

RKS-G4028シリーズ

28Gポート（802.3bt PoEオプション付き）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



機能と特長

- ・ファストイーサネットからフルギガビットの産業用ネットワーク（最大28ギガビットポート）まで、幅広い需要に対応
- ・コネクタタイプの組み合わせに柔軟に対応するモジュール式インターフェース
- ・ポートあたり最大90 WのIEEE 802.3bt PoEをサポート
- ・IEC 61850-3とIEEE 1613に準拠した高いイミュニティ（EMC）
- ・高精度時刻同期に対応するハードウェアベースのIEEE 1588 PTP
- ・Turbo RingおよびTurbo Chain（リカバリータイム<20 ms @ 250スイッチ）¹、ネットワーク冗長性のためのSTP/RSTP/MSTP
- ・動作温度範囲-40～75°C
- ・簡単に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 62443-4-1に準拠して開発され、IEC 62443-4-2産業サイバーセキュリティ規格に準拠

認証



製品紹介

RKS-G4028シリーズは、変電所自動化システム(IEC 61850-3, IEEE 1613)、鉄道アプリケーション(EN 50121-4)、ファクトリーオートメーションシステムなどの産業およびビジネス向けのミッションクリティカルなアプリケーションの厳しい要件に応えるように設計されています。RKS-G4028シリーズのギガビットおよびファストイーサネットバックボーン、冗長リング、24 VDC、48 VDC、または110/220 VDC/VACデュアル絶縁冗長電源により、通信の信頼性が向上するとともに、配線にかかるコストを削減できます。

RKS-G4028シリーズのモジュラー設計により、ネットワーク計画が容易にできるようになり、最大28のさまざまなコネクタタイプのギガビットポートを設置できるようになることで、柔軟性が向上します。

その他の機能と特長

- ・ネットワーク間でデータと情報を通信させるためのレイヤー3スイッチング機能(L3モデルのみ)
- ・ネットワーク時刻同期用IEEE 1588v2 PTP (Precision Time Protocol)
- ・主なマネージド機能を迅速に設定するためのコマンドラインインターフェース(CLI)
- ・各ポリシーに応じてIPアドレスを割り当てるDHCP Option 82
- ・マルチキャストトラフィックをフィルタリングするIGMPスヌーピングおよびGMRP
- ・ポートベースのVLAN、IEEE 802.1Q VLAN、GVRPでネットワーク計画を簡素化
- ・時間確定性を向上させるQoS（IEEE 802.1p/1QおよびTOS/DiffServ）
- ・最適な帯域幅を利用するためのIEEE 802.3ad、LACP
- ・ラインスワップ高速リカバリー
- ・TACACS+、IEEE 802.1x、SNMPv3、HTTPS、およびSSHで、ネットワークセキュリティを強化
- ・異なるレベルのネットワーク管理を実現するSNMPv1/v2c/v3
- ・プロアクティブで効率の高いネットワーク監視のためのRMON
- ・許可されたMACアドレスへのアクセスを制限する「ポートのロック」で、予期しないネットワークアクセスを防止
- ・オンラインデバッグ用のポートミラーリング
- ・Eメールとリレー出力を通じた異常検出による自動警告
- ・接続されたデバイスのIPアドレスの自動復旧
- ・Webブラウザ、Telnet/シリアルコンソール、CLI、Windowsユーティリティ、ABC-02-USB自動バックアップコンフィギュレーターによる設定が可能

1. ポートリンク速度が1ギガビットまたはそれ以上である場合、リカバリータイムは50ms未満で

仕様

Input/Output Interface

Alarm Contact Channels	1 relay output with current carrying capacity of 2 A @ 24 VDC
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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/jp/warranty

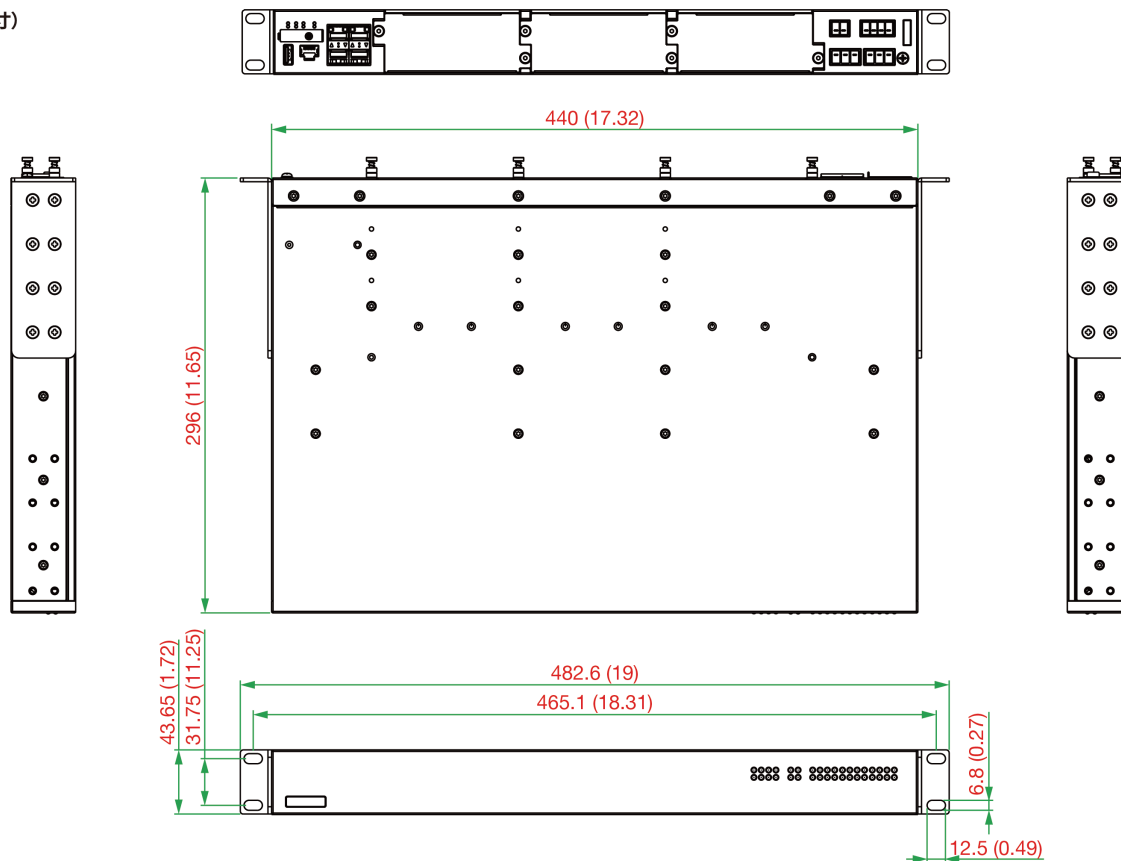
Package Contents

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.

寸法

単位 = mm (英寸)



注文情報

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

アクセサリ（別売）

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-1GEZXC	SFP module with 1 1000BaseEZC port with LC connector for 110 km transmission, 0 to 60°C operating temperature
SFP-1GEZXC-120	SFP module with 1 1000BaseEZC 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-1GLSXC	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-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

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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