EDS-4009シリーズ

9ポートマネージドイーサネットスイッチ

機能とメリット

- Turbo RingとTurbo Chain（リカバリ時間はスイッチ250台で20 ms未満）[1]、およびRSTP/STPによりネットワークの冗長性を実現
- 柔軟な導入を可能にする広い電源入力範囲
- 狭いスペースにも収まるコンパクトで柔軟な筐体設計
- 簡単で視覚化された産業用ネットワーク管理を行うためのMXstudioに対応
- IEC 62443-4-2セキュリティレベル2認証を取得

認証

製品紹介

EDS-4009シリーズは、9ポートのマネージドファストイーサネットスイッチで、3つの100 M ST/SC光ファイバポートのオプションがあります。

Turbo Ring、Turbo Chain、およびRSTP/STPなどのイーサネット冗長性技術により、システムの信頼性が高まり、ネットワークバックボーンの可用性が向上します。EDS-4009シリーズは、スケーラブルなバックボーンからメリットを得られる、ビデオおよびプロセス監視、ITS、DCSシステムなどの要求の多いアプリケーション向けに特別に設計されています。

IEC 62443-4-2セキュリティレベル2認証を取得

EDS-（G）4000シーリズは、IEC 62443-4-2セキュリティレベル2認証（詳細はhttps://certificates.iecee.org/#/deliverables/CERT/1605016/view をご参照ください）を取得し、安全な産業用ネットワーク設計のコンプライアンス要件を満たすのに役立ちます。

仕様

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	6 Auto negotiation speed Full/Half duplex mode Auto MDI/MDI-X connection
100BaseFX Ports (multi-mode SC connector)	EDS-4009-3MSC-LV/-HV/-T models: 3
100BaseFX Ports (multi-mode ST connector)	EDS-4009-3MST-LV/-HV/-T models: 3
100BaseFX Ports (single-mode SC connector)	EDS-4009-3SSC-LV/-HV/-T models: 3

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1. ポートリンク速度が1ギガビット以上の場合、リカバリ時間は50 ms未満となります。

Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for flow control IEEE 802.3ad for Port Trunk with LACP IEEE 802.1Q for VLAN Tagging IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1p for Class of Service IEEE 802.1X for authentication

Optical Fiber

		100BaseFX		
		Multi-Mode		Single-Mode
Fiber Cable Type		OM1	50/125 µm	G.652
			800 MHz x km	
Typical Distance		4 km	5 km	40 km
Wavelength	Typical (nm)	1300		1310
	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 connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by excessive optical power.
Note: Compute the "typical distance" of a specific fiber transceiver as follows:
Link budget (dB) > dispersion penalty (dB) + total link loss (dB).

Ethernet Software Features

Industrial Protocols	EtherNet/IP Modbus TCP PROFINET IO Device
Management	IPv4/IPv6 Flow control Back Pressure Flow Control DHCP Server/Client ARP RARP LLDP Fiber check Port Mirroring (SPAN, RSPAN) Linkup Delay SMTP SNMP Trap SNMP Inform SNMPv1/v2c/v3 RMON TFTP SFTP HTTP HTTPS Telnet Syslog Private MIB
Filter	GMRP GVRP GARP 802.1Q VLAN IGMP Snooping v1/v2/v3

	IGMP Querier
Redundancy Protocols	STP RSTP Turbo Ring v2 Turbo Chain Ring Coupling Dual-Homing Link Aggregation MRP MSTP
Security	Broadcast storm protection Rate Limit Trust access control Static Port Lock MAC Sticky HTTPS/SSL SSH RADIUS TACACS+ Access control list Login and Password Policy DHCP Snooping
Time Management	SNTP NTP Server/Client NTP Authentication IEEE 1588v2 PTP (hardware-based) Supported power profiles: IEEE 1588 Default 2008, IEC 61850-9-3-2016, IEEE C37.238-2017
Protocols	IPv4/IPv6 TCP/IP UDP ICMP ARP RARP TFTP DNS NTP Client DHCP Server DHCP Client 802.1X QoS HTTPS HTTP Telnet SMTP SNMPv1/v2c/v3 RMON Syslog
MIB	P-BRIDGE MIB Q-BRIDGE MIB IEEE8021-SPANNING-TREE-MIB IEEE8021-PAE-MIB IEEE8023-LAG-MIB LLDP-EXT-DOT1-MIB LLDP-EXT-DOT3-MIB SNMPv2-MIB RMON MIB Groups 1, 2, 3, 9

Switch Properties

MAC Table Size	16 K
Jumbo Frame Size	9.216 KB
Max. No. of VLANs	256
VLAN ID Range	VID 1 to 4094

IGMP Groups	512
Priority Queues	4
Packet Buffer Size	1 MB

LED Interface

LED Indicators	PWR1, PWR2, STATE, FAULT, MSTR/HEAD, CPLR/TAIL, SYNC

Serial Interface

Console Port	RS-232 (TxD, RxD, GND), 8-pin RJ45 (115200, n, 8, 1)

USB Interface

USB Connector	USB Type A (Reserved)

Input/Output Interface

Alarm Contact Channels	1, Relay output with current carrying capacity of 1 A @ 24 VDC
Digital Input Channels	1
Digital Inputs	+13 to +30 V for state 1 -30 to +3 V for state 0 Max. input current: 8 mA
Buttons	Reset button

DIP Switch Configuration

DIP Switches	Turbo Ring, Master, Coupler, Reserve

Power Parameters

Connection	2 removable 4-contact terminal block(s)
Pre-installed Power Module	-LV/-LV-T models: PWR-100–LV -HV/-HV-T models: PWR-105-HV-I
Note	The EDS-4009 Series supports modular power supplies. The model names and power parameters are determined by the installed power module. For example: EDS-4009-T + PWR-100–LV = EDS-4009-LV-T EDS-4009-T + PWR-105-HV-I = EDS-4009-HV-T If you install a different power module, refer to the specifications of the corresponding model. For example, if you replace the power module of the EDS-4009–LV-T with the PWR-105–HV-I, refer to the specifications of the EDS-4009–HV-T.
Input Voltage	-LV/-LV-T models: 12/24/48 VDC, Redundant dual inputs -HV/-HV-T models: 110/220 VDC/VAC, Single input
Operating Voltage	-LV/-LV-T models: 9.6 to 60 VDC -HV/-HV-T models: 88 to 300 VDC, 85 to 264 VAC
Input Current	-LV/-LV-T models: 12-48 VDC, 1.50-0.40 A or 24 VDC, 0.70 A -HV/-HV-T models: 110-220 VAC, 50-60 Hz, 0.30-0.20 A or 110-220 VDC, 0.30-0.20 A
Power Consumption (Max.)	EDS-4009-3MSC-LV(-T) models: 9.51 W EDS-4009-3MSC-HV(-T) models: 12.14 W EDS-4009-3MST-LV(-T) models: 9.51 W EDS-4009-3MST-HV(-T) models: 12.17 W EDS-4009-3SSC-LV(-T) models: 9.51 W EDS-4009-3SSC-HV(-T) models: 12.34 W

Overload Current Protection	Supported
Reverse Polarity Protection	Supported

Physical Characteristics

IP Rating	IP40
Dimensions	EDS-4009-3MSC(-T)/EDS-4009-3SSC(-T) models: 55 x 140 x 120 mm (2.17 x 5.51 x 4.72 in) EDS-4009-3MST(-T) models: 55 x 140 x 132 mm (2.17 x 5.51 x 5.20 in)
Weight	EDS-4009-3MSC(-T) models: 821.5 g (1.81 lb) EDS-4009-3MST(-T) models: 920 g (2.03 lb) EDS-4009-3SSC(-T) models: 932 g (2.05 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)
Housing	Metal

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

Industrial Cybersecurity	IEC 62443-4-2 Security Level 2
Safety	UL 61010-2-201 EN 62368-1 (LVD)
EMC	EN 55032/35 EN 61000-6-2/-6-4
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Maritime	-LV/-LV-T models: DNV, ABS, NK, LR
Vibration	IEC 60068-2-6
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Railway	EN 50121-4
Traffic Control	NEMA TS2
Power Substation	IEC 61850-3 IEEE 1613 Class 1
Hazardous Locations	-LV/-LV-T models: ATEX IECEx Class I Division 2

MTBF

Time	EDS-4009-3MSC-LV/-LV-T models: 972,841 hrs EDS-4009-3MSC-HV/-HV-T models: 482,263 hrs EDS-4009-3MST-LV/-LV-T models: 972,841 hrs EDS-4009-3MST-HV/-HV-T models: 482,263 hrs EDS-4009-3SSC-LV/-LV-T models: 972,841 hrs EDS-4009-3SSC-HV/-HV-T models: 482,263 hrs

Warranty

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

Package Contents

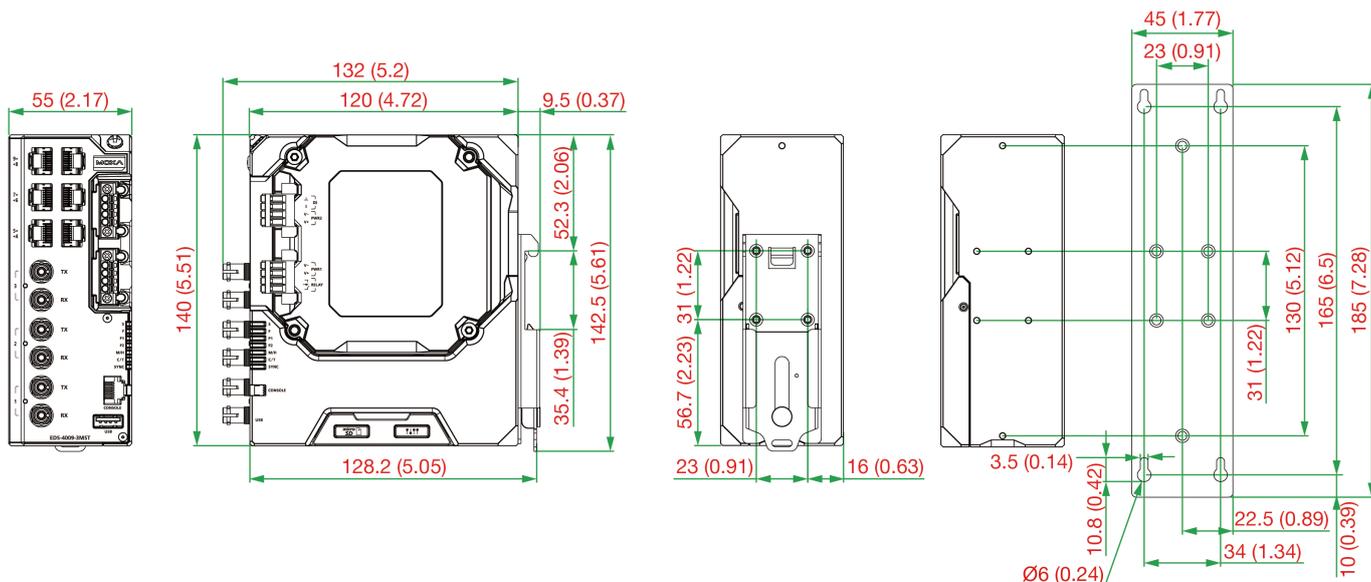|	
Device	1 x EDS-4009 Series switch
Documentation	1 x quick installation guide 1 x product notice, Simplified Chinese 1 x product certificates of quality inspection, Simplified Chinese 1 x warranty card

寸法

EDS-4009-3MSC（-T）、EDS-4009-3SSC（-T）モデル

単位：mm（インチ）
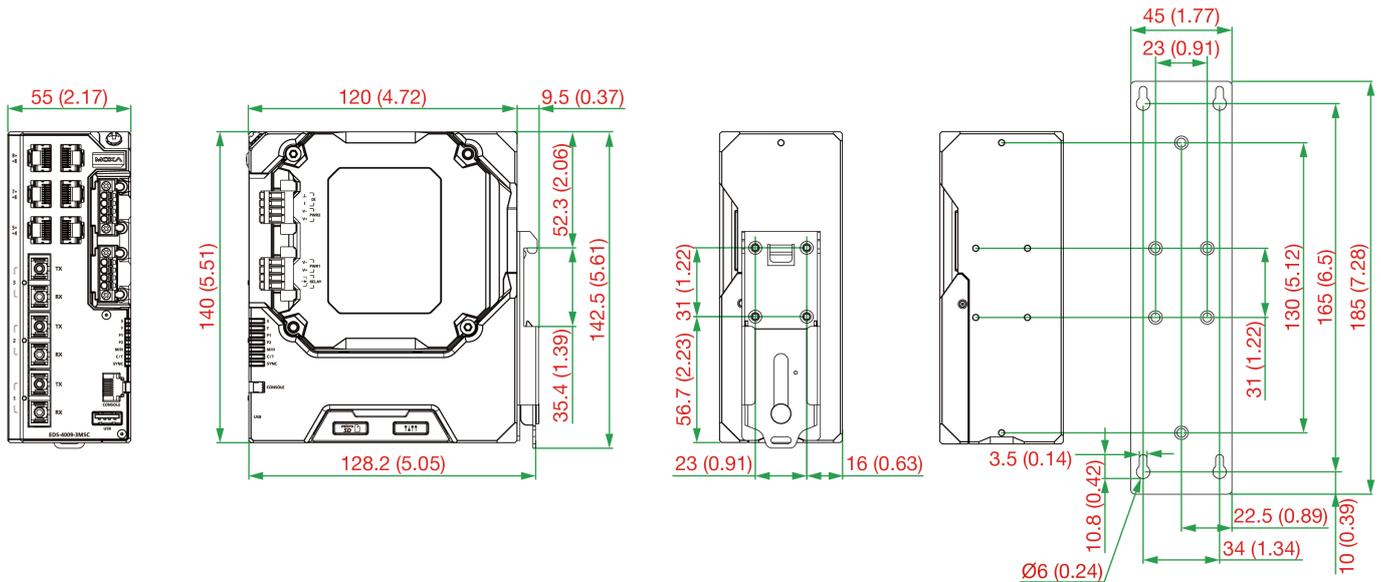
EDS-4009-3MST（-T）モデル

単位: mm（インチ）

注文情報

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 Voltage	Pre-installed Power Module	Operating Temp.
EDS-4009-3MSC-LV	6	3	–	–	9.6 to 60 VDC	PWR-100-LV	-10 to 60°C
EDS-4009-3MSC-LV-T	6	3	–	–	9.6 to 60 VDC	PWR-100-LV	-40 to 75°C
EDS-4009-3MSC-HV	6	3	–	–	88 to 300 VDC, 85 to 264 VAC	PWR-105-HV-I	-10 to 60°C
EDS-4009-3MSC-HV-T	6	3	–	–	88 to 300 VDC, 85 to 264 VAC	PWR-105-HV-I	-40 to 75°C
EDS-4009-3MST-LV	6	–	3	–	9.6 to 60 VDC	PWR-100-LV	-10 to 60°C
EDS-4009-3MST-LV-T	6	–	3	–	9.6 to 60 VDC	PWR-100-LV	-40 to 75°C
EDS-4009-3MST-HV	6	–	3	–	88 to 300 VDC, 85 to 264 VAC	PWR-105-HV-I	-10 to 60°C
EDS-4009-3MST-HV-T	6	–	3	–	88 to 300 VDC, 85 to 264 VAC	PWR-105-HV-I	-40 to 75°C
EDS-4009-3SSC-LV	6	–	–	3	9.6 to 60 VDC	PWR-100-LV	-10 to 60°C
EDS-4009-3SSC-LV-T	6	–	–	3	9.6 to 60 VDC	PWR-100-LV	-40 to 75°C
EDS-4009-3SSC-HV	6	–	–	3	88 to 300 VDC, 85 to 264 VAC	PWR-105-HV-I	-10 to 60°C
EDS-4009-3SSC-HV-T	6	–	–	3	88 to 300 VDC, 85 to 264 VAC	PWR-105-HV-I	-40 to 75°C

アクセサリー（別売）

Storage Kits

ABC-02-USB	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, 0 to 60°C operating temperature
ABC-02-USB-T	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, -40 to 75°C operating temperature
ABC-03-microSD-T	MicroSD-based configuration backup and restoration tool, firmware upgrades, and log file storage tool for managed Ethernet switches and WLAN products, -40 to 85°C operating temperature

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

www.moxa.com/jp