

EDR-G9004 系列

2 埠 Gigabit 銅纜 + 2 埠 Gigabit 銅纜/SFP 組合連接埠的工業安全路由器



特色與優點

- 4 埠 Gigabit 多功能防火牆/NAT/VPN/路由器
- Gen3 LAN Bypass 功能實現系統容錯
- 透過公共網路實現雙 WAN 備援介面
- 工業級入侵防禦/偵測系統 (IPS/IDS)
- 使用 MXsecurity 管理軟體視覺化呈現 OT 安全性
- 透過 VPN 安全遠端存取
- 使用深度封包檢測 (DPI) 技術檢查工業通訊協議資料
- 透過網路位址轉譯 (NAT) 輕鬆設定網路
- 根據 IEC 62443-4-2 標準開發，具有安全啟動功能
- -40 至 75°C 操作溫度範圍 (-T 型號)

認證



EN 50121-4

簡介

EDR-G9004 系列是一套高度整合的工業多連接埠安全路由器，具有防火牆/NAT/VPN 功能。這些裝置設計用於關鍵遠端控制或監控網路中乙太網路的安全應用。這些安全路由器提供電子安全邊界來保護關鍵網路資產，包括電力應用中的變電站、水處理站中的泵浦處理系統、石油和天然氣應用中的分散式控制系統以及工廠自動化中的 PLC/SCADA 系統。此外，透過新增 IDS/IPS，EDR-G9004 系列成為新一代的工業防火牆，配備威脅偵測和防禦功能，可進一步保護關鍵基礎設施免受網路安全攻擊。

利用進階網路安全功能防禦惡意威脅

EDR-G9004 系列的嵌入式防火牆使用政策規則來控制受信任區域之間的網路流量，同時網路位址轉換 (NAT) 可保護內部網路免遭外部主機的非法存取。虛擬私人網路 (VPN) 功能進一步為使用者從公共國際網路存取專用網路時提供安全的通訊隧道。為了協助保護您的 OT 資產免受網路攻擊，EDR-G9004 系列支援深度封包檢測 (DPI)，以檢查各種 OT 特定通訊協定的網路封包的資料部分。

透過對使用者友善型介面和快速設定簡化配置

EDR-G9004 系列的設定精靈為使用者提供了一種簡單的方法來設定 DMZ 連接埠，只需三個步驟即可建立安全的網路緩衝區。此外，基於物件的防火牆管理功能為工程師提供了一種簡單的方法來設定和維護針對 IP 位址和子網路、網路服務、工業應用服務和使用者定義服務的防火牆過濾。

工業級設計，確保持續的網路連接

EDR-G9004 系列硬體堅固耐用，使這些安全路由器成為惡劣工業環境的理想選擇；提供寬溫版本，可在危險工況和 -40 至 75°C 的極端溫度下可靠運作。此外，EDR-G9004 系列支援 WAN、layer 3 備援機制和 Gen3 LAN Bypass 容錯功能，以確保您的網路始終保持連接。

虛擬修補和智慧型威脅防護功能

修補在 OT 環境中仍是一項重大挑戰，因為 OT 應用無法承受關閉系統來中斷營運以進行修補的代價。虛擬修補技術可屏蔽已知和未知的安全漏洞，進而彌補現有修補管理程序的不足。此外，EDR-G9004 還具有智慧 IPS 功能（使用基於模式的偵測來識別和阻止已知攻擊），可持續防禦網路威脅。

MX-ROS 應對日益增多的網路安全威脅

Moxa MX-ROS (<https://www.moxa.com/en/spotlight/portfolio/mx-ros/index>) 是用於工業安全路由器和防火牆的軟體平台。該平台透過簡化的 Web 和 CLI 介面實現安全路由器的可靠安全性和使用者友善型操作介面。除了符合 IEC 62443-4-2 之外，MX-ROS 裝置還為每個版本提供了大量最新的跨產業營運技術 (OT) 網路管理功能，以保護硬體和軟體。

規格

Input/Output Interface

Alarm Contact Channels	Resistive load: 1 A @ 24 VDC
Buttons	Reset button
Digital Input Channels	+13 to +30 V for state 1 -30 to +3 V for state 0 Max. input current: 8 mA

Ethernet Interface

10/100/1000BaseT(X) Ports (RJ45 connector)	2 (with Gen3 LAN Bypass)
Combo Ports (10/100/1000BaseT(X) or 1000BaseSFP)	2
DMZ	Supports DMZ port
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseSX/LX/LHX/ZX IEEE 802.3x for flow control IEEE 802.1X for authentication

Ethernet Software Features

Management	Back Pressure Flow Control DDNS DHCP Server/Client Web Console (HTTP/HTTPS) LLDP SNMPv1/v2c/v3 Telnet TFTP HTTPS SSH
Routing Throughput	Max. 350K packets per second / 2 Gbps (based on RFC 2544)
Routing Table	Max. 4K routing rules
Concurrent Connections	Max. 400K (based on RFC 3511)
Connections Per Second	Max. 20K (based on RFC 3511)
Routing Redundancy	VRRP
Security	Secure Boot IPsec L2TP (server) RADIUS TACACS+ Trust access control
Time Management	NTP Server/Client SNTP
Multicast Routing	Static Route
Unicast Routing	OSPF RIPV1/V2 Static Route

LED Interface

LED Indicators	PWR1, PWR2, STATE, BYPASS, WAN/DMZ, VRRP/HA, VPN, USB
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DoS and DDoS Protection

Technology	ARP-Flood FIN Scan ICMP Flood TCP Sessions Without SYN NMAP-ID Scan NMAP-Xmas Scan Null Scan SYN/FIN Scan SYN/RST Scan SYN-Flood Xmas Scan
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Firewall

Filter	DDoS Ethernet protocols ICMP IP address MAC address Ports
Stateful Inspection	Router firewall Transparent (bridge) firewall
Deep Packet Inspection	Modbus TCP Modbus UDP DNP3 IEC 60870-5-104 IEC 61850 MMS EtherNet/IP Omron FINS Siemens S7 Comm. Additional protocols will be supported through future firmware updates.
Intrusion Prevention System	Requires an additional license.
Throughput	Firewall: Max. 350K packets per second / 2 Gbps (based on RFC 2544) IPS: Max. 200K packets per second / 2 Gbps (based on RFC 2544)

IPsec VPN

Authentication	MD5 and SHA (SHA-256) RSA (key size: 1024-bit, 2048-bit) X.509 v3 certificate
Concurrent VPN Tunnels	Max. 250 IPsec VPN tunnels
Encryption	DES 3DES AES-128 AES-192 AES-256
Protocols	IPsec L2TP (server) PPTP (client)
Throughput	Conditions: AES-256, SHA-256 Max. 100K packets per second / 800 Mbps (based on RFC 2544)

NAT

Features	1-to-1 N-to-1 NAT loopback Port forwarding
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Real-Time Firewall / VPN Event Log

Event Type	Firewall event VPN event
Media	Local storage SNMP Trap Syslog server

Serial Interface

Console Port	RS-232 (TxD, RxD, GND), 3-pin (115200, n, 8, 1)
Connector	USB Type-C

Power Parameters

Connection	Removable terminal block
Input Voltage	12/24/48 VDC, redundant dual inputs
Operating Voltage	9.6 to 60 VDC
Input Current	1.01 A @ 12 VDC 0.51 A @ 24 VDC 0.27 A @ 48 VDC
Reverse Polarity Protection	Supported

Physical Characteristics

Housing	Metal
Dimensions	45 x 135 x 105 mm (1.77 x 5.31 x 4.13 in)
Weight	800 g (1.76 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)

Environmental Limits

Operating Temperature	Standard Models: -10 to 60°C (14 to 140°F) Wide Temp. Models: -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	IEC 62368-1 UL 62368-1
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: 2 kV; Signal: 4 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Railway	EN 50121-4
Shock	IEC 60068-2-27

Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

MTBF

Time	1,876,185 hrs
Standards	Telcordia (Bellcore), GB

Warranty

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

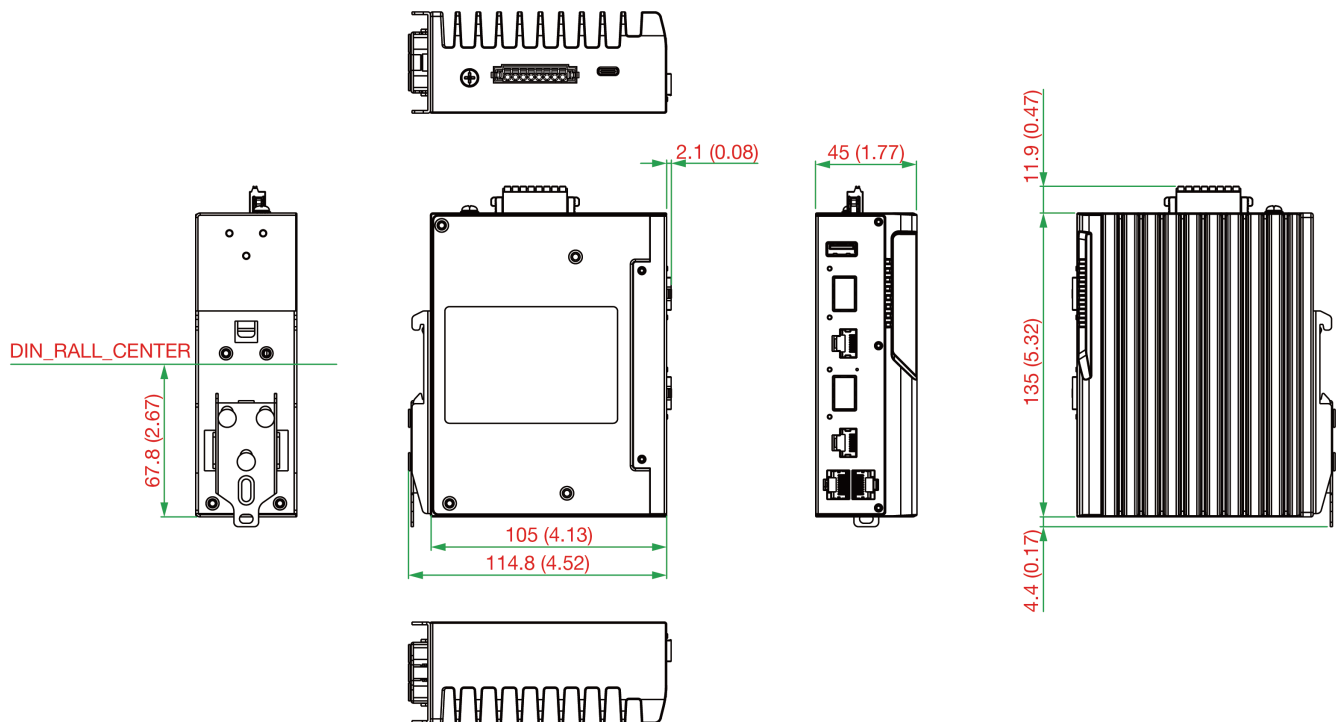
Package Contents

Device	1 x EDR-G9004 Series secure router
Cable	1 x DB9 female to USB Type-C
Documentation	1 x quick installation guide 1 x warranty card
Note	SFP modules need to be purchased separately for use with this product.

尺寸

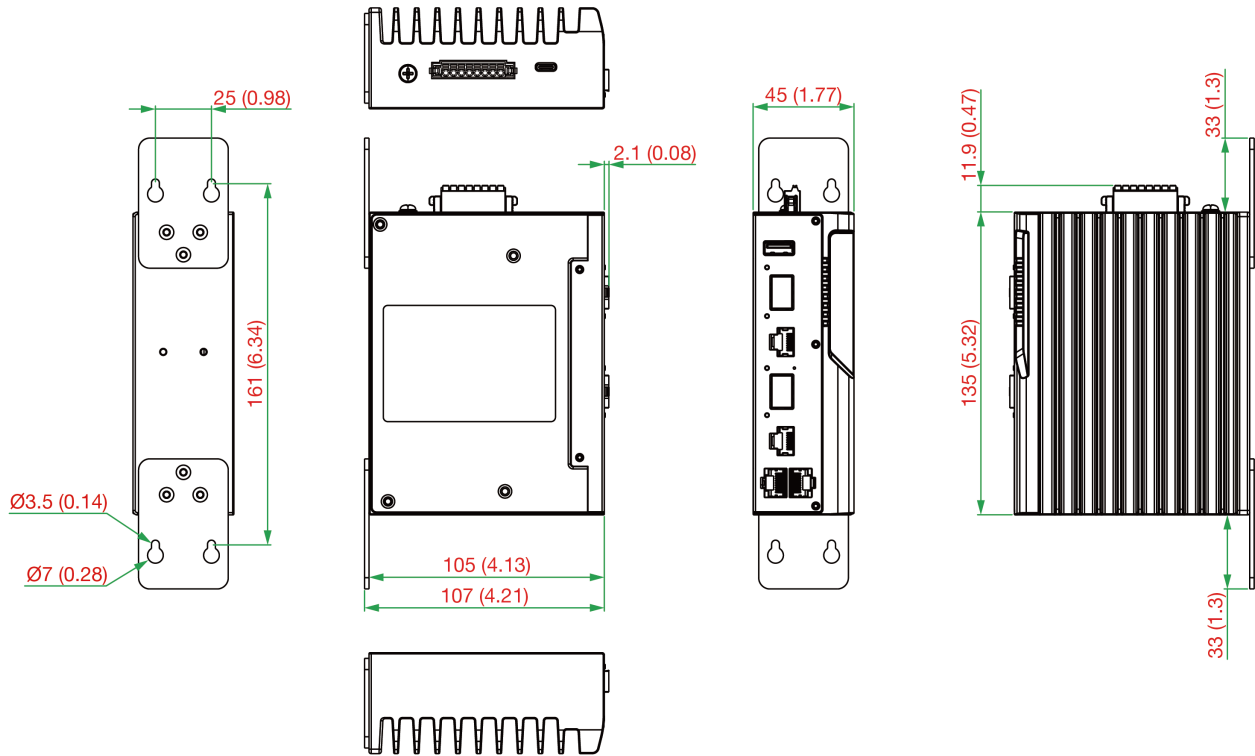
DIN 軌道 安裝

單位：公釐（英吋）



壁掛安裝

單位：公釐 (英吋)



訂購資訊

Model Name	10/100/1000BaseT(X) Ports (RJ45 Connector)	10/100/1000BaseT(X) or 1000BaseSFP Combo Ports	Firewall	NAT	VPN	Input Voltage	Conformal Coating	Operating Temp.
EDR-G9004-VPN-2MGTSFP	2	2	P	P	P	12/24/48 VDC	-	-10 to 60°C
EDR-G9004-VPN-2MGTSFP-T	2	2	P	P	P	12/24/48 VDC	-	-40 to 75°C
EDR-G9004-VPN-2MGTSFP-CT	2	2	P	P	P	12/24/48 VDC	P	-10 to 60°C
EDR-G9004-VPN-2MGTSFP-CT-T	2	2	P	P	P	12/24/48 VDC	P	-40 to 75°C

配件 (選購)

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

SFP Modules

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-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-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

Wall-Mounting Kits

WK-40-01	Wall-mounting kit, 2 plates, 6 screws, 40 x 58 x 2 mm
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Software

LIC-MXsecurity-NEW-XN-SR	MXsecurity perpetual node license with customizable node quantity (minimum 1 node)
LIC-IPS-MXsecurity-NEW-1Y-XN-SR	1-year IPS license for MXsecurity with customizable node quantity (minimum 1 node)

LIC-IPS-MXsecurity-NEW-XM-XN-DMR	IPS license for MXsecurity with customizable duration and node quantity (minimum 1 month, minimum 1 node)
LIC-IPS-MXsecurity-RENEW-1Y-XN-SR	1-year IPS renewal license for MXsecurity with customizable node quantity (minimum 1 node)
LIC-IPS-MXsecurity-RENEW-XM-XN-DMR	IPS renewal license for MXsecurity with customizable duration and node quantity (minimum 1 month, minimum 1 node)
LIC-IPS-MXsecurity-ADD-1Q-XN-SR	3-month IPS add-on license for MXsecurity with customizable node quantity (minimum 1 node)
LIC-IPS-MXsecurity-ADD-2Q-XN-SR	6-month IPS add-on license for MXsecurity with customizable node quantity (minimum 1 node)
LIC-IPS-MXsecurity-ADD-3Q-XN-SR	9-month IPS add-on license for MXsecurity with customizable node quantity (minimum 1 node)
LIC-IPS-MXsecurity-ADD-4Q-XN-SR	1-year IPS add-on license for MXsecurity with customizable node quantity (minimum 1 node)
LIC-IPS-MXsecurity-ADD-XM-XN-DMR	IPS add-on license for MXsecurity with customizable duration and node quantity (minimum 1 month, minimum 1 node)
LIC-IPS-DEVICE-NEW-1Y-1N-MR	1-year device-based IPS license
LIC-IPS-DEVICE-RENEW-1Y-1N-MR	1-year device-based IPS renewal license

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