

RKS-G4028 系列

28G 埠 (具有 802.3bt PoE 選項) 全 Gigabit 模組化網管型乙太網路交換器



特色與優點

- 滿足從高速乙太網路到全 Gigabit 工業網路 (最多 28 個 Gigabit 連接埠) 的廣泛需求
- 彈性連接器類型組合的模組化介面
- 支援 IEEE 802.3bt PoE，每個連接埠的輸出功率高達 90 W
- 符合 IEC 61850-3 和 IEEE 1613 的高 EMC 抗擾度
- 高精度時間同步的硬體型 IEEE 1588 PTP
- Turbo Ring 和 Turbo Chain (對於 250 台交換器，斷線復連時間小於 20 ms) 而且 STP/RSTP/MSTP 適用於網路備援
- -40°C 至 75°C 操作溫度範圍
- 支援 MXstudio，輕鬆實現可視化的工業網路管理
- 根據 IEC 62443-4-1 開發並符合 IEC 62443-4-2 工業網路安全標準

認證



簡介

RKS-G4028 系列能夠滿足工業和企業任務關鍵型應用的嚴格要求，例如變電站自動化系統 (IEC 61850-3、IEEE 1613)、鐵路應用 (EN 50121-4) 和工廠自動化系統。RKS-G4028 系列的 Gigabit 和高速乙太網路骨幹、環網備援以及 24 VDC、48 VDC 或 110/220 VDC/VAC 雙隔離式備援電源供應器可提高通訊可靠性，並節省佈線成本。

RKS-G4028 系列的模組化設計也可簡化網路規劃，並且可安裝最多 28 個有各種連接器類型的 Gigabit 連接埠，藉以提供更大的彈性。

附加特色與優點

- 跨網絡移動資料和資訊的 Layer 3 交換功能 (僅限 L3 型號)
- 網路時間同步的 IEEE 1588v2 PTP (精確時間通訊協定)
- 命令列介面 (CLI) 快速設定主要網管功能
- DHCP Option 82 適用於以不同原則指派 IP 位址
- IGMP snooping 和 GMRP，用於過濾 multicast 流量
- 可基於連接埠實現 VLAN、IEEE 802.1Q VLAN 以及 GVRP，以簡化網路規劃
- QoS (IEEE 802.1p/1Q 和 TOS/DiffServ) 提高資料傳送穩定性
- IEEE 802.3ad、LACP 提供最佳化頻寬使用率
- 線路切換快速恢復
- 支援 TACACS+、IEEE 802.1X、SNMPv3、HTTPS 和 SSH，強化網路安全
- SNMPv1/v2c/v3，支援不同層級的網路管理
- RMON 提供主動且有效率的網路監控
- 頻寬管理藉由「鎖定連接埠」限制對授權的 MAC 位址進行的存取，藉以防止不可預測的網路狀態
- Port mirroring 可用於除錯
- 發生例外狀況時透過電子郵件和繼電器輸出自動發出警告
- 自動恢復連線設備的 IP 位址
- 可透過網頁瀏覽器、Telnet/序列主控台、CLI、Windows 工具程式，以及 ABC-02-USB 自動備份設定程式進行設定

規格

Input/Output Interface

Alarm Contact Channels

1 relay output with current carrying capacity of 2 A @ 24 VDC

1. 如果連接埠連結速度為 1 Gigabit 或更高，斷線復連時間小於 50 ms，

Ethernet Interface

10/100/1000BaseT(X) Ports (RJ45 connector)	RKS-G4028-4GT models: 4 RKS-G4028-L3-4GT models: 4
100/1000BaseSFP Slots	RKS-G4028-4GS models: 4 RKS-G4028-L3-4GS models: 4 RKS-G4028-PoE-4GS models: 4 RKS-G4028-L3-PoE-4GS models: 4
Module	<p>There are 3 module slots on the switch. Users can select different types of modules to insert into the switch. The modules that can be selected include 8-port/6-port modules with 10/100/1000BaseT(X), 10/100BaseT(X), 100/1000BaseSFP, or 100BaseFX (SC/ST connector) interfaces.</p> <p>Refer to Expansion Modules in the Accessories section for a full list of supported interface modules.</p>
Standards	<p>IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1X for authentication IEEE 802.3 for 10BaseT IEEE 802.3ab for 1000BaseT(X) IEEE 802.3ad for Port Trunk with LACP IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for flow control IEEE 802.3z for 1000BaseSX/LX/LHX/ZX IEEE 802.3bt for Power over Ethernet</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, 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	L3 models: VRRP
Security	Broadcast storm protection, Rate Limit, Access control list, Static port lock, Sticky MAC, HTTPS/SSL, SSH, RADIUS, TACACS+, Login and password policy, Secure boot, MAC authentication bypass, Trust access control
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	L3 models: 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

IGMP Groups	2048
Jumbo Frame Size	9.6 KB
MAC Table Size	16 K
Max. No. of VLANs	256

Packet Buffer Size	1.5 Mbits
Priority Queues	8
VLAN ID Range	VID 1 to 4094

USB Interface

Storage Port	USB Type A
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MicroSD Interface

Storage Port	MicroSD card
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Serial Interface

Console Port	RS-232 (RJ45)
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Power Parameters

Total PoE Power Budget	PoE models: 300 W
Max. PoE Power Output per Port	PoE models: IEEE 802.3af: 15.4 W IEEE 802.3at: 30 W IEEE 802.3bt: 90 W
Input Voltage	RKS-G4028-LV models: 24/48 VDC RKS-G4028-2LV models: 24/48 VDC (redundant dual inputs) RKS-G4028-HV models: 110/220 VAC, 110/220 VDC RKS-G4028-2HV models: 110/220 VAC, 110/220 VDC (redundant dual inputs) PoE models: 48 VDC (for the PoE system)
Operating Voltage	RKS-G4028-LV/2LV models: 18 to 72 VDC RKS-G4028-HV/2HV models: 88 to 300 VDC, 85 to 264 VAC PoE models: 46 to 57 VDC (for the PoE system)
Overload Current Protection	Supported
Reverse Polarity Protection	Supported
Input Current	RKS-G4028-LV/2LV models: Max. 2.53 A @ 24 VDC Max. 1.25 A @ 48 VDC RKS-G4028-HV/2HV models: Max. 0.55 A @ 110 VDC Max. 0.29 A @ 220 VDC Max. 1.01 A @ 110 VAC Max. 0.62 A @ 220 VAC EPS (PoE models only): Max. 7.50 A @ 48 VDC

Physical Characteristics

IP Rating	IP30
Dimensions	440 x 44 x 300 mm (17.32 x 1.37 x 11.81 in)
Weight	RKS-G4028-LV/HV models: 4900 g (10.80 lb) RKS-G4028-2LV/2HV models: 5200 g (11.46 lb) RKS-G4028-PoE-LV/HV models: 5000 g (11.02 lb) RKS-G4028-PoE-2LV/2HV models: 5300 g (11.68 lb)
Installation	Rack mounting

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, UL 62368-1, UL 61010
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: 35 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 DIPs
Power Substation	IEC 61850-3, IEEE 1613
Railway	EN 50121-4
Freefall	IEC 60068-2-32
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6

MTBF

Time	RKS-G4028-4GT-HV models: 572,888 hours RKS-G4028-4GT-2HV models: 518,894 hours RKS-G4028-4GS-HV models: 529,925 hours RKS-G4028-4GS-2HV models: 483,436 hours RKS-G4028-4GT-LV models: 548,589 hours RKS-G4028-4GT-2LV models: 479,574 hours RKS-G4028-4GS-LV models: 508,639 hours RKS-G4028-4GS-2LV models: 449,160 hours RKS-G4028-PoE-4GS-HV models: 508,190 hours RKS-G4028-PoE-4GS-2HV models: 465,282 hours RKS-G4028-PoE-4GS-LV models: 488,598 hours RKS-G4028-PoE-4GS-2LV models: 433,472 hours
Standards	Telcordia (Bellcore), GB

Warranty

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

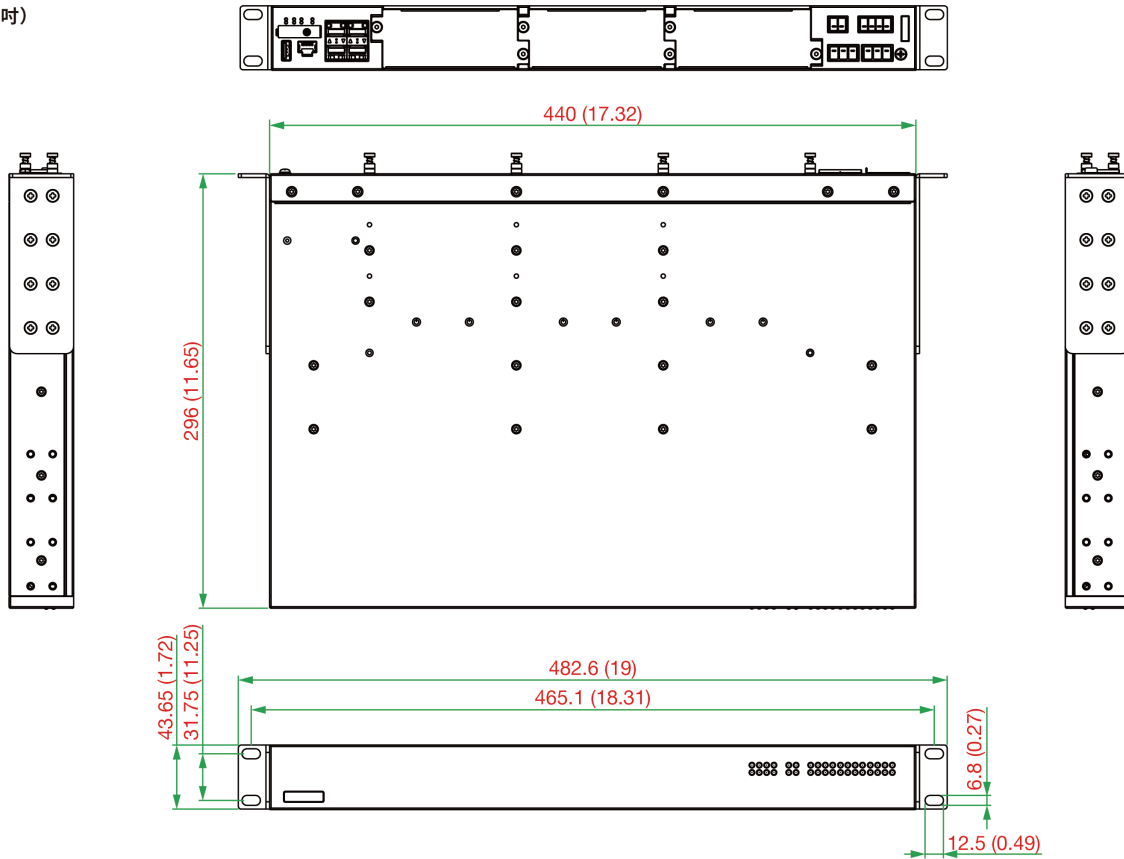
Package Contents

Device	1 x RKS-G4028 Series switch
Installation Kit	2 x rack-mounting ear 4 x protective caps for unused SFP ports (for RKS-G4028-GS models only) 8 x round stickers for module screws

Documentation	1 x quick installation guide 1 x warranty card
Note	<ol style="list-style-type: none"> 1. Only the RKS-G4028-PoE Series and RKS-G4028-L3-PoE models support PoE functionality with RM-G4000-8GPoE and/or RM-G4000-8PoE modules. 2. Power over Ethernet requires the 48 VDC external power supply (46 to 57 VDC). 3. The 48 VDC external power supply, SFP modules, and modules from the RM-G4000 Module Series need to be purchased separately for use with this product.

尺寸

單位：公釐（英吋）



訂購資訊

Model Name	Max. No. of Ports	PoE Support	L3 Functionality	Input Voltage	Redundant Dual Input	External Power Supply	Operating Temp.
RKS-G4028-4GT-HVT	28	-	-	110/220 VAC/ VDC	-	-	-40 to 75°C
RKS-G4028-4GT-2HV-T	28	-	-	110/220 VAC/ VDC	P	-	-40 to 75°C
RKS-G4028-4GS-HV-T	28	-	-	110/220 VAC/ VDC	-	-	-40 to 75°C
RKS-G4028-4GS-2HV-T	28	-	-	110/220 VAC/ VDC	P	-	-40 to 75°C
RKS-G4028-4GT-LV-T	28	-	-	24/48 VDC	-	-	-40 to 75°C
RKS-G4028-4GT-2LV-T	28	-	-	24/48 VDC	P	-	-40 to 75°C
RKS-G4028-4GS-LVT	28	-	-	24/48 VDC	-	-	-40 to 75°C
RKS-G4028-4GS-2LV-T	28	-	-	24/48 VDC	P	-	-40 to 75°C
RKS-G4028-L3-4GT-HV-T	28	-	P	110/220 VAC/ VDC	-	-	-40 to 75°C

Model Name	Max. No. of Ports	PoE Support	L3 Functionality	Input Voltage	Redundant Dual Input	External Power Supply	Operating Temp.
RKS-G4028-L3-4GT-2HV-T	28	-	P	110/220 VAC/VDC	P	-	-40 to 75°C
RKS-G4028-L3-4GS-HV-T	28	-	P	110/220 VAC/VDC	-	-	-40 to 75°C
RKS-G4028-L3-4GS-2HV-T	28	-	P	110/220 VAC/VDC	P	-	-40 to 75°C
RKS-G4028-L3-4GT-LV-T	28	-	P	24/48 VDC	-	-	-40 to 75°C
RKS-G4028-L3-4GT-2LV-T	28	-	P	24/48 VDC	P	-	-40 to 75°C
RKS-G4028-L3-4GS-LV-T	28	-	P	24/48 VDC	-	-	-40 to 75°C
RKS-G4028-L3-4GS-2LV-T	28	-	P	24/48 VDC	P	-	-40 to 75°C
RKS-G4028-PoE-4GS-HV-T	28	P	-	110/220 VAC/VDC	-	P	-40 to 75°C
RKS-G4028-PoE-4GS-2HV-T	28	P	-	110/220 VAC/VDC	P	P	-40 to 75°C
RKS-G4028-PoE-4GS-LV-T	28	P	-	24/48 VDC	-	P	-40 to 75°C
RKS-G4028-PoE-4GS-2LV-T	28	P	-	24/48 VDC	P	P	-40 to 75°C
RKS-G4028-L3-PoE-4GS-HV-T	28	P	P	110/220 VAC/VDC	-	P	-40 to 75°C
RKS-G4028-L3-PoE-4GS-2HV-T	28	P	P	110/220 VAC/VDC	P	P	-40 to 75°C
RKS-G4028-L3-PoE-4GS-LV-T	28	P	P	24/48 VDC	-	P	-40 to 75°C
RKS-G4028-L3-PoE-4GS-2LV-T	28	P	P	24/48 VDC	P	P	-40 to 75°C

配件 (另購)

Expansion Modules

RM-G4000-8TX	Fast Ethernet module with 8 10/100BaseT(X) ports
RM-G4000-8SFP	Fast Ethernet module with 8 100BaseSFP slots
RM-G4000-8PoE	Fast Ethernet module with 8 10/100BaseT(X) IEEE 802.3bt PoE ports
RM-G4000-8GTX	Gigabit Ethernet module with 8 10/100/1000BaseT(X) ports
RM-G4000-8GSFP	Gigabit Ethernet module with 8 100/1000BaseSFP slots
RM-G4000-8GPoE	Gigabit Ethernet module with 8 10/100/1000BaseT(X) IEEE 802.3bt PoE ports
RM-G4000-6MSC	Fast Ethernet module with 6 multi-mode 100BaseFX ports with SC connectors
RM-G4000-6MST	Fast Ethernet module with 6 multi-mode 100BaseFX ports with ST connectors
RM-G4000-6SSC	Fast Ethernet module with 6 single-mode 100BaseFX ports with SC connectors
RM-G4000-4MSC2TX	Fast Ethernet module with 4 multi-mode 100BaseFX ports with SC connectors, 2 10/100BaseT(X) ports
RM-G4000-4MST2TX	Fast Ethernet module with 4 multi-mode 100BaseFX ports with ST connectors, 2 10/100BaseT(X) ports
RM-G4000-4SSC2TX	Fast Ethernet module with 4 single-mode 100BaseFX ports with SC connectors, 2 10/100BaseT(X) ports
RM-G4000-2MSC4TX	Fast Ethernet module with 2 multi-mode 100BaseFX ports with SC connectors, 4 10/100BaseT(X) ports
RM-G4000-2MST4TX	Fast Ethernet module with 2 multi-mode 100BaseFX ports with ST connectors, 4 10/100BaseT(X) ports
RM-G4000-2SSC4TX	Fast Ethernet module with 2 single-mode 100BaseFX ports with SC connectors, 4 10/100BaseT(X) ports

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

SFP Modules

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-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-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-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-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-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-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-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-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-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-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-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 1000BaseEZ port with LC connector for 110 km transmission, 0 to 60°C operating temperature
SFP-1GEZXLC-120	SFP module with 1 1000BaseEZ 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-1GLHXLC	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°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-1GLXLC	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°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-1GZXLC	SFP module with 1 1000BaseZX port with LC connector for 80 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-T	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, -40 to 85°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-T	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°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-1GZXC-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

Software

MXview-100	MXview license for 100 nodes
MXview-50	MXview license for 50 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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