

# NPort IA5000 系列

用於工業自動化的 1 埠和 2 埠序列裝置伺服器



## 特色與優點

- 通訊端模式：TCP server、TCP client、UDP
- 用於 2 線和 4 線 RS-485 的 ADDC (自動資料流向控制)
- 級聯乙太網路連接埠，輕鬆佈線 (僅適用於 RJ45 連接器)
- 備援直流電源輸入
- 透過繼電器輸出和電子郵件發出警告和警報
- 10/100BaseTX (RJ45) 或 100BaseFX (單模或多模，附 SC 連接器)
- IP30 等級外殼

## 認證

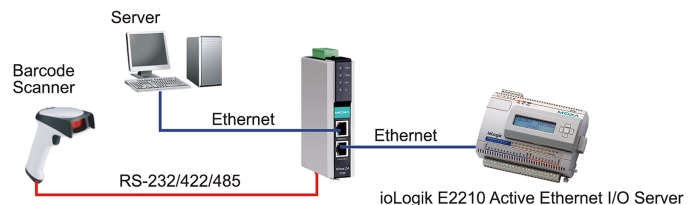


## 簡介

NPort® IA 裝置伺服器為工業自動化應用提供簡單可靠的序列到乙太網路連接。裝置伺服器可將任何序列裝置連接到乙太網路，且為確保與網路軟體的相容性，支援多種連接埠操作模式，包括 TCP 伺服器、TCP 用戶端和 UDP。NPort® IA 裝置伺服器堅如磐石的可靠性，成為建立對 RS-232/422/485 序列裝置 (例如 PLC、感測器、儀表、發動機、驅動器、條碼閱讀器和操作者顯示器) 網路存取的理想選擇。所有型號均採用精巧堅固的外殼，可以 DIN 導軌安裝。

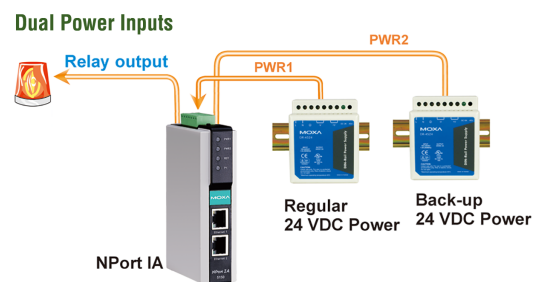
### 級聯乙太網路連接埠，輕鬆佈線 (10/100BaseTX 模型)

NPort® IA5150 和 IA5250 裝置伺服器具有兩個乙太網路連接埠，可作為乙太網路交換器連接埠。一個連接埠直接連接到網路或伺服器，另一個連接埠可連接到另一個 NPort® IA 裝置伺服器或另一個乙太網路裝置。雙乙太網路連接埠無需將每個裝置個別連接到單獨的乙太網路交換器，有助於降低佈線成本。



### 備援電源輸入

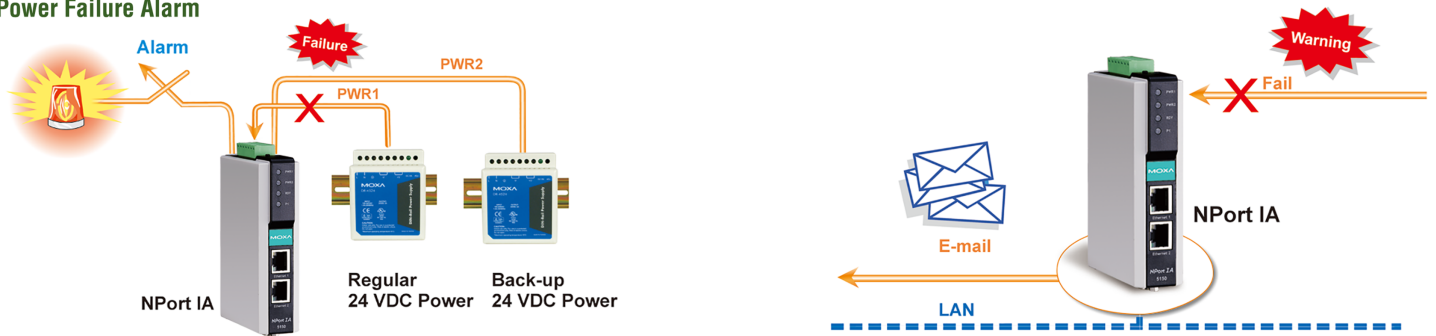
NPort® IA5000 裝置伺服器具兩個電源輸入，可同時連接到即時直流電源。若發生一個電源故障，另一個電源即自動接管。冗餘電源輸入有助於確保裝置伺服器不間斷運作。



### 繼電器輸出警告和電子郵件警報

當乙太網路連結或電源輸入發生問題，或 DCD 或 DSR 序列訊號發生變動時，內建繼電器輸出可用於警告管理員。Web 控制台會指明哪個乙太網路連結或電源輸入發生故障，或是哪個序列訊號已變更。偵測到異常時，也可發出電子郵件警告。這些功能作為寶貴工具，使維修工程師可對緊急情況迅速做出反應。

## Power Failure Alarm



## 乙太網路通訊光纖

NPort® IA5000 系列包含 100BaseFX 光纖型號，多模態型號支援最遠 5 公里的傳輸距離，而單一模態型號最遠 40 公里的傳輸距離。光纖非常適合工業應用，因其不受電磁雜訊和干擾的影響。針對處於高接地迴路電壓的環境，光纖提供了最佳的隔離保護，且由於不存在火花危險，因此在危險環境下使用光纖比銅線更為安全。

## 工業級認證

為確保在工業環境下安全可靠運行，NPort® IA5000 裝置伺服器獲多項工業認證，包括機械防護 IP30 等級、工控類產品 UL 508 安全認證，以及防爆認證等危險地點。認證包括 UL/cUL Class 1 Division 2 Groups A、B、C、D，以及 ATEX Class 1 Zone 2 和 IECEx Zone 2。

## 規格

### Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	2 (1 IP, Ethernet cascade, NPort IA-5150/5150I/5250/5250I)
Magnetic Isolation Protection	1.5 kV (built-in)
100BaseFX Ports (multi-mode SC connector)	NPort IA-5000-M-SC Models: 1 NPort IA-5000-M-ST Models: 1
100BaseFX Ports (single-mode SC connector)	NPort IA-5000-S-SC Models: 1

### Optical Fiber

		100BaseFX		
		Multi-Mode		Single-Mode
Fiber Cable Type	OM1	50/125 μm	G.652	
		800 MHz x km		
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) Windows Utility Telnet Console Serial Console
Management	DHCP Client IPv4 SMTP SNMPv1 Telnet ARP BOOTP DNS HTTP TCP/IP UDP ICMP Rtelnet
Windows Real COM Drivers	Windows 11/10/8.1/8/7/Vista/XP/ME/98/95 Windows Server 2022/2019/2016/2012 R2/2012/2008 R2/2008/2003/2000/NT Windows Embedded CE 5.0/6.0, Windows XP Embedded
Linux Real TTY Drivers	Kernel versions: 6.x, 5.x, 4.x, 3.x, 2.6.x and 2.4.x
Fixed TTY Drivers	macOS versions: 10.12 to 10.15, 11.x SCO UNIX, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X
Arm®-based Platform Support	Linux Kernel 5.x / 4.x
Virtual Machine	VMWare ESXi (Windows 11 / 10) VMware Fusion (Windows on macOS 10.12 ~ 11.x) Parallels Desktop (Windows on macOS 10.12 ~ 11.x)
Android API	Android 3.1.x and later
Time Management	SNTP
MIB	RFC1213, RFC1317

## Security Functions

Authentication	Local database (password only)
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## Serial Interface

Connector	NPort IA-5150: DB9 male for RS-232 and terminal block for RS-422/485 NPort IA-5250: DB9 male for RS-232/422/485
No. of Ports	NPort IA-5150 Models: 1 NPort IA-5250 Models: 2
Serial Standards	RS-232 RS-422 RS-485
Baudrate	Supports standard baudrates (unit=bps): 110, 134, 150, 300, 600, 1200, 1800, 2400, 4800, 7200, 9600, 19200, 38400, 57600, 115200, 230400
Data Bits	5, 6, 7, 8
Parity	None, Even, Odd, Space, Mark
Stop Bits	1, 1.5, 2
Flow Control	RTS/CTS (RS-232 only) DTR/DSR (RS-232 only) XON/XOFF

Terminator for RS-485	120 ohms
Pull High/Low Resistor for RS-485	1 kilo-ohm, 150 kilo-ohms
Isolation	2 kV (I models)
RS-485 Data Direction Control	ADDC (automatic data direction control)

### 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 IA-5150/IA-5150-T/IA-5250/IA-5250-T: 435 mA @ 12 VDC NPort IA-5150I/IA-5150I-T/IA-5150-S-SC/IA-5150-S-SC-T/IA-5150I-M-SC/IA-5150I-M-SC-T/IA-5150I-S-SC/IA-5150I-S-SC-T: 555 mA @ 12 VDC NPort IA-5250I/IA-5250I-T/IA-5150-M-SC/IA-5150-M-SC-T/IA-5150-M-ST/IA-5150-M-ST-T: 510 mA @ 12 VDC
No. of Power Inputs	2
Power Connector	Terminal block

### Relays

Contact Current Rating	Resistive load: 1 A @ 30 VDC
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### Physical Characteristics

Housing	Plastic
IP Rating	IP30
Dimensions	29 x 89.2 x 118.5 mm (0.82 x 3.51 x 4.57 in)
Weight	NPort IA-5150: 360 g (0.79 lb) NPort IA-5250: 380 g (0.84 lb)
Installation	DIN-rail mounting

### Environmental Limits

Operating Temperature	Standard Models: 0 to 60°C (32 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 167°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 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF

	IEC 61000-4-11
Safety	IEC 60950-1 EN 60950-1 EN 62368-1 UL 508
Maritime	DNV
Hazardous Locations	ATEX Class I Division 2 IECEX
Freefall	IEC 60068-2-32
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6 IEC 60068-2-64

#### Declaration

Green Product	RoHS, CRoHS, WEEE
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#### MTBF

Time	NPort IA-5150/IA-5150I Models: 1,349,710 hrs NPort IA-5150-M-SC/M-ST/S-SC Models: 1,175,887 hrs NPort IA-5150I-M-SC Models 768,343 hrs NPort IA-5150I-S-SC Models: 763,707 hrs NPort IA-5250/IA-5250I Models: 1,236,384 hrs
Standards	Telcordia (Bellcore) Standard TR/SR

#### Warranty

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

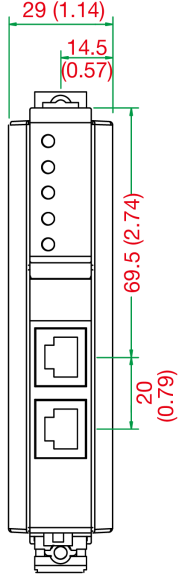
#### Package Contents

Device	1 x NPort IA-5000 Series device server
Documentation	1 x quick installation guide 1 x warranty card

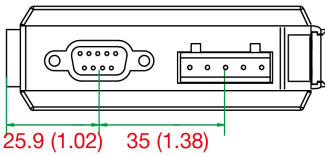
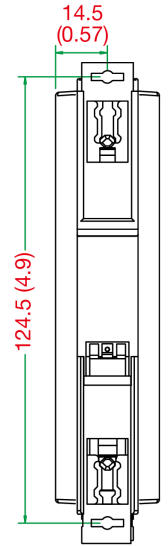
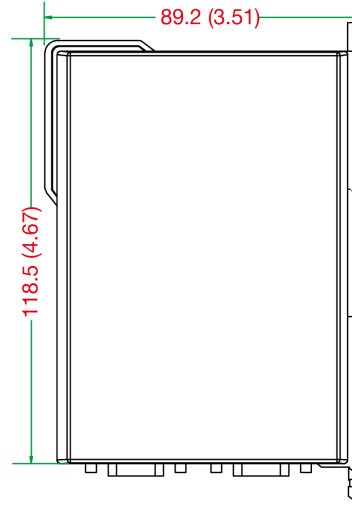
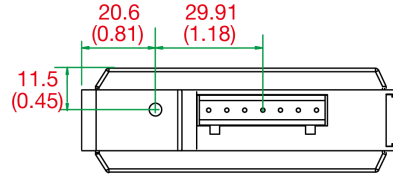
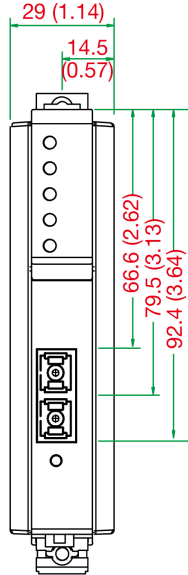
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單位：公釐 (英吋)

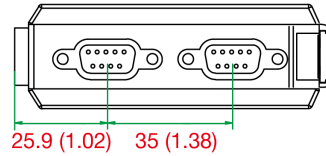
NPort IA-5150  
NPort IA-5150I  
NPort IA-5250  
NPort IA-5250I



NPort IA-5150-M-SC  
NPort IA-5150-S-SC  
NPort IA-5150I-M-SC  
NPort IA-5150I-S-SC  
NPort IA-5150-M-ST



NPort IA-5150  
NPort IA-5150I  
NPort IA-5150-M-SC  
NPort IA-5150-S-SC  
NPort IA-5150I-S-SC  
NPort IA-5150I-M-SC  
NPort IA-5150-M-ST



NPort IA-5250  
NPort IA-5250I

## 訂購資訊

Model Name	No. of Ethernet Ports	Ethernet Port Connector	Operating Temp.	No. of Serial Ports	Serial Isolation	Certification: Hazardous Locations
NPort IA-5150	2	RJ45	0 to 55°C	1	-	ATEX, C1D2, IECEx
NPort IA-5150-T	2	RJ45	-40 to 75°C	1	-	ATEX, C1D2, IECEx
NPort IA-5150I	2	RJ45	0 to 55°C	1	2 kV	ATEX, C1D2, IECEx
NPort IA-5150I-T	2	RJ45	-40 to 75°C	1	2 kV	ATEX, C1D2, IECEx
NPort IA-5150-M-SC	1	Multi-Mode SC	0 to 55°C	1	-	ATEX, C1D2, IECEx
NPort IA-5150-M-SC-T	1	Multi-Mode SC	-40 to 75°C	1	-	ATEX, C1D2, IECEx
NPort IA-5150I-M-SC	1	Multi-Mode SC	0 to 55°C	1	2 kV	ATEX, C1D2, IECEx
NPort IA-5150I-M-SC-T	1	Multi-Mode SC	-40 to 75°C	1	2 kV	ATEX, C1D2, IECEx
NPort IA-5150-S-SC	1	Single-mode SC	0 to 55°C	1	-	ATEX, C1D2, IECEx

Model Name	No. of Ethernet Ports	Ethernet Port Connector	Operating Temp.	No. of Serial Ports	Serial Isolation	Certification: Hazardous Locations
NPort IA-5150-S-SC-T	1	Single-mode SC	-40 to 75°C	1	-	ATEX, C1D2, IECEx
NPort IA-5150I-S-SC	1	Single-mode SC	0 to 55°C	1	2 kV	ATEX, C1D2, IECEx
NPort IA-5150I-S-SC-T	1	Single-mode SC	-40 to 75°C	1	2 kV	ATEX, C1D2, IECEx
NPort IA-5150-M-ST	1	Multi-Mode ST	0 to 55°C	1	-	ATEX, C1D2, IECEx
NPort IA-5150-M-ST-T	1	Multi-Mode ST	-40 to 75°C	1	-	ATEX, C1D2, IECEx
NPort IA-5250	2	RJ45	0 to 55°C	2	-	ATEX, C1D2, IECEx
NPort IA-5250-T	2	RJ45	-40 to 75°C	2	-	ATEX, C1D2, IECEx
NPort IA-5250I	2	RJ45	0 to 55°C	2	2 kV	ATEX, C1D2, IECEx
NPort IA-5250I-T	2	RJ45	-40 to 75°C	2	2 kV	ATEX, C1D2, IECEx

## 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
CBL-RJ458P-100	8-pin RJ45 CAT5 Ethernet cable, 1 m
CBL-RJ45SF9-150	8-pin RJ45 to DB9 female serial cable with shielding, 1.5m

### Connectors

ADP-RJ458P-DB9F	DB9 female to RJ45 connector
Mini DB9F-to-TB	DB9 female to terminal block connector

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