

# MDS-G4028シリーズ

28Gポートレイヤ2フルギガビットモジュール式マネージド・イーサネット・スイッチ



## 機能とメリット

- ・ 汎用性を向上させるマルチインターフェース型4ポートモジュール
- ・ 障害のあるポートを簡単に交換、ダウンタイムとMTTRを最小限に
- ・ 誤動作のリスクを最小限に抑えるパッシブバックプレーン
- ・ 簡単に設置可能な超小型サイズ
- ・ 過酷な環境でも使用できる堅牢なダイキャスト設計
- ・ ユーザーエクスペリエンスを向上させるHTML5

## 認証



## 製品紹介

MDS-G4028シリーズモジュール式スイッチは、4つの組み込み型ポート、6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つの電源モジュールスロットを含む最大28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シリーズは、日々進化するネットワーク要件を満たすように設計されており、インストールやメンテナンスを簡単に行うことができます。また、ホットスワップ対応モジュール設計により、スイッチをシャットダウンしたりネットワークの動作を中断したりすることなくモジュールの変更や追加を簡単に行うことができます。

マルチ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）を装備しており、高い柔軟性でさまざまな動作条件に対応可能となったことで、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を備えた、適応性の高いフルギガビットプラットフォームを実現することができます。MDS-G4000シリーズスイッチは、狭小スペースにも収納できるコンパクトな設計、複数の取り付け方法、および工具不要のモジュール取り付けを特長としており、専門的なエンジニアでなくても多用途で簡単な導入が可能です。複数の業界認証および耐久性に優れたハウジングを備えたMDS-G4000シリーズは、変電所、採鉱現場、ITS、石油/ガスアプリケーションなどの過酷で危険な環境でも確実に動作できます。高い信頼性と可用性を実現する冗長性をもたらすデュアル電源モジュール、多様なアプリケーションの電源要件に対応するための更なる柔軟性をもつLV/HV電源モジュールオプションにも対応しています。

また、MDS-G4000シリーズは、HTML5ベースの使いやすいWebインターフェースを搭載しており、さまざまなプラットフォームやブラウザで応答性に優れたスムーズなユーザーエクスペリエンスを提供します。

## 仕様

### Ethernet Interface

Pre-installed Modules	4 embedded Gigabit ports
Module	6 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

## Ethernet Software Features

Filter	GMRP, GVRP, GARP, 802.1Q VLAN, IGMP Snooping v1/v2/v3, IGMP Querier
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
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
Redundancy Protocols	STP, RSTP, Turbo Ring v2, Turbo Chain, Ring Coupling, Dual-Homing, Link Aggregation
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

## 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	Isolated redundant power module  with PWR-LV-P48 installed: 24/48 VDC for the switch system 48 VDC for PoE system (53 to 57 VDC is recommended for PoE+ devices)  with PWR-HV-P48 installed: 110/220 VDC/VAC for the switch system 48 VDC for PoE system (53 to 57 VDC is recommended for PoE+ devices)
Operating Voltage	with PWR-LV-P48 installed: 18 to 72 VDC for the switch system 46 to 57 VDC for PoE systems

	with PWR-HV-P48 installed: 88 to 300 VDC, 90 to 264 VAC for the switch system 46 to 57 VDC for PoE systems
Input Current	with PWR-LV-P48 installed: PWR input current (switch system) Max. 0.53 A @ 24 VDC Max. 0.28A @ 48 VDC  with PWR-HV-P48 installed: PWR input current (switch system) Max. 0.11 A @ 110 VDC Max. 0.06 A @ 220 VDC Max. 0.29 A @ 110 VAC Max. 0.18 A @ 220 VAC
Overload Current Protection	Supported
Reverse Polarity Protection	Supported

### Physical Characteristics

IP Rating	IP40
Dimensions	218 x 115 x 163.25 mm (8.59 x 4.53 x 6.44 in)
Weight	2840 g (6.27 lb)
Installation	DIN-rail mounting, Wall mounting (with optional kit), Rack mounting (with optional kit)

### Environmental Limits

Operating Temperature	Standard Temperature: -10 to 60°C (-14 to 140°F) Wide Temperature: -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: 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
Safety	EN 62368-1
Railway	EN 50121-4
Traffic Control	NEMA TS2
Vibration	IEC 60068-2-6
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-31

## MTBF

Time	966,801 hrs
Standards	Telcordia SR332

## Warranty

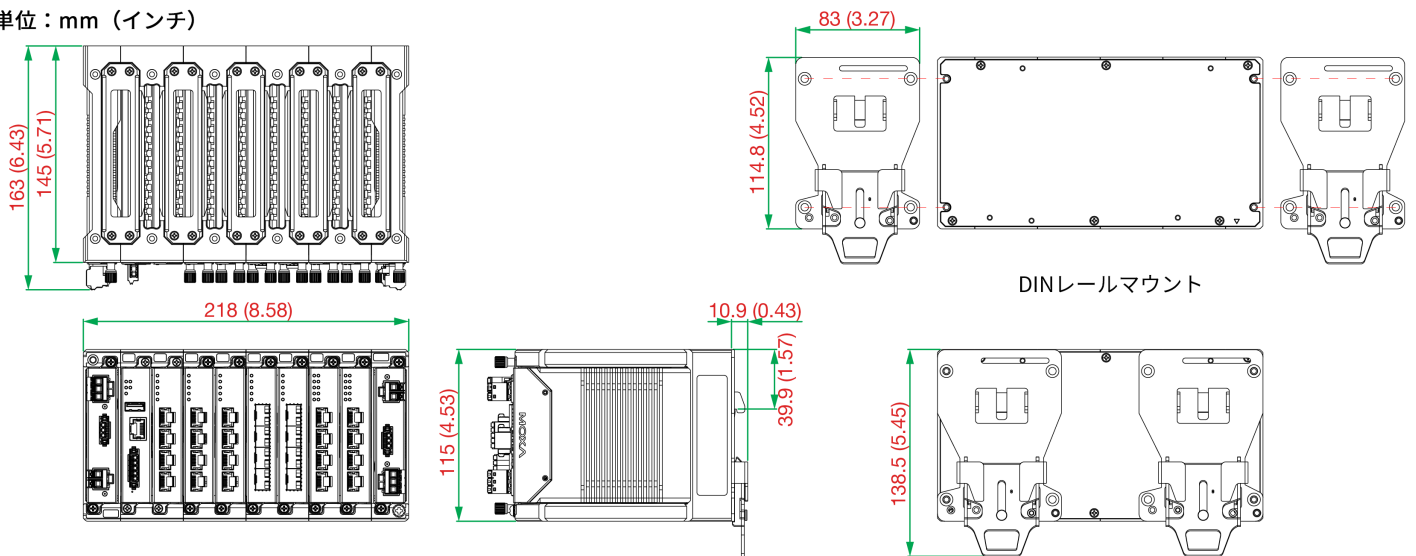
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/jp/warranty">www.moxa.com/jp/warranty</a>

## Package Contents

Device	1 x MDS-G4028 Series switch
Cable	1 x RJ45-to-DB9 console cable
Installation Kit	Pre-install 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	100/1000Base SFP 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-G4028	2	28	Up to 24	Up to 28	Up to 24	Up to 24	Up to 24	-10 to 60°C
MDS-G4028-T	2	28	Up to 24	Up to 28	Up to 24	Up to 24	Up to 24	-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

### Wall-Mounting Kits

WK-112-01	Wall-mounting kit, 2 plates, 8 screws
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### 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 with LC connector for 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-1GLHXLC	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature
SFP-1GLHXLC-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-1GEZLC	SFP module with 1 1000BaseEZ port with LC connector for 110 km transmission, 0 to 60°C operating temperature
SFP-1GEZLC-120	SFP module with 1 1000BaseEZ 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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