EDS-205A Series

5-port compact unmanaged Ethernet switches

Features and Benefits

- 10/100BaseT(X) (RJ45 connector), 100BaseFX (multi/single-mode, SC or ST connector)

- Redundant dual 12/24/48 VDC power inputs

- IP30 aluminum housing

- Rugged hardware design well suited for hazardous locations (Class I Div. 2/ ATEX Zone 2), transportation (NEMA TS2/EN 50121-4), and maritime environments (DNV/LR/ABS/NK)

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

- Compliant with PROFINET Conformance Class A[1]

Certifications

Introduction

The EDS-205A Series 5-port industrial Ethernet switches support IEEE 802.3 and IEEE 802.3u/x with 10/100M full/half-duplex, MDI/MDI-X auto-sensing. The EDS-205A Series has 12/24/48 VDC (9.6 to 60 VDC) redundant power inputs that can be connected simultaneously to live DC power sources. These switches have been designed for harsh industrial environments, such as in maritime (DNV/LR/ABS/NK), rail wayside, highway, or mobile applications (EN 50121-4/NEMA TS2), or hazardous locations (Class I Div. 2, ATEX Zone 2, IECEx) that comply with FCC, UL, and CE standards.

The EDS-205A switches are available with a standard operating temperature range from -10 to 60°C, or with a wide operating temperature range from -40 to 75°C. All models are subjected to a 100% burn-in test to ensure that they fulfill the special needs of industrial automation control applications. In addition, the EDS-205A switches have DIP switches for enabling or disabling broadcast storm protection and Quality of Service, providing another level of flexibility for industrial applications.

The EDS-205A Series is also compliant with PROFINET Conformance Class A (CC-A), making these switches suitable for PROFINET networks.

Specifications

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	EDS-205A/205A-T: 5 EDS-205A-M-SC/M-ST/S-SC Series: 4 All models support: Auto negotiation speed Full/half duplex mode Auto MDI/MDI-X connection
100BaseFX Ports (multi-mode SC connector)	EDS-205A-M-SC Series: 1
100BaseFX Ports (multi-mode ST connector)	EDS-205A-M-ST Series: 1
100BaseFX Ports (single-mode SC connector)	EDS-205A-S-SC Series: 1

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1. Only for models with hardware version 3.0.0 or later.

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

Note: When using a 40 km 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).

Switch Properties

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

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Reliable Networks ▲ Sincere Service

Power Parameters

Connection	1 removable 4-contact terminal block(s)
Input Current	0.29 A (max.)
Input Voltage	12/24/48 VDC Redundant dual inputs
Operating Voltage	9.6 to 60 VDC
Overload Current Protection	Supported
Reverse Polarity Protection	Supported

DIP Switch Configuration

Ethernet Interface	Broadcast storm protection Quality of Service (QoS)[2]

Physical Characteristics

Housing	Aluminum
IP Rating	IP30
Dimensions	30 x 115 x 70 mm (1.18 x 4.52 x 2.76 in)
Weight	175 g (0.39 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)

Environmental Limits

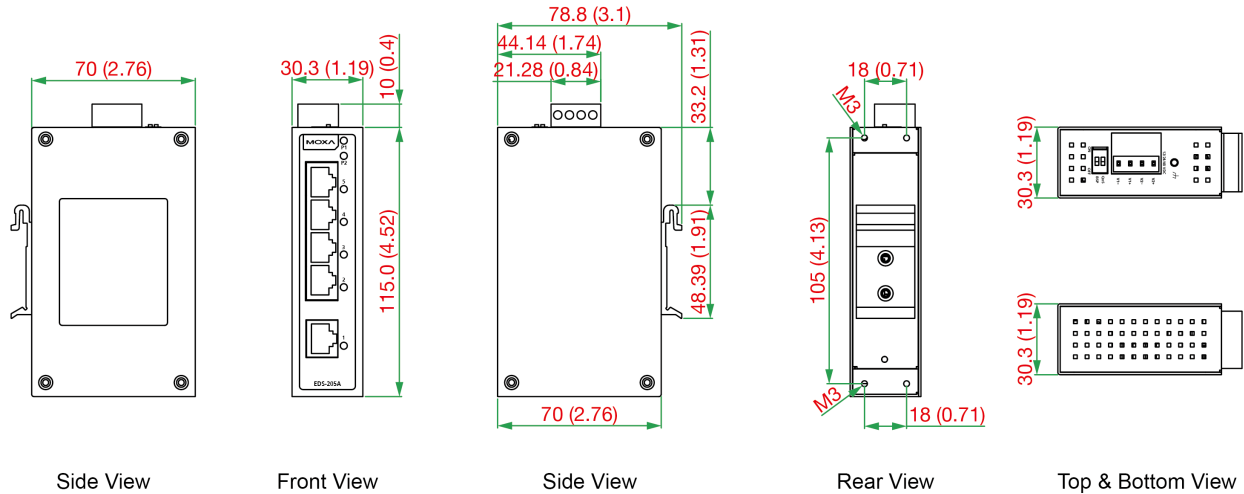|	
Operating Temperature	Standard Models: -10 to 60°C (14 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

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 GHz: 10 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: 10 V IEC 61000-4-8 PFMF
Safety	UL 61010-1 UL 61010-2-201 UL 62368 EN 62368-1
Hazardous Locations	IECEx ATEX Class I Division 2
Maritime	ABS LR NK DNV

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2. Enabling the QoS DIP switch will also enable Multicast Filtering which will block LLDP & PROFINET PTCP-Delay traffic.

Railway	EN 50121-4
Traffic Control	NEMA TS2
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6
Freefall	IEC 60068-2-31

MTBF

Time	EDS-205A models: 3,969,664 hrs EDS-205A-M-SC models: 3,500,324 hrs EDS-205A-S-SC models: 2,797,013 hrs EDS-205A-M-ST models: 3,293,423 hrs
Standards	Telcordia (Bellcore), GB

Warranty

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

Package Contents

Device	1 x EDS-205A Series switch
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)

Side View   Front View   Side View   Rear View   Top & Bottom View

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-205A	5	–	–	–	-10 to 60°C
EDS-205A-T	5	–	–	–	-40 to 75°C
EDS-205A-M-SC	4	1	–	–	-10 to 60°C
EDS-205A-M-SC-T	4	1	–	–	-40 to 75°C
EDS-205A-M-ST	4	–	1	–	-10 to 60°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-205A-M-ST-T	4	–	1	–	-40 to 75°C
EDS-205A-S-SC	4	–	–	1	-10 to 60°C
EDS-205A-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-30	Wall-mounting kit, 2 plates, 4 screws, 30 x 66.8 x 2 mm

Rack-Mounting Kits

RK-4U	19-inch rack-mounting kit