

# MDS-G4028-L3-4XGS 系列

24 GbE + 4 10GbE 連接埠 Layer 3 全 Gigabit 模組化網管型乙太網路交換器



## 特色與優點

- Layer 3 路由互連多個 LAN 區段
- 提供更多彈性的多重介面類型 4 埠模組
- 最多 24 個 Gigabit 乙太網路連接埠或 SFP 插槽以及 4 個嵌入式 10G 乙太網路連接埠
- 免工具設計，不需要關閉交換器即可輕鬆新增或更換模組
- 彈性安裝的超輕巧尺寸和多種安裝選項
- 能夠盡可能減少維護工作的無源背板
- 適合嚴苛環境的堅固壓鑄設計
- 採用 HTML5 的直覺式 Web 介面，可提供跨越不同平台的無縫體驗

## 認證



## 簡介

MDS-G4028-L3-4XGS 系列模組化交換器支援 4 個 10GbE + 24 個 Gigabit 連接埠，包括 4 個嵌入式連接埠、6 個介面模組擴充插槽和 2 個電源模組插槽，確保適用多種應用的彈性。極度輕巧的 MDS-G4028-L3-4XGS 系列能夠滿足不斷變化的網路需求，確保輕鬆安裝和維護，並採用熱插拔模組設計，因此您能夠輕鬆變更或新增模組，完全不需要關閉交換器或中斷網路運作。

多個乙太網路模組 (RJ45 和 SFP) 和電源單元 (24/48 VDC 和 110/220 VAC/VDC) 展現更大的彈性以及對不同操作條件的適用性，提供適應性全 Gigabit 平台，這個平台能夠提供乙太網路聚集/邊緣交換器所需的多功能性和頻寬。MDS-G4028-L3-4XGS 系列交換器採用適合狹小空間的輕巧型設計、多種安裝方法和方便的免工具模組安裝，不需要高技能工程師即可進行多功能且輕鬆的部署。藉由多項產業認證和高度耐用的外殼，MDS-G4028-L3-4XGS 系列可以在變電站、採礦場、ITS 以及石油和天然氣應用等嚴苛和危險的環境中可靠運作。對雙 LV 或 HV 電源模組的支援為高可靠性和可用性提供備援，而且也提供適應不同應用的電源要求所需的彈性。

對 Layer 3 路由功能的支援促使這些交換器能夠進行跨越不同網路的應用程式部署，因此成為大型工業網路的理想選擇。此外，MDS-G4028-L3-4XGS 系列具有採用 HTML5 的易用型 Web 介面，可以跨越不同平台和瀏覽器提供有回應、流暢的使用者體驗。

## 規格

### Ethernet Interface

Pre-installed Modules	4 embedded 10Gigabit ports
Module	6 slots for optional 4-port FE/GE modules

Slot Combination	<p>See the LM-7000H module series datasheet for more information.</p> <p>Note: The required power module depends on the choice of LM-7000H module. Refer to the following power/module combination requirements.</p> <p>LM-7000H non-PoE modules: Any power module</p> <p>LM-7000H PoE modules: PWR-HV-P48-A, PWR-LV-P48-A only</p>
Standards	<p>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</p>

### 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
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, Loop Protection, MSTP
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, Secure Boot, MAC Authentication Bypass, Access control list
Time Management	SNTP, IEEE 1588v2 PTP (hardware-based), 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
Power Substation	MMS

### 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
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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-A installed: 110/220 VDC, 110 VAC, 60 HZ, 220 VAC, 50 Hz, PoE: 48 VDC  With PWR-LV-P48-A 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-A installed: 88 to 300 VDC, 90 to 264 VAC, 47 to 63 Hz, PoE: 46 to 57 VDC  With PWR-LV-P48-A installed: 18 to 72 VDC, PoE: 46 to 57 VDC  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-A/PWR-HV-NP 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-A/PWR-LV-NP installed: Max. 0.53 A @ 24 VDC Max. 0.28 A @ 48 VDC
Overload Current Protection	Supported
Reverse Polarity Protection	Supported
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 to 57 VDC input for PoE+ systems  Max. 720 W (with two power supplies) for total PD consumption at 48 VDC input for PoE systems  Max. 720 W (with two power supplies) for total PD consumption at 53 to 57 VDC input for PoE+ systems

## Physical Characteristics

IP Rating	IP40
Dimensions	281 x 115 x 163.25 mm (11.06 x 4.53 x 6.43 in) 296 x 115 x 163.25 mm (11.65 x 4.53 x 6.43 in) with dual PWR-HV-P48-A/PWR-LV-P48-A power modules installed
Weight	3,790 g (8.36 lb)
Installation	DIN-rail mounting, Wall mounting (with optional kit), Rack mounting (with optional kit)

## Environmental Limits

Operating 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

Safety	EN 62368-1, IEC 62368-1, UL 62368-1, IEC 60950-1, EN 61010-2-201, UL 61010-2-201
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 IEC 61000-4-11
Railway	EN 50121-4
Traffic Control	NEMA TS2
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-31
Vibration	IEC 60068-2-6
Power Substation	IEC 61850-3, IEEE 1613

## MTBF

Time	794,073 hrs
Standards	Telcordia SR332

## Warranty

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

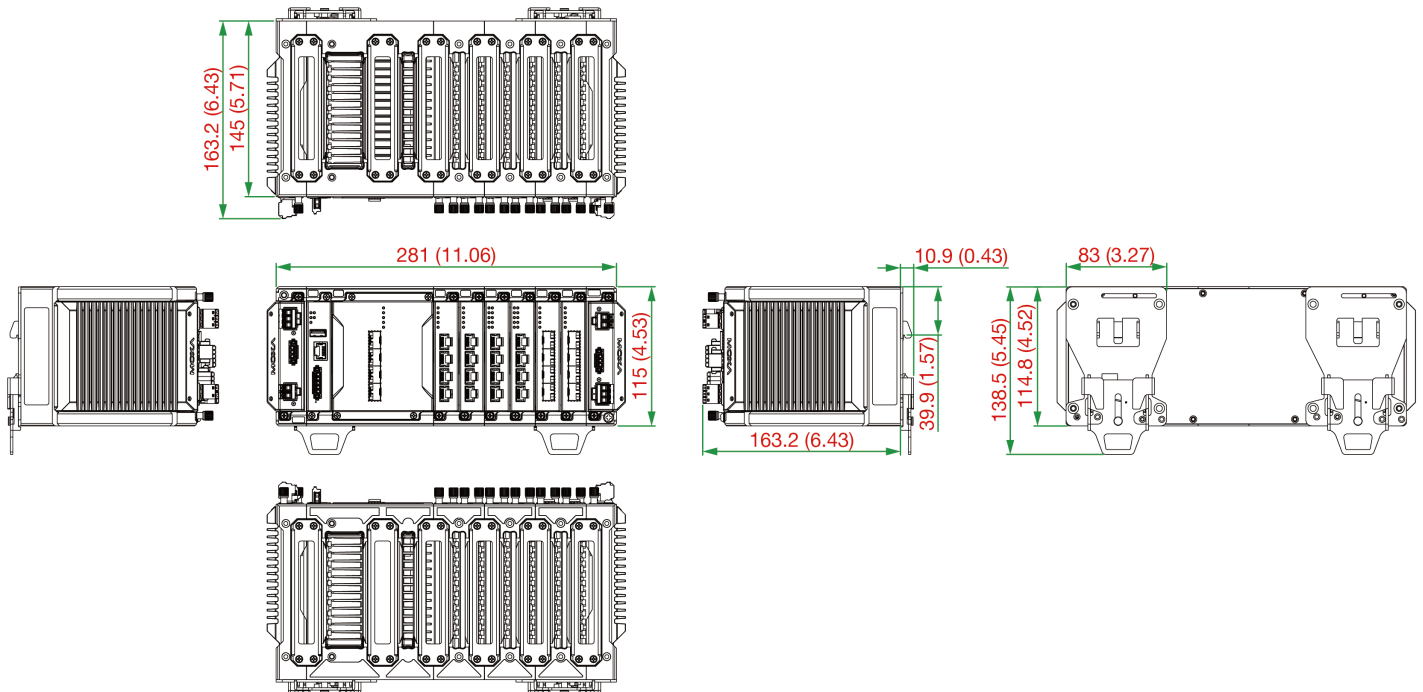
## Package Contents

Device	1 x MDS-G4028-L3-4XGS Series switch
Installation Kit	Preinstalled, 2 x DIN-rail kit 4 x cap, plastic, for SFP+ slots

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.

## 尺寸

單位：公釐 (英吋)



## 訂購資訊

Model Name	Layer	Total No. of Ports	10G SFP+ Slots	100/1000Base SFP Slots	10/100/1000BaseT(X) Ports RJ45 Connector	10/100BaseT(X) Ports RJ45 Connector	Operating Temp.
MDS-G4028-L3-4XGS-T	3	28	4	Up to 24	Up to 24	Up to 24	-40 to 75°C

## 配件 (另購)

### 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-A	24/48 VDC power supply module with system power, relay, PoE power input, advanced heat sink
PWR-HV-P48-A	110/220 VAC/VDC power supply module with system power, relay, PoE power input, advanced heat sink
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-02	Rack-mounting kit with 4 L-shaped plates for the MDS-G4000 and MDS-G4000-4XGS Series
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## SFP Modules

SFP-10GERLC-T	SFP+ module with 1 10GBase-ER port, LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-10GLRLC-T	SFP+ module with 1 10GBase-LR port, LC connector for 10 km transmission, -40 to 85°C operating temperature
SFP-10GSRLC-T	SFP+ module with 1 10GBase-SR port, LC connector for 33m/82m/300m/400m transmission, -40 to 85°C operating temperature
SFP-10GZRLC-T	SFP+ module with 1 10GBase-ZR port, LC connector for 80 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-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-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-1GEZXLC	SFP module with 1 1000BaseEZXC port with LC connector for 110 km transmission, 0 to 60°C operating temperature
SFP-1GEZXLC-120	SFP module with 1 1000BaseEZXC port with LC connector for 120 km transmission, 0 to 60°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-1GLHXLC-T	SFP module with 1 1000BaseLHX port with LC connector for 40 km 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-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-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-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	MXview license for 50 nodes
MXview-100	MXview license for 100 nodes
MXview-250	MXview license for 250 nodes
MXview-500	MXview license for 500 nodes
MXview-1000	MXview license for 1000 nodes
MXview-2000	MXview license for 2000 nodes
MXview Upgrade-50	MXview license expansion for 50 nodes

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