switches come with a built-in relay warning function that alerts network engineers when power failures or port breaks occur. In addition, the switches are designed for harsh industrial environments, such as the hazardous locations defined by the Class I Div. 2, ATEX Zone 2, and IECEx standards.

The switches comply with FCC, UL, and CE standards and support either a standard operating temperature range of 0 to 60°C or a wide operating temperature range of -40 to 75°C. All switches in the series undergo a 100% burn-in test to ensure that they fulfill the special needs of industrial automation control applications. The EDS-305 switches can be installed easily on a DIN rail or in a distribution box.

Specifications

Input/Output Interface

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

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	EDS-305/305-T models: 5 EDS-305-M-SC/M-ST/S-SC/S-SC-80 models: 4 All models support: Auto negotiation speed Full/Half-duplex mode Auto MDI/MDI-X connection
100BaseFX Ports (multi-mode SC connector)	EDS-305-M-SC/M-SC-T: 1
100BaseFX Ports (multi-mode ST connector)	EDS-305-M-ST/M-ST-T: 1
100BaseFX Ports (single-mode SC connector)	EDS-305-S-SC/S-SC-T: 1
100BaseFX Ports (single-mode SC connector, 80 km)	EDS-305-S-SC-80: 1

Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for flow control

Optical Fiber

		100BaseFX			
		Multi-Mode			
Fiber Cable Type		OM1	OM2	OM3	OM4
Typical Distance		4 km	4 km	4 km	4 km
Wavelength	TX Range (nm)	1260 to 1360			
	RX Range (nm)	1100 to 1600			
Optical Power	TX Range (dBm)	-10 to -20			
	RX Range (dBm)	-3 to -32			
	Link Budget (dB)	12			
	Dispersion Penalty (dB)	3	3	3	3

		100BaseFX		
		Multi-Mode	Single-Mode (40 km)	Single-Mode (80 km)
Fiber Cable Type		50/125 µm 800 MHz x km	G.652	G.652
Typical Distance		5 km	40 km	80 km
Wavelength	TX Range (nm)	1260 to 1360	1280 to 1340	1530 to 1570
	RX Range (nm)	1100 to 1600	1100 to 1600	1100 to 1600
Optical Power	TX Range (dBm)	-10 to -20	0 to -5	0 to -5
	RX Range (dBm)	-3 to -32	-3 to -34	-3 to -34
	Link Budget (dB)	12	29	29
	Dispersion Penalty (dB)	3	1	1

Note: When using a single-mode fiber transceiver over short distances, we highly recommend installing an attenuator to prevent damaging the transceiver due to excessive optical power.
Note: To reach the "typical distance" of a fiber transceiver, the Link Budget (dB) should be greater than the combined Dispersion Penalty (dB) and Total Link Loss (dB).

DIP Switch Configuration

Ethernet Interface	Port break alarm

Switch Properties

MAC Table Size	2 K
Packet Buffer Size	768 kbits
Processing Type	Store and Forward

Power Parameters

Connection	1 removable 6-contact terminal block(s)
Input Current	0.2 A (max.)
Input Voltage	12-48 VDC Redundant dual inputs
Operating Voltage	9.6 to 60 VDC
Reverse Polarity Protection	Supported
Overload Current Protection	Supported

Physical Characteristics

Housing	Metal
IP Rating	IP30
Dimensions	53 x 135 x 105 mm (2.09 x 5.32 x 4.13 in)
Weight	790 g (1.75 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)

Environmental Limits

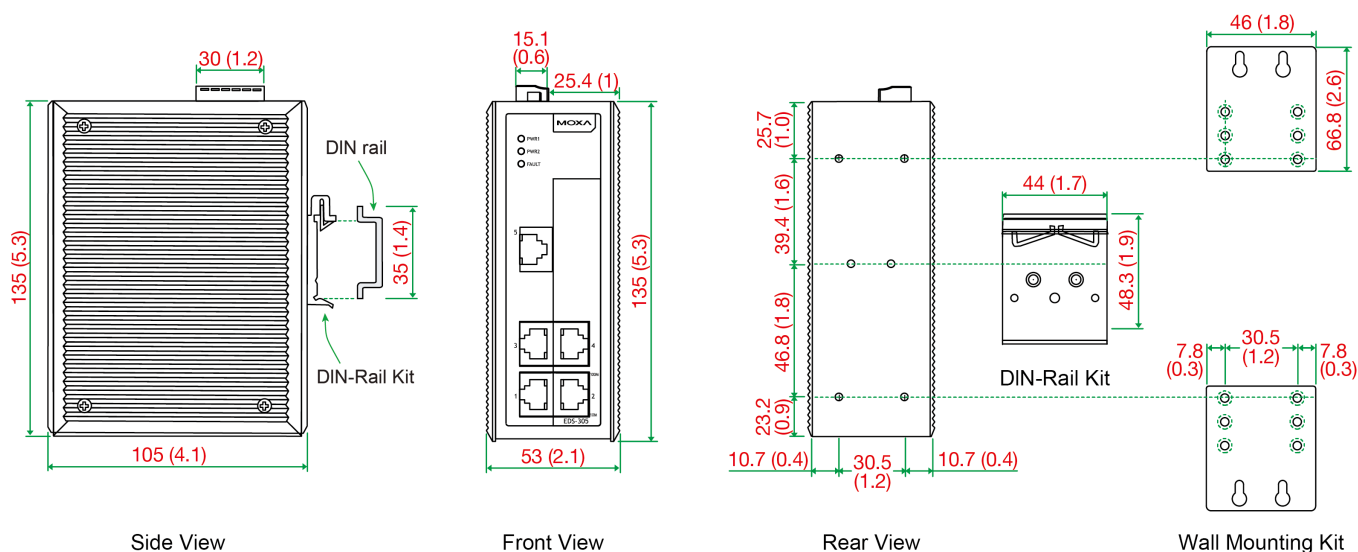|	
Operating Temperature	Standard Models: -10 to 60°C (14 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

Safety	UL 61010-201-1 UL 62368-1 EN 62368-1 IEC 62368-1
EMC	EN 55032/35
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 MHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 3 V IEC 61000-4-8 PFMF
Hazardous Locations	ATEX Class I Division 2 IECEx
Vibration	IEC 60068-2-6
Shock	IEC 60068-2-27

Freefall	IEC 60068-2-32
Maritime	DNV

MTBF

Time	EDS-305 models: 3,821,019 hrs EDS-305-M/S models: 3,327,332 hrs
Standards	Telcordia (Bellcore), GB

Warranty

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

Package Contents

Device	1 x EDS-305 Series switch
Installation Kit	2 x cap, plastic, for RJ45 port 1 x cap, plastic, for SC fiber port (-SC models) 1 x cap, plastic, for ST fiber port (-ST models)
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)

Side View   Front View   Rear View   Wall Mounting Kit

Ordering Information

Model Name	10/100BaseT(X) Ports (RJ45 Connector)	100BaseFX Ports (Multi-mode, SC Connector)	100BaseFX Ports (Multi-mode, ST Connector)	100BaseFX Ports (Single-mode, SC Connector)	Operating Temp.
EDS-305	5	–	–	–	-10 to 60°C
EDS-305-T	5	–	–	–	-40 to 75°C
EDS-305-M-SC	4	1	–	–	-10 to 60°C
EDS-305-M-SC-T	4	1	–	–	-40 to 75°C
EDS-305-M-ST	4	–	1	–	-10 to 60°C
EDS-305-M-ST-T	4	–	1	–	-40 to 75°C

Model Name	10/100BaseT(X) Ports (RJ45 Connector)	100BaseFX Ports (Multi-mode, SC Connector)	100BaseFX Ports (Multi-mode, ST Connector)	100BaseFX Ports (Single-mode, SC Connector)	Operating Temp.
EDS-305-S-SC	4	–	–	1	-10 to 60°C
EDS-305-S-SC-80	4	–	–	1	-10 to 60°C
EDS-305-S-SC-T	4	–	–	1	-40 to 75°C

Accessories (sold separately)

Power Supplies

HDR-60-24	60 W/2.5 A DIN-rail 24 VDC power supply, universal 85 to 264 VAC or 120 to 370 VDC input voltage, -30 to 70°C operating temperature
NDR-120-24	120 W/5.0 A DIN-rail 24 VDC power supply, universal 90 to 264 VAC or 127 to 370 VDC input voltage, -20 to 70°C operating temperature
NDR-120-48	120 W/2.5 A DIN-rail 48 VDC power supply, universal 90 to 264 VAC or 127 to 370 VDC input voltage, -20 to 70°C operating temperature
NDR-240-48	240 W/5.0 A DIN-rail 48 VDC power supply, universal 90 to 264 VAC or 127 to 370 VDC input voltage, -20 to 70°C operating temperature
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

Wall-Mounting Kits

WK-46	Wall-mounting kit, 2 plates, 8 screws, 46.5 x 66.8 x 1 mm

Rack-Mounting Kits

RK-4U	19-inch rack-mounting kit