

MDS-G4012-L3シリーズ

12Gポートレイヤ3フルギガビットモジュールマネージドイーサネットスイッチ



機能とメリット

- 複数のLANセグメントを相互接続するレイヤ3ルーティング
- 高い汎用性を実現するマルチインターフェースタイプ4ポートモジュール
- スイッチをシャットダウンせずに楽にモジュールの追加や交換を行える工具不要の設計
- 超コンパクトサイズで、柔軟な設置を行うための複数の取り付けオプションが完備
- 過酷な環境で使用できる堅牢なダイキャスト設計
- 異なるプラットフォームをまたがってシームレスなエクスペリエンスを実現する直感的なHTML5ベースのWebインターフェース

認証



製品紹介

MDS-G4012-L3シリーズモジュラー式スイッチは、4つの組み込みポート、2つのインターフェースモジュール拡張スロット、および2つの電力モジュールスロットを含む最大12ギガビットポートをサポートし、さまざまなアプリケーションで十分な柔軟性を確保します。非常にコンパクトなMDS-G4000-L3シリーズは、進化するネットワーク要件を満たすように設計されていて、インストールやメンテナンスを容易に行えます。ホットスワップ可能なモジュール設計で、スイッチをシャットダウンしたり、ネットワークの操作を中断することなくモジュールの交換や追加を簡単に行えます。

複数のイーサネットモジュール（RJ45、SFP、PoE+）および電源ユニット（24/48 VDC、110/220 VAC/VDC）は、より優れた柔軟性を提供し、異なる動作条件に適合します。そして、イーサネットアグリゲーション/エッジスイッチとして機能するために必要な汎用性と帯域幅のある適合性の高いフルギガビットプラットフォームを提供します。狭いスペースにも収まるコンパクトな設計、複数の取り付け方法、便利な工具不要なモジュールの取り付けといった特徴のあるMDS-G4000-L3シリーズスイッチは、高いスキルのあるエンジニアでなくても展開を容易に行うことができます。複数の業界の認定を保持し、高い耐久性のある筐体を保持しているMDS-G4000-L3シリーズは、変電所、採掘現場、ITS、石油・ガスアプリケーションなどの過酷で危険な環境において高い信頼性で動作することができます。デュアル電源モジュールをサポートしているため高い信頼性や可用性を実現する冗長性を確保でき、LVとHVのパワーモジュールオプションは高い柔軟性をさらに提供しさまざまなアプリケーションに対する電力の要件に対応しています。

レイヤ3ルーティング機能のサポートにより、これらのスイッチが、異なるネットワークをまたがってアプリケーションを展開できるため、大規模な産業用ネットワークに最適です。さらに、MDS-G4000-L3シリーズは、HTML5ベースの使いやすいWebインターフェースがあるため、レスポンスでスムーズなユーザーエクスペリエンスを提供できます。

仕様

Ethernet Interface

Pre-installed Modules	4 embedded Gigabit ports
Module	2 slots for optional 4-port FE/GE modules

Slot Combination	See the LM-7000H module series datasheet for more information
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseX 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 IEEE 802.3af/at for PoE/PoE+ output

Ethernet Software Features

Management	IPv4/IPv6, Flow control, Back Pressure Flow Control, DHCP Server/Client, ARP, RARP, LLDP, Port Mirror, Linkup Delay, SMTP, SNMP Trap, SNMP Inform, SNMPv1/v2c/v3, RMON, TFTP, SFTP, HTTP, HTTPS, Telnet, Syslog, Private MIB, Loopback interface
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
Routing Redundancy	VRRP
Security	Broadcast storm protection, Rate Limit, Trust access control, Static Port Lock, MAC Sticky, HTTPS/SSL, SSH, RADIUS, TACACS+, Login and Password Policy
Time Management	SNTP, NTP Server/Client, NTP Authentication
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
Unicast Routing	OSPF, Static Route
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
Max. No. of VLANs	256
VLAN ID Range	VID 1 to 4094
IGMP Groups	1024
Priority Queues	8
Packet Buffer Size	12 Mbits

Serial Interface

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

USB Connector	USB Type A (Reserved)
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Input/Output Interface

Digital Input Channels	1 (On MGMT Module)
Digital Inputs	+13 to +30 V for state 1 -30 to +3 V for state 0 Max. input current: 8 mA
Alarm Contact Channels	3 (On MGMT, PWR1, PWR2 Module) Relay output with current carrying capacity of 2 A @ 30 VDC

Power Parameters

Input Voltage	with PWR-HV-P48 installed: 110/220 VDC, 110 VAC, 60 Hz, 220 VAC, 50 Hz, PoE: 48 VDC with PWR-LV-P48 installed: 24/48 VDC, PoE: 48 VDC with PWR-HV-NP installed: 110/220 VDC, 110 VAC, 60 Hz, 220 VAC, 50 Hz with PWR-LV-NP installed: 24/48 VDC
Operating Voltage	with PWR-HV-P48 installed: 88 to 300 VDC, 90 to 264 VAC, 47 to 63 Hz, PoE: 46 to 57 VDC with PWR-LV-P48 installed: 18 to 72 VDC (24/48 VDC for hazardous location), PoE: 46 to 57 VDC (48 VDC for hazardous location) with PWR-HV-NP installed: 88 to 300 VDC, 90 to 264 VAC, 47 to 63 Hz with PWR-LV-NP installed: 18 to 72 VDC
Input Current	with PWR-HV-P48 installed: Max. 0.11 A @ 110 VDC Max. 0.06 A @ 220 VDC Max. 0.29 A @ 110 VAC Max. 0.18 A @ 220 VAC with PWR-LV-P48/PWR-LV-NP installed: Max. 0.53 A @ 24 VDC Max. 0.28 A @ 48 VDC
Max. PoE Power Output per Port	36 W
Total PoE Power Budget	Max. 360 W (with one power supply) for total PD consumption at 48 VDC input for PoE systems Max. 360 W (with one power supply) for total PD consumption at 53–57 VDC input for PoE+ systems Max. 720 W (with two power supply) for total PD consumption at 48 VDC input for PoE systems Max. 720 W (with one power supply) for total PD consumption at 53–57 VDC input for PoE+ systems
Overload Current Protection	Supported
Reverse Polarity Protection	Supported

Physical Characteristics

IP Rating	IP40
Dimensions	134 x 115 x 163.25 mm (5.28 x 4.53 x 6.44 in)
Weight	2000 g (4.41 lb)
Installation	DIN-rail mounting, Wall mounting (with optional kit), Rack mounting (with optional kit)

Environmental Limits

Operating Temperature	Standard Temp 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	EN 62368-1, IEC 62368-1, UL 62368-1, IEC 60950-1
EMC	EN 55032/35
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 IEC 61000-4-11: Voltage Dips and Voltage Interruptions
Railway	EN 50121-4
Traffic Control	NEMA TS2
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-31
Vibration	IEC 60068-2-6
Hazardous Locations	Class I Division 2, ATEX
Power Substation	IEEE 1613, IEC 61850-3

MTBF

Time	1,008,160 hrs
Standards	Telcordia SR332

Warranty

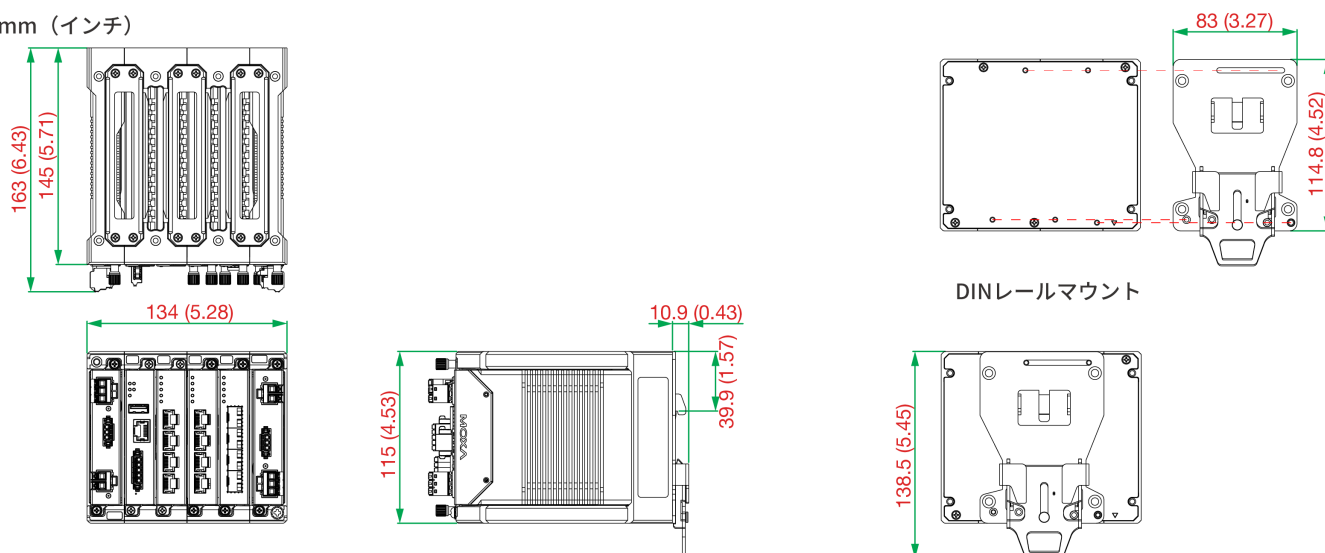
Warranty Period	5 years
Details	See www.moxa.com/jp/warranty

Package Contents

Device	1 x MDS-G4012-L3 Series switch
Cable	1 x RJ45-to-DB9 console cable
Installation Kit	(Pre-installed) 2 x DIN-rail kit 2 x cap, plastic, for RJ45 port
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
Note	This product requires additional modules (sold separately) to function.

寸法

単位：mm（インチ）



注文情報

Model Name	Layer	Total No. of Ports	100/1000BaseSFP Slots	10/100/1000BaseT(X) Ports (RJ45 Connector)	PoE 10/100/1000BaseT(X) Ports (RJ45 Connector)	10/100BaseT(X) Ports (RJ45 Connector)	PoE 10/100BaseT(X) Ports (RJ45 Connector)	Operating Temp.
MDS-G4012-L3	3	12	Up to 8	Up to 12	Up to 8	Up to 8	Up to 8	-10 to 60°C
MDS-G4012-L3-T	3	12	Up to 8	Up to 12	Up to 8	Up to 8	Up to 8	-40 to 75°C

アクセサリ（別売）

LM-7000H Module Series

LM-7000H-4GTX	Gigabit Ethernet module with 4 10/100/1000BaseT(X) ports
LM-7000H-4GPoE	Gigabit Ethernet module with 4 10/100/1000BaseT(X) IEEE 802.3af/at PoE+ ports
LM-7000H-4GSFP	Gigabit Ethernet module with 4 100/1000BaseSFP slots
LM-7000H-4TX	Fast Ethernet module with 4 10/100BaseT(X) ports
LM-7000H-4PoE	Fast Ethernet module with 4 10/100BaseT(X) IEEE 802.3af/at PoE+ ports

Power Modules

PWR-LV-P48	Power supply module (24/48 VDC) with system power input, relay, PoE power input
PWR-HV-P48	Power supply module (110/220 VAC/VDC) with system power input, relay, PoE power input
PWR-LV-NP	Power supply module (24/48 VDC) with system power input, relay
PWR-HV-NP	Power supply module (110/220 VAC/VDC) with system power input, relay

Wall-Mounting Kits

WK-112-01	Wall-mounting kit, 2 plates, 8 screws
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Rack-Mounting Kits

RK-3U-01	Rack-mounting kit, 4 L-shaped plates, and 2 plates with 32 screws for combining two MDS-G4028
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SFP Modules

SFP-1FEMLC-T	SFP module with 1 100Base multi-mode, LC connector for 2/4 km transmission, -40 to 85°C operating temperature
SFP-1FESLC-T	SFP module with 1 100Base single-mode with LC connector for 40 km transmission, -40 to 85°C operating temperature

SFP-1FELLC-T	SFP module with 1 100Base single-mode with LC connector for 80 km transmission, -40 to 85°C operating temperature
SFP-1G10ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G10ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G10BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G10BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1G20ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G20ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G20BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G20BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1G40ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G40ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G40BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G40BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1GSXLC	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, 0 to 60°C operating temperature
SFP-1GSXLC-T	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, -40 to 85°C operating temperature
SFP-1GLSXLC	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, 0 to 60°C operating temperature
SFP-1GLSXLC-T	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, -40 to 85°C operating temperature
SFP-1GLXLC	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature
SFP-1GLXLC-T	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature
SFP-1GLHLC	SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, 0 to 60°C operating temperature
SFP-1GLHLC-T	SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, -40 to 85°C operating temperature
SFP-1GLHXC	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature
SFP-1GLHXC-T	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1GZXLC	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, 0 to 60°C operating temperature
SFP-1GZXLC-T	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, -40 to 85°C operating temperature
SFP-1GEZXC	SFP module with 1 1000BaseEZX port with LC connector for 110 km transmission, 0 to 60°C operating temperature
SFP-1GEZXC-120	SFP module with 1 1000BaseEZX port with LC connector for 120 km transmission, 0 to 60°C operating temperature
SFP-1GTXRJ45-T	SFP module with 1 1000BaseT port with RJ45 connector for 100 m transmission, -40 to 75°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

Software

MXview-50	Industrial network management software with a license for 50 nodes (by IP address)
MXview-100	Industrial network management software with a license for 100 nodes (by IP address)
MXview-250	Industrial network management software with a license for 250 nodes (by IP address)
MXview-500	Industrial network management software with a license for 500 nodes (by IP address)
MXview-1000	Industrial network management software with a license for 1000 nodes (by IP address)
MXview-2000	Industrial network management software with a license for 2000 nodes (by IP address)
MXview Upgrade-50	License expansion of MXview industrial network management software by 50 nodes (by IP address)

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