NPort IA5000-G2 系列

適用於工業自動化的 1、2 和 4 埠 DIN 導軌串列設備伺服器



特色與優點

- 使用 DSU-G2，30 秒即可完成經典 Real COM 模式設定
- 2 個乙太網路埠，具有相同的 IP 位址或雙 IP 位址，可實現網路備援
- 串接式乙太網路埠，便於佈線
- 支援非標準鮑率（Nonstandard Baud Rates），並具備高精確度
- 支援多種安全作業模式的資料加密，包括 Real COM、TCP Server、TCP Client、Pair Connection、Terminal 與 Reverse Terminal
- 一鍵診斷，輕鬆進行故障排除作業
- 內建通訊流量監控，支援進階資料分析
- 10/100BaseTX (RJ45) 或 100BaseFX（單模或多模，具備 SC/ST 連接器），與 100Base SFP
- 通過 DNV、CID2、ATEX Zone 2 和 IECEx 認證
- 符合 IEC 62443-4-2 安全等級 2 的要求

認證

簡介

NPort® IA5000-G2 設備伺服器專為連接工業自動化串列設備而設計，例如 PLC、感測器、儀表、馬達、驅動器、條碼讀取器與操作員顯示器。這些設備伺服器結構堅固，採用金屬外殼和螺絲式連接器，並提供全面的突波保護。NPort® IA5000-G2 設備伺服器便於使用，為您提供簡單且可靠的串列轉乙太網路解決方案。

串接式乙太網路埠，讓佈線變得更輕鬆

NPort® IA5000-G2 設備伺服器各具有兩個乙太網路埠，可做為乙太網路交換器連接埠。一個連接埠可直接連接到網路或伺服器，另一個連接埠可以連接到另一個 NPort IA 設備伺服器或另一個乙太網路設備。雙乙太網路埠無需將每個設備連接到單獨的乙太網路交換器，有助於降低佈線成本。

適用於乙太網路通訊的光纖

NPort® IA5000-G2 系列包括 100BaseFX 光纖型號，多模機型支援最長 4 公里的傳輸距離，單模型號支援最遠 40 公里的傳輸距離。這些型號也具備內建 100BaseTX 銅纜埠，使配置變得比過往任何時候都還要更加容易。此系列中的其中一款型號支援 SFP 模組，可為乙太網路埠選項提供額外的靈活性。

光纖非常適合工業應用，因為光纖不會受到電磁雜訊和干擾的影響。對於具有高接地迴路電壓的環境，光纖提供最佳的隔離保護，而且由於不存在產生火花的危險，因此在危險的環境中，光纖也較銅線更為安全。

一鍵式日誌收集，輕鬆將故障排除

在維護階段，系統錯誤可能需要您尋求協助。裝置廠商可能需要花費很長時間來進行故障排除，因為他們需要收集資訊，並與技術支援團隊進行討論。NPort® IA5000-G2 具備一鍵式記錄收集功能，可快速收集完整診斷資料，提供技術支援團隊快速進行系統問題故障排除所需的所有資料。

繼電器輸出警告與電子郵件警示

內建繼電器輸出可用於在網路中斷、電源故障或 DCD 或 DSR 串列訊號中發生變化時向管理員發出警示。當偵測到異常情況時，也可以寄送電子郵件警告。這些功能皆是寶貴的工具，能夠讓維護工程師迅速應對緊急情況。



串列、乙太網路和電源的突波保護

Moxa 領先業界的突波防護技術，應用於 NPort® IA5000-G2 的串列、電源及乙太網路介面，並已通過 IEC 61000-4-5 測試驗證。這種先進的突波保護功能可提供可靠的串列轉乙太網路解決方案，可保護電氣設備免受電壓突波影響，並能抵抗電氣干擾，適用於石油、天然氣和電力自動化等應用。

工業級認證

為確保在工業環境中能夠安全且可靠地運行，NPort® IA5000-G2 設備伺服器已獲取各種工業認證，包括 IP30 防護等級及工業控制設備 UL 62368-1 安全認證。此外，該產品正在申請 ATEX、Class I Division 2 和 IECEx 認證，以在危險場所使用。

規格

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	NPort IA5150-S-SC-G2/M-SC-G2/M-ST-G2 models: 1 NPort IA5000-G2 models: 2 Auto MDI/MDI-X connection
Magnetic Isolation Protection	1.5 kV (built-in)

Optical Fiber

		100BaseFX		
		Multi-Mode		Single-Mode
Fiber Cable Type		OM1	50/125 µm 800 MHz x km	G.652
Typical Distance		4 km	5 km	40 km
Wavelength	Typical (nm)	1300		1310
	TX Range (nm)	1260 to 1360		1280 to 1340
	RX Range (nm)	1100 to 1600		1100 to 1600
Optical Power	TX Range (dBm)	-10 to -20		0 to -5
	RX Range (dBm)	-3 to -32		-3 to -34
	Link Budget (dB)	12		29
	Dispersion Penalty (dB)	3		1

Note: When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by excessive optical power.
Note: Compute the “typical distance” of a specific fiber transceiver as follows: Link budget (dB) > dispersion penalty (dB) + total link loss (dB).

Ethernet Software Features

Configuration Options	Web Console (HTTP/HTTPS) Device Search Utility (DSU) MCC Tool Serial Console
Management	ARP, DHCP Client, DNS, HTTPS, ICMP, IPv4, MDNS, LLDP, SMTP, SMTPS, SNMPv1/v2c/v3, TCP/IP, UDP, SNTP, WINS

Windows Real COM Drivers	Windows 11, 10, 8.1, 8, 7, Vista, XP, ME, 98, and 95 Windows Server 2022, 2019, 2016, 2012 R2, 2012, 2008 R2, 2008, 2003, 2000, and NT
Linux Real TTY Drivers	Kernel versions: 6.x, 5.x, and 4.x
Fixed TTY Drivers	macOS versions: 14, 13, 12, and 11
Arm®-based Platform Support	Windows 11 Linux kernels 6.x, 5.x, and 4.x macOS 14, 13, 12, and 11
Virtual Machine	VMWare ESXi (Windows 11/10/8.1/8/7 & Linux 6.x, 5.x, and 4.x) VMware Fusion (Windows on macOS 14, 13, 12, and 11) Parallels Desktop (Windows on macOS 14, 13, 12, and 11)
Android API	Android 3.1.x and later
Time Management	SNTP Client
Filter	IGMP v1/v2
MIB	RFC1213, RFC1317 Private MIB

Security Functions

Root of Trust	Secure Boot True Random Number Generator (TRNG)
Authentication	Local database
Encryption	HTTPS: ECC-256, ECC-384, ECC-521, RSA-1024, RSA-2048, RSA-3072, RSA-4096, AES-128, AES-256, SHA-256, SHA-384, HMAC SSH: ECC-256, ECC-384, ECC-521, RSA-2048, AES-128, AES-256, SHA-256, SHA-384, HMAC SNMPv3: AES-128, SHA-256, SHA-384 Secure OP mode: HTTPS: ECC-256, ECC-384, ECC-521, RSA-1024, RSA-2048, RSA-3072, RSA-4096, AES-128, AES-256, SHA-256, SHA-384, HMAC Config file import/export: AES-256, SHA-256, HMAC
Security Protocols	HTTPS (TLS 1.2) SNMPv3 SSHv2

Serial Interface

No. of Ports	NPort IA5150-G2 models: 1 NPort IA5250-G2 models: 2 NPort IA5450-G2 models: 4
Connector	NPort IA5150-G2 models: 1 x DB9 male NPort IA5250-G2 models: 2 x DB9 male NPort IA5250-TB-G2 models: 2 x 5-pin terminal block NPort IA5450-G2 models: 4 x DB9 male NPort IA5450-TB-G2 models: 4 x 5-pin terminal block
Serial Standards	RS-232/422/485 (software-selectable)
Standard Operation Modes	Real COM, TCP Server, TCP Client, UDP, Reverse Terminal, RFC2217, Pair Connection, Disabled
Secure Operation Modes	Secure Real COM, Secure TCP Server, Secure TCP Client, Reverse SSH, Secure Pair Connection
Bitrate	50 bps to 921.6 kbps (supports non-standard baudrates)
Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2

Parity	None, Even, Odd, Space, Mark
Flow Control	None, RTS/CTS, DTR/DSR, RTS Toggle, XON/XOFF
RS-485 Data Direction Control	ADDC (automatic data direction control)
Pull High/Low Resistor for RS-485	1 kilo-ohm, 150 kilo-ohms (software–configurable)
Terminator for RS-485	120 ohms (software–configurable)
Isolation	I models: 2 kV

Serial Signals

RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND

Power Parameters

Input Voltage	12 to 48 VDC
Input Current	NPort IA5150-G2/IA5250-G2 models: 12 to 48 VDC, 452 mA (max.) NPort IA5450-G2 models: 12 to 48 VDC, 583 mA (max.)
Power Consumption	NPort IA5150-G2/IA5250-G2 models: Room temperature (25°C): 12 to 48 VDC, 377 mA (max.) Room temperature (75°C): 12 to 48 VDC, 452 mA (max.) NPort IA5450-G2 models: Room temperature (25°C): 12 to 48 VDC, 478 mA (max.) Room temperature (75°C): 12 to 48 VDC, 583 mA (max.)
Power Connector	8-pin terminal block (V1+, V1-, NO, NC, GND, V2+, V2-, SG)

Relays

Contact Current Rating	Resistive load: 1 A @ 30 VAC

Physical Characteristics

Housing	Metal
IP Rating	IP30
Dimensions	NPort IA5150-G2/IA5250-G2 models: 25 x 89 x 129 mm (0.98 x 3.5 x 5.07 in) NPort IA5450-G2 models: 42 x 89 x 129 mm (1.65 x 3.5 x 5.07 in)
Weight	NPort IA5150-G2 models: 384 g (0.85 lb) NPort IA5250-G2 models: 394 g (0.87 lb) NPort IA5450-G2 models: 512 g (1.13 lb)

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	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

EMC	EN 55032/35
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 2 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV, Signal: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m; Signal: 10 V/m IEC 61000-4-8 PFMF IEC 61000-4-11
Hazardous Locations	ATEX, Class I Division 2, IECEx
Maritime	DNV[1]
Safety	IEC 62368-1 UL 62368-1 EN 62368-1
Vibration	IEC 60068-2-6 IEC 60068-2-64
Freefall	IEC 60068-2-6 IEC 60068-2-32 IEC 60068-2-34

Declaration

Green Product	RoHS, CRoHS, WEEE

MTBF

Time	NPort IA5150-G2(-T): 3,238,923 hrs NPort IA5150I-G2(-T): 3,156,944 hrs NPort IA5150-SFP-G2(-T): 3,109,327 hrs NPort IA5250-TB-G2(-T): 2,943,248 hrs NPort IA5250-G2(-T): 2,931,934 hrs NPort IA5150-S/M-SC-G2(-T): 2,889,487 hrs NPort IA5250I-TB-G2(-T): 2,809,979 hrs NPort IA5250I-G2(-T): 2,799,662 hrs NPort IA5450-TB-G2(-T): 2,377,791 hrs NPort IA5450-G2(-T): 2,363,042 hrs NPort IA5450I-TB-G2(-T): 2,208,607 hrs NPort IA5450I-G2(-T): 2,195,874 hrs
Standards	Telcordia Standard SR-332

Warranty

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

Package Contents

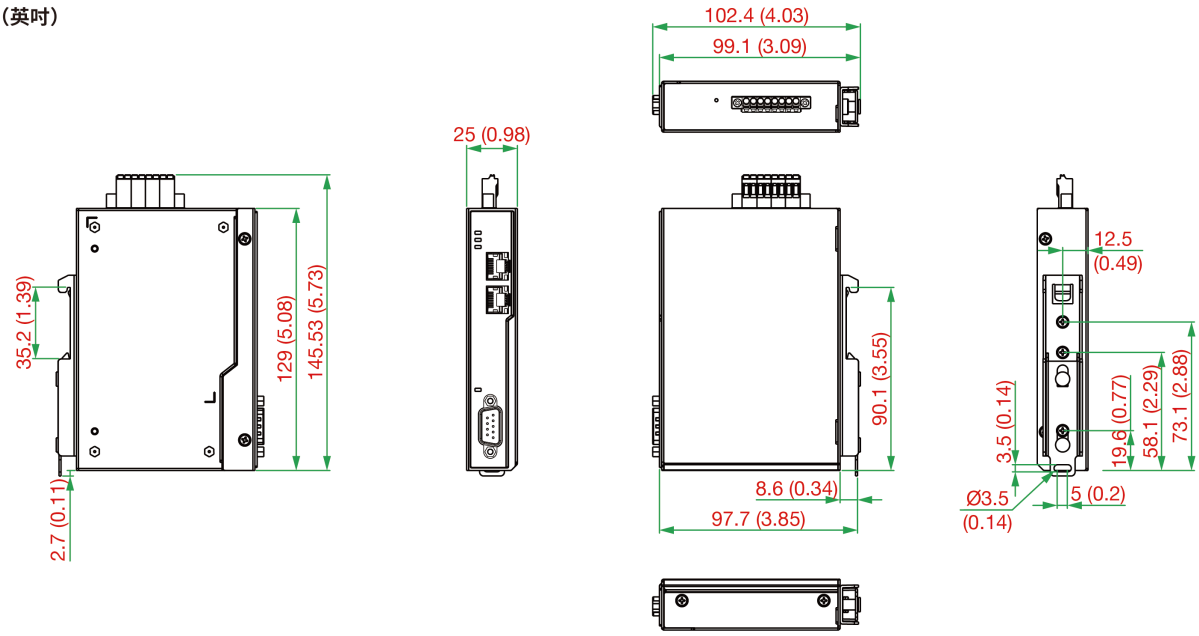
Device	1 x NPort IA5000-G2 Series device server
Documentation	1 x quick installation guide

1. 通過相關認證，支援 24VDC 電源輸入

尺寸

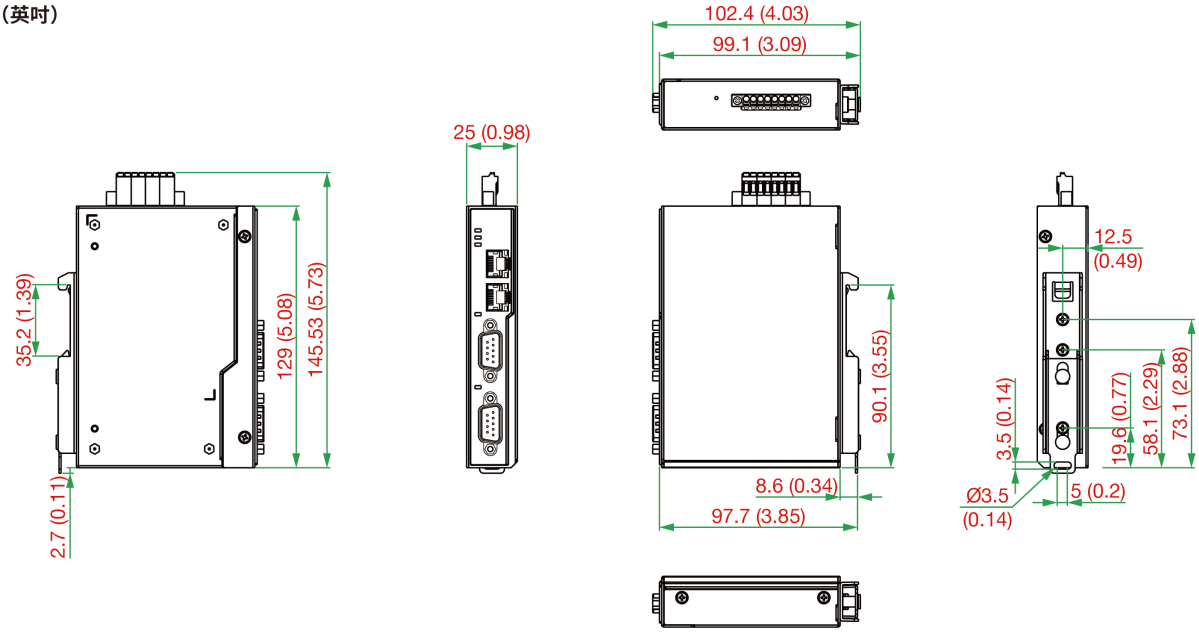
NPort IA5150-G2 型號

單位：公釐（英吋）



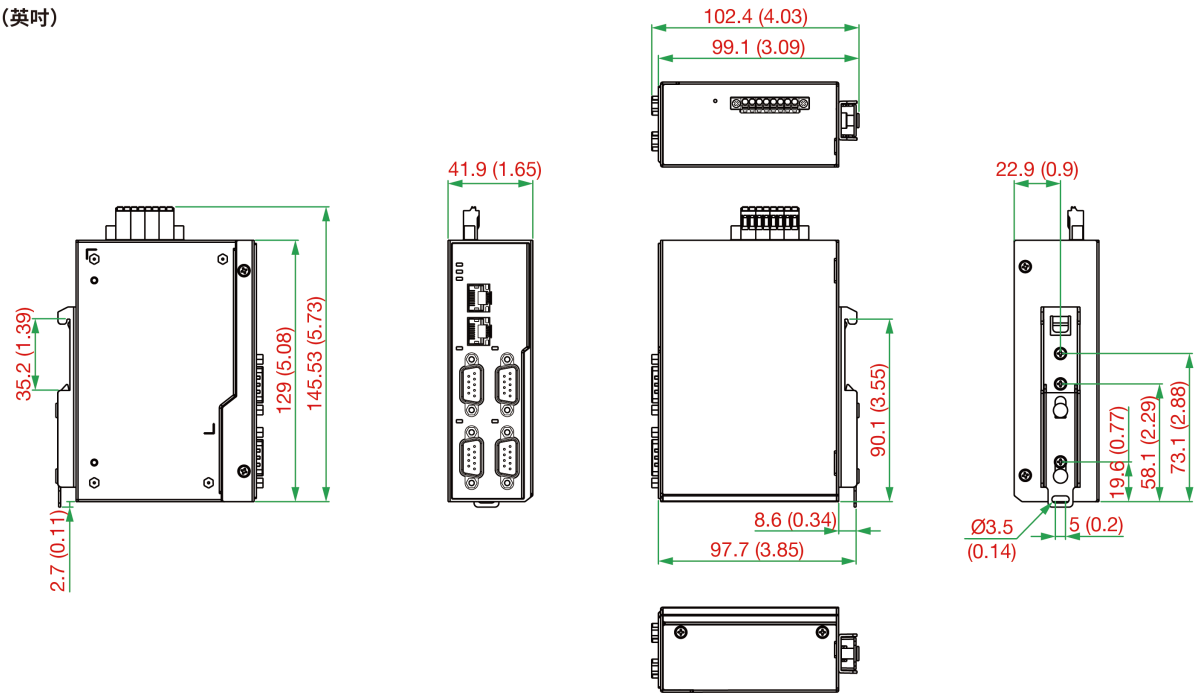
NPort IA5250-G2 型號

單位：公釐（英吋）



NPort IA5450-G2 型號

單位：公釐（英吋）



訂購資訊

Model Name	Ethernet Interface	No. of Serial Ports	Serial Standards	Serial Isolation	Operating Temperature
NPort IA5150-G2	2 x RJ45	1	RS-232/422/485	–	-10 to 60°C
NPort IA5150-G2-T	2 x RJ45	1	RS-232/422/485	–	-40 to 75°C
NPort IA5150I-G2	2 x RJ45	1	RS-232/422/485	2 kV	-10 to 60°C
NPort IA5150I-G2-T	2 x RJ45	1	RS-232/422/485	2 kV	-40 to 75°C
NPort IA5150-M-SC-G2	1 x Multi-SC, 1 x RJ45	1	RS-232/422/485	–	-10 to 60°C
NPort IA5150-M-SC-G2-T	1 x Multi-SC, 1 x RJ45	1	RS-232/422/485	–	-40 to 75°C
NPort IA5150-S-SC-G2	1 x Single-SC, 1 x RJ45	1	RS-232/422/485	–	-10 to 60°C
NPort IA5150-S-SC-G2-T	1 x Single-SC, 1 x RJ45	1	RS-232/422/485	–	-40 to 75°C
NPort IA5150-SFP-G2	1 x SFP, 1 x RJ45	1	RS-232/422/485	–	-10 to 60°C
NPort IA5150-SFP-G2-T	1 x SFP, 1 x RJ45	1	RS-232/422/485	–	-40 to 75°C
NPort IA5250-G2	2 x RJ45	2	RS-232/422/485	–	-10 to 60°C
NPort IA5250-G2-T	2 x RJ45	2	RS-232/422/485	–	-40 to 75°C
NPort IA5250I-G2	2 x RJ45	2	RS-232/422/485	2 kV	-10 to 60°C
NPort IA5250I-G2-T	2 x RJ45	2	RS-232/422/485	2 kV	-40 to 75°C
NPort IA5250-TB-G2	2 x RJ45	2 x 5-pin TB	RS-232/422/485	–	-10 to 60°C
NPort IA5250-TB-G2-T	2 x RJ45	2 x 5-pin TB	RS-232/422/485	–	-40 to 75°C
NPort IA5250I-TB-G2	2 x RJ45	2 x 5-pin TB	RS-232/422/485	2 kV	-10 to 60°C
NPort IA5250I-TB-G2-T	2 x RJ45	2 x 5-pin TB	RS-232/422/485	2 kV	-40 to 75°C
NPort IA5450-G2	2 x RJ45	4	RS-232/422/485	–	-10 to 60°C
NPort IA5450-G2-T	2 x RJ45	4	RS-232/422/485	–	-40 to 75°C
NPort IA5450I-G2	2 x RJ45	4	RS-232/422/485	2 kV	-10 to 60°C

Model Name	Ethernet Interface	No. of Serial Ports	Serial Standards	Serial Isolation	Operating Temperature
NPort IA5450I-G2-T	2 x RJ45	4	RS-232/422/485	2 kV	-40 to 75°C
NPort IA5450-TB-G2	2 x RJ45	4 x 5-pin TB	RS-232/422/485	–	-10 to 60°C
NPort IA5450-TB-G2-T	2 x RJ45	4 x 5-pin TB	RS-232/422/485	–	-40 to 75°C
NPort IA5450I-TB-G2	2 x RJ45	4 x 5-pin TB	RS-232/422/485	2 kV	-10 to 60°C
NPort IA5450I-TB-G2-T	2 x RJ45	4 x 5-pin TB	RS-232/422/485	2 kV	-40 to 75°C

配件（選購）

Cables

CBL-F9M9-150	DB9 female to DB9 male serial cable, 1.5 m
CBL-F9M9-20	DB9 female to DB9 male serial cable, 20 cm

Connectors

ADP-RJ458P-DB9F	DB9 female to RJ45 connector
Mini DB9F-to-TB	DB9 female to terminal block connector
LB-DB9F-G-01	Serial loopback DB9 adaptor

Power Cords

CBL-PJTB-10	Non-locking barrel plug to bare-wire cable

DIN-Rail Mounting Kits

DK-89-01	DIN-rail mounting kit with 1 plate (89 x 19 x 9 mm), 3 M3 x 5 mm screws

Wall-Mounting Kits

WK-178-01	Wall-mounting kit with 1 plate (178 x 25 x 1.5 mm), 3 M3 x 5 mm screws

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