

# RKS-G4028 系列

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



### 特色與優點

- 可滿足從快速乙太網路到全 Gigabit 工業網路的廣泛需求 (最多支援 28 個 Gigabit 連接埠)
- 模組化介面，可靈活組合連接器類型
- 支援 IEEE 802.3bt PoE，每個連接埠輸出功率最高達 90 W
- 高 EMC 耐受能力，符合 IEC 61850-3 和 IEEE 1613 標準
- 硬體式 IEEE 1588 PTP，用於高精度時間同步
- Turbo Ring 和 Turbo Chain (250 台交換器，復原時間 < 20 毫秒)<sup>1</sup>，以及 STP/RSTP/MSTP，以實現網路備援
- 支援 MXstudio，輕鬆實現可視化的工業網路管理
- 通過 IEC 62443-4-2 安全等級 2 認證
- -40°C 至 75°C 操作溫度範圍

### 認證



### 簡介

RKS-G4028 系列的設計旨在滿足工業與商業領域中各種關鍵任務應用 (如符合 IEC 61850-3 和 IEEE 1613 標準的變電站自動化系統、符合 EN 50121-4 標準的軌道車輛應用，以及工廠自動化系統) 的嚴苛要求。RKS-G4028 系列的 Gigabit 和高速乙太網路骨幹、網路備援，以及 24 VDC、48 VDC 或 110/220 VDC/VAC 雙隔離式備援電源供應器，可提升通訊可靠性，並節省佈線成本。

RKS-G4028 系列的模組化設計讓您輕鬆進行網路規劃，並可安裝最多 28 個 Gigabit 連接埠和多種連接器類型，提供更大彈性。

### 附加特色與優點

- IEEE 1588v2 PTP (精確時間通訊協定)，可用於網路時間同步
- 命令列介面 (CLI) 快速設定主要網管功能
- 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
- 頻寬管理搭配「鎖定埠」功能，可限制僅授權的 MAC 位址存取，進而防止不可預測的網路狀態發生
- 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 或 ABC-03 自動備份設定程式進行設定

### 通過 IEC 62443-4-2 安全等級 2 認證

RKS-G4028 系列型號已通過 IEC 62443-4-2 安全等級 2 認證，可強化工業網路中的網路安全。

L3 型號：<https://certificates.iecee.org/#/deliverables/CERT/1530510/view>

其他所有型號：<https://certificates.iecee.org/#/deliverables/CERT/1530507/view>

1. 若連接埠連結速度為 1 Gigabit 或更高，恢復時間則 < 50 毫秒

## 規格

### Input/Output Interface

|                        |                                                               |
|------------------------|---------------------------------------------------------------|
| Alarm Contact Channels | 1 relay output with current carrying capacity of 2 A @ 24 VDC |
| Buttons                | Reset button                                                  |

### Ethernet Interface

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10/100/1000BaseT(X) Ports (RJ45 connector) | RKS-G4028-4GT models: 4                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 100/1000BaseSFP Slots                      | RKS-G4028-4GS models: 4<br>RKS-G4028-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                                  | IEEE 802.1D-2004 for Spanning Tree Protocol<br>IEEE 802.1p for Class of Service<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1s for Multiple Spanning Tree Protocol<br>IEEE 802.1w for Rapid Spanning Tree Protocol<br>IEEE 802.1X for authentication<br>IEEE 802.3 for 10BaseT<br>IEEE 802.3ab for 1000BaseT(X)<br>IEEE 802.3ad for Port Trunk with LACP<br>IEEE 802.3u for 100BaseT(X) and 100BaseFX<br>IEEE 802.3x for flow control<br>IEEE 802.3z for 1000BaseSX/LX/LHX/ZX |

### Ethernet Software Features

|                      |                                                                                                                                                                                                                                                                                                                                      |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Management           | ARP<br>Back Pressure Flow Control<br>DHCP Server/Client<br>DHCP Relay Agent (Option 82)<br>Fiber check<br>Flow control<br>HTTP<br>HTTPS<br>IPv4/IPv6<br>Linkup Delay<br>LLDP<br>Private MIB<br>Port Mirroring (SPAN, RSPAN)<br>RARP<br>RMON<br>SFTP<br>SMTP<br>SNMP Trap<br>SNMP Inform<br>SNMPv1/v2c/v3<br>Syslog<br>Telnet<br>TFTP |
| Filter               | GMRP<br>GVRP<br>GARP<br>802.1Q<br>IGMP Snooping v1/v2/v3<br>IGMP Querier                                                                                                                                                                                                                                                             |
| Redundancy Protocols | Link Aggregation<br>MRP<br>MRP Interconnection<br>MSTP<br>Multiple Dual Homing                                                                                                                                                                                                                                                       |

|                      |                                                                                                                                                                                                                                                                                                                                        |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      | Multiple Network Coupling<br>Network Loop Protection<br>Ring Coupling<br>RSTP<br>STP<br>Tracking<br>Turbo Chain<br>Turbo Ring v2                                                                                                                                                                                                       |
| Security             | Access control list<br>Broadcast storm protection<br>DHCP Snooping<br>Dynamic ARP Inspection<br>HTTPS/SSL<br>IEEE 802.1AE MAC security<br>IP Source Guard<br>Login and password policy<br>MAC authentication bypass<br>RADIUS<br>Rate Limit<br>Secure boot<br>SSH<br>Static port lock<br>Sticky MAC<br>TACACS+<br>Trust access control |
| Time Management      | IEEE 1588v2 PTP (hardware-based)<br>NTP Authentication<br>NTP Server/Client<br>SNTP<br>Supported power profiles: IEEE 1588 Default 2008, IEC 61850-9-3-2016, IEEE C37.238-2017                                                                                                                                                         |
| Protocols            | 802.1X<br>ARP<br>DHCP Client<br>DHCP Server<br>DNS<br>HTTP<br>HTTPS<br>ICMP<br>IPv4/IPv6<br>NTP Client<br>QoS<br>SMTP<br>SNMPv1/v2c/v3<br>Syslog<br>RARP<br>RMON<br>TCP/IP<br>Telnet<br>TFTP<br>UDP<br>VLAN Assignment                                                                                                                 |
| Industrial Protocols | EtherNet/IP<br>Modbus TCP<br>PROFINET                                                                                                                                                                                                                                                                                                  |

|                  |                                                                                                                                                                                          |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MIB              | P-BRIDGE MIB<br>Q-BRIDGE MIB<br>IEEE8021-SPANNING-TREE-MIB<br>IEEE8021-PAE-MIB<br>IEEE8023-LAG-MIB<br>LLDP-EXT-DOT1-MIB<br>LLDP-EXT-DOT3-MIB<br>SNMPv2-MIB<br>RMON MIB Groups 1, 2, 3, 9 |
| Power Substation | MMS<br>1588 PTP Power Profile IEC 61850-9-3<br>1588 PTP Power Profile C37.238-2017<br>GOOSE Check                                                                                        |

### Switch Properties

|                    |               |
|--------------------|---------------|
| IGMP Groups        | 1024          |
| Jumbo Frame Size   | 9.216 KB      |
| MAC Table Size     | 16 K          |
| Max. No. of VLANs  | 256           |
| Packet Buffer Size | 1.5 MB        |
| Priority Queues    | 8             |
| VLAN ID Range      | VID 1 to 4094 |

### USB Interface

|              |            |
|--------------|------------|
| Storage Port | USB Type A |
|--------------|------------|

### MicroSD Interface

|              |              |
|--------------|--------------|
| Storage Port | microSD card |
|--------------|--------------|

### LED Interface

|                |                                                           |
|----------------|-----------------------------------------------------------|
| LED Indicators | PWR1, PWR2, STATE, FAULT, MSTR/HEAD, CPLR/TAIL, SYNC, EPS |
|----------------|-----------------------------------------------------------|

### Serial Interface

|              |               |
|--------------|---------------|
| Console Port | RS-232 (RJ45) |
|--------------|---------------|

### Power Parameters

|                                |                                                                                                                                                                                                                                                                       |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Total PoE Power Budget         | 300 W                                                                                                                                                                                                                                                                 |
| Max. PoE Power Output per Port | IEEE 802.3af: 15.4 W<br>IEEE 802.3at: 30 W<br>IEEE 802.3bt: 90 W                                                                                                                                                                                                      |
| Input Voltage                  | RKS-G4028-LV models: 24/48 VDC<br>RKS-G4028-2LV models: 24/48 VDC (redundant power supplies)<br>RKS-G4028-HV models: 110/220 VAC, 110/220 VDC<br>RKS-G4028-2HV models: 110/220 VAC, 110/220 VDC (redundant power supplies)<br>PoE models: 48 VDC (for the PoE system) |
| Operating Voltage              | RKS-G4028-LV/2LV models: 18 to 72 VDC<br>RKS-G4028-HV/2HV models: 88 to 300 VDC, 85 to 264 VAC<br>PoE models: 46 to 57 VDC (for the PoE system)                                                                                                                       |
| Overload Current Protection    | Supported                                                                                                                                                                                                                                                             |
| Reverse Polarity Protection    | Supported                                                                                                                                                                                                                                                             |

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input Current            | <p>RKS-G4028-LV/2LV models:<br/>Max. 2.53 A @ 24 VDC<br/>Max. 1.25 A @ 48 VDC</p> <p>RKS-G4028-HV/2HV models:<br/>Max. 0.55 A @ 110 VDC<br/>Max. 0.29 A @ 220 VDC<br/>Max. 1.01 A @ 110 VAC<br/>Max. 0.62 A @ 220 VAC</p> <p>EPS (PoE models only):<br/>Max. 7.50 A @ 48 VDC</p>                                                                                                                                                                                          |
| Power Consumption (Max.) | <p>RKS-G4028-LV/2LV models:<br/>Max. 60.72 W @ 24 VDC<br/>Max. 60 W @ 48 VDC</p> <p>RKS-G4028-HV/2HV models:<br/>Max. 60.5 W @ 110 VDC<br/>Max. 63.8 W @ 220 VDC<br/>Max. 62.2 W @ 110 VAC<br/>Max. 64.1 W @ 220 VAC</p> <p>Note: These are the maximum power consumption ratings for the device with the maximum number of modules installed.<br/>Note: These are the maximum power consumption ratings for the device with the maximum number of modules installed.</p> |

### Physical Characteristics

|              |                                                                                                                                                                                                        |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IP Rating    | IP30                                                                                                                                                                                                   |
| Dimensions   | 440 x 44 x 296 mm (17.32 x 1.37 x 11.65 in)                                                                                                                                                            |
| Weight       | <p>RKS-G4028-LV/HV models: 4900 g (10.80 lb)<br/>RKS-G4028-2LV/2HV models: 5200 g (11.46 lb)<br/>RKS-G4028-PoE-LV/HV models: 5000 g (11.02 lb)<br/>RKS-G4028-PoE-2LV/2HV models: 5300 g (11.68 lb)</p> |
| 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

|                          |                                                                                                                                                                                                                                                                                                             |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EMC                      | <p>EN 55032/35<br/>EN 61000-6-2/-6-4</p>                                                                                                                                                                                                                                                                    |
| EMI                      | CISPR 32, FCC Part 15B Class A                                                                                                                                                                                                                                                                              |
| EMS                      | <p>IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV<br/>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m<br/>IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV<br/>IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV<br/>IEC 61000-4-6 CS: 10 V<br/>IEC 61000-4-8 PFMF<br/>IEC 61000-4-11 Voltage Dips &amp; Interruptions</p> |
| Industrial Cybersecurity | IEC 62443-4-2 Security Level 2                                                                                                                                                                                                                                                                              |
| Safety                   | <p>EN IEC 62368-1<br/>IEC 60950-1<br/>IEC 62368-1<br/>UL 61010<br/>UL 62368-1</p>                                                                                                                                                                                                                           |

|                  |                          |
|------------------|--------------------------|
| Power Substation | IEC 61850-3<br>IEEE 1613 |
| Railway          | EN 50121-4               |
| Traffic Control  | NEMA TS2                 |
| Shock            | IEC 60068-2-27           |
| Vibration        | IEC 60068-2-6            |
| Freefall         | IEC 60068-2-32           |

## MTBF

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

## Warranty

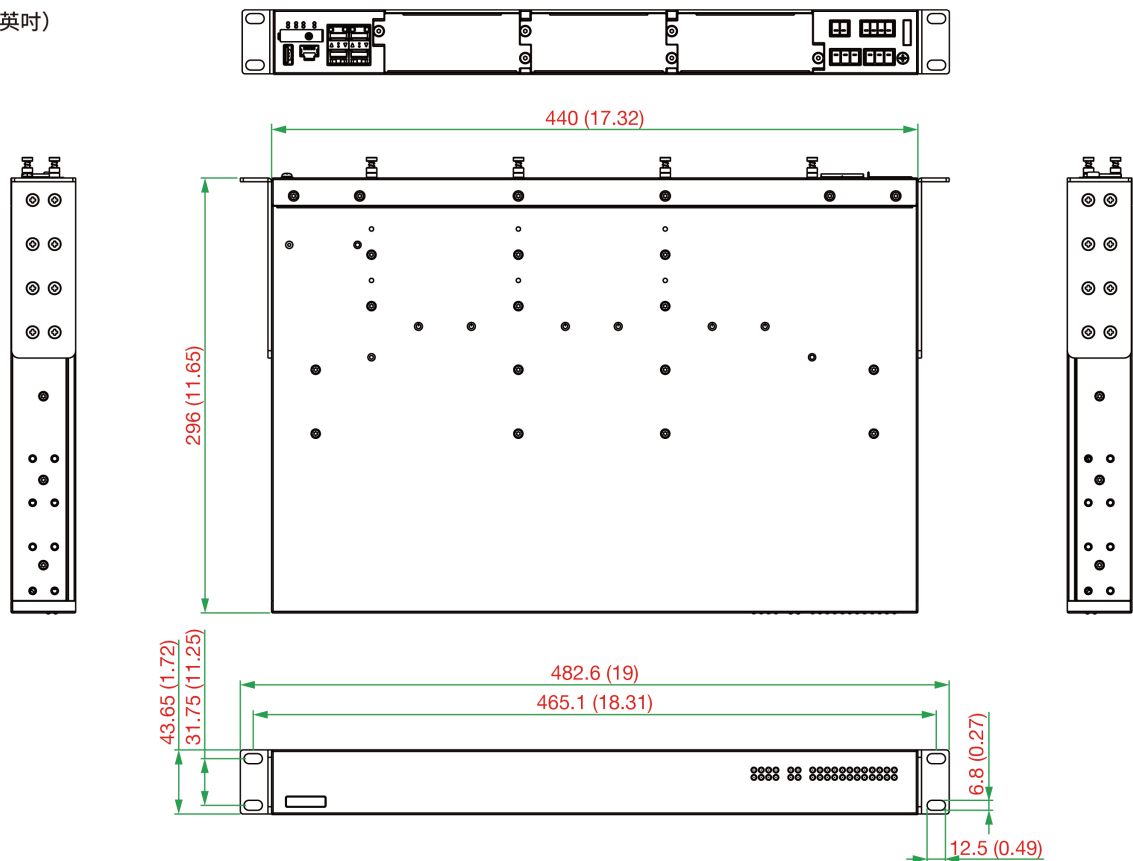
|                 |                                                                            |
|-----------------|----------------------------------------------------------------------------|
| Warranty Period | 5 years                                                                    |
| Details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

## Package Contents

|                  |                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device           | 1 x RKS-G4028 Series switch                                                                                                                                                                                                                                                                                                                                                              |
| Installation Kit | 2 x rack-mounting ear<br>4 x protective caps for unused SFP ports (for RKS-G4028-GS models only)<br>8 x round stickers for module screws                                                                                                                                                                                                                                                 |
| Documentation    | 1 x quick installation guide<br>1 x warranty card                                                                                                                                                                                                                                                                                                                                        |
| Note             | 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.<br>2. Power over Ethernet requires the 48 VDC external power supply (46 to 57 VDC).<br>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 Power Supplies | External Power Supply | Operating Temp. |
|-------------------------|-------------------|-------------|------------------|-----------------|--------------------------|-----------------------|-----------------|
| RKS-G4028-4GT-HV-T      | 28                | –           | –                | 110/220 VAC/VDC | –                        | –                     | -40 to 75°C     |
| RKS-G4028-4GT-2HV-T     | 28                | –           | –                | 110/220 VAC/VDC | √                        | –                     | -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 | √                        | –                     | -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       | √                        | –                     | -40 to 75°C     |
| RKS-G4028-4GS-LV-T      | 28                | –           | –                | 24/48 VDC       | –                        | –                     | -40 to 75°C     |
| RKS-G4028-4GS-2LV-T     | 28                | –           | –                | 24/48 VDC       | √                        | –                     | -40 to 75°C     |
| RKS-G4028-PoE-4GS-HV-T  | 28                | √           | –                | 110/220 VAC/VDC | –                        | √                     | -40 to 75°C     |
| RKS-G4028-PoE-4GS-2HV-T | 28                | √           | –                | 110/220 VAC/VDC | √                        | √                     | -40 to 75°C     |
| RKS-G4028-PoE-4GS-LV-T  | 28                | √           | –                | 24/48 VDC       | –                        | √                     | -40 to 75°C     |
| RKS-G4028-PoE-4GS-2LV-T | 28                | √           | –                | 24/48 VDC       | √                        | √                     | -40 to 75°C     |

## 配件 (選購)

### 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 |



