

NPort IAW5000A-I/O 系列

1/2 RS-232/422/485 IEEE 802.11a/b/g/n 無線裝置伺服器，具備 6 個或 12 個數位 IO



特色與優點

- 具有 6 或 12 個數位 IO 的串列裝置伺服器
- 可將任何串列裝置連接至 IEEE 802.11a/b/g 網路
- 透過通用 MQTT 將串列/I/O 數據連接到雲端
- 支援使用內建裝置 SDK 的 MQTT 連接到 Azure/Alibaba Cloud
- 支援使用 JSON 和 Raw 數據格式的 TLS 和憑證進行的 MQTT 連接
- 用於配置備份/複製和事件日誌的 microSD 卡，以及雲端連網中斷時的數據緩衝
- 支援重新封裝串列埠數據大小（最大 4K），儲存需要傳送到雲端平台的數據封包數量
- 支援備援 DC 電源輸入與 1 點 relay 輸出
- 透過 WEP、WPA 和 WPA2 保護存取資料的安全性
- 無線 Client 功能，利於靈活整合
- 4 kV 串列突波保護

認證



簡介

NPort IA5000A-I/O 串列裝置伺服器內建數位 I/O，可在需要將現場串列裝置與乙太網路或雲端平台整合時，提供最大彈性。雲端裝置伺服器可以使用通用 MQTT 或第三方雲端服務（例如 Azure 和 Alibaba Cloud）與工業物聯網應用程式進行通訊。這些裝置伺服器整合數位 I/O 相當適合各種工業資料擷取應用。裝置上的 DI/DO 可使用 Modbus TCP 通訊協定透過 TCP/IP 加以控制，而且可透過網頁進行設定和保護。裝置也可用作 Windows/Linux PC 的 COM 連接埠，與舊有應用相容。

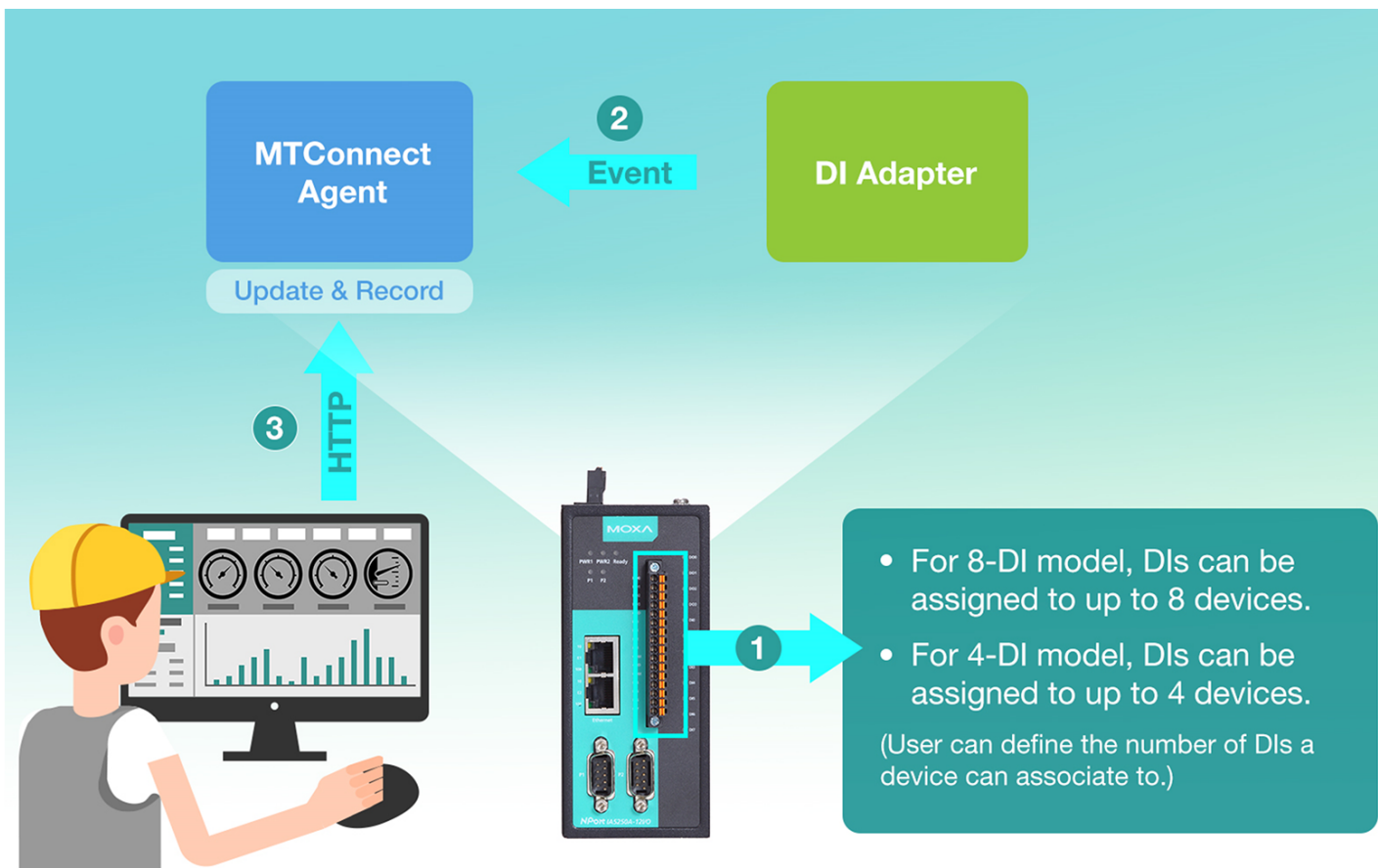
所有型號都相當堅固耐用，可使用 DIN 軌道安裝，而且採用備源電源輸入的設計，能夠確保應用於工業應用時運作不中斷。

無線用戶端

設備伺服器配備一個乙太網路連接埠，可在串列線路、LAN 和 WAN 之間無縫傳輸資料，使用單一 IP 位址即可橋接 LAN 和 WLAN 介面。

支援用於監控數位輸入的 MTConnect 通訊協定

MTConnect 專為現場應用程式設計，能夠將現場數據轉換為符合 MTConnect 的任何軟體應用程式都可以瞭解的標準格式。透過符合 MTConnect 的介面（名稱、類型、說明等等）定義數據，就無需在每個應用程式中重新定義數據。對於不支援 MTConnect 的傳統工具機，一般的做法是透過感測器連接和 I/O 取得與工具機相關的數據。Moxa NPort IAW5000A-I/O 支援裝置上所有數位輸入的已啟用 MTConnect 的功能，並提供使用者可配置的介面，藉以定義需要將哪些數據和適當的 MTConnect 標籤關聯到數位輸入。



透過 SSH/HTTPS 保護遠端管理和配置

未經授權的存取是系統管理員最棘手的問題之一。除了 IP 過濾和密碼保護之外，NPort IAW5000A-I/O 系列還支援 SSH 和 HTTPS，以防範駭客入侵。若要安全傳輸控制訊息，請使用支援 HTTPS 的網頁瀏覽器 (例如，Internet Explorer) 開啟 Web 主控台。您還可以使用支援 SSH 的終端模擬器開啟串列或 Telnet 主控台 (例如 PuTTY)。

選取介於 50 bps 與 921.6 kbps 之間的任何傳輸速率

大多數的設備伺服器僅支援固定的串列傳輸速率。不過，部份應用需要採用特別的傳輸速率，例如 250 kbps 或 500 kbps。藉由 NPort IAW5000A-I/O 系列，您可以使用介於 50 kbps 與 921.6 kbps 之間的任何傳輸速率。如果設備的傳輸速率不是標準速率，請從下拉式清單中選取「其他」，然後輸入傳輸速率。

規格

Input/Output Interface

Digital Input Channels	6I/O Models: 4 12I/O Models: 8
Digital Output Channels	6I/O Models: 2 12I/O Models: 4
Isolation	3k VDC or 2k Vrms
Alarm Contact Channels	Relay output with current carrying capacity of 2 A @ 30 VDC

Digital Inputs

Sensor Type	Dry contact Wet contact (NPN or PNP)
Dry Contact	On: short to GND Off: open
Wet Contact (DI to COM)	On: 10 to 30 VDC Off: 0 to 3 VDC
I/O Mode	DI or event counter

Counter Frequency	20 Hz
Digital Filtering Time Interval	Software configurable
Digital Outputs	
I/O Mode	DO or pulse output
I/O Type	Sink
Over-Current Protection	2.6 A per channel @ 25°C
Over-Temperature Shutdown	175°C (typical), 150°C (min.)
Over-Voltage Protection	45 VDC
Ethernet Interface	
10/100BaseT(X) Ports (RJ45 connector)	1 Auto MDI/MDI-X connection
Magnetic Isolation Protection	1.5 kV (built-in)
Ethernet Software Features	
Industrial Protocols	MQTT, MTConnect
Configuration Options	Web Console (HTTP/HTTPS), Windows Utility, Telnet Console, Serial Console
Management	DHCP Client, DNS, HTTP, IPv4, SMTP, SNMPv1/v2c/v3, TCP/IP, Telnet, UDP, ICMP
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10/11 (x86/x64), Windows 2008 R2/2012/2012 R2/2016/2019 (x64), Windows Server 2022, Windows Embedded CE 5.0/6.0, Windows XP Embedded
Linux Real TTY Drivers	Kernel versions: 2.4.x, 2.6.x, 3.x, 4.x, and 5.x
Fixed TTY Drivers	SCO UNIX, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X
Android API	Android 3.1.x and later
MIB	MIB-II
MQTT	
Mode	Alibaba IoT Platform Device, Azure IoT Hub Device, Publisher/Subscriber of MQTT
Version Supported	v3.1.1
QoS Level	QoS 0-2
Secure Transmission	TLS (1.0, 1.1, 1.2) encryption with user's root CA, Client certificate, Private key
MQTT General Features	Clean Session, Keep Alive, Last Will Message, Retain Message
Security Functions	
Authentication	Local database RADIUS
Encryption	HTTPS, AES-128, AES-256, HMAC, RSA-1024, SHA-1, SHA-256, SHA-384
Security Protocols	SNMPv3 SSHv2 HTTPS (TLS 1.2)

Serial Interface

Connector	DB9 male
No. of Ports	NPort IAW5150A models: 1 NPort IAW5250A models: 2
Serial Standards	RS-232, RS-422, RS-485
Baudrate	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, XON/XOFF
Pull High/Low Resistor for RS-485	1 kilo-ohm, 150 kilo-ohms
Terminator for RS-485	120 ohms
Surge	4 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

WLAN Interface

WLAN Standards	802.11a/b/g/n
Receiver Sensitivity for 802.11a (measured at 5.680 GHz)	Typ. -91 @ 6 Mbps Typ. -74 @ 54 Mbps
Receiver Sensitivity for 802.11b (measured at 2.437 GHz)	Typ. -92 dBm @ 1 Mbps Typ. -84 dBm @ 11 Mbps
Receiver Sensitivity for 802.11g (measured at 2.437 GHz)	Typ. -91 dBm @ 6 Mbps Typ. -73 dBm @ 54 Mbps
Receiver Sensitivity for 802.11n (2.4 GHz; measured at 2.437 GHz)	Typ. -89 dBm @ 6.5 Mbps (20 MHz) Typ. -71 dBm @ 72.2 Mbps (20 MHz)
Receiver Sensitivity for 802.11n (5 GHz; measured at 5.680 GHz)	Typ. -89 dBm @ 6.5 Mbps (20 MHz) Typ. -71 dBm @ 72.2 Mbps (20 MHz) Typ. -85 dBm @ 13.5 Mbps (40 MHz) Typ. -67 dBm @ 150 Mbps (40 MHz)
Spread Spectrum	DSSS, OFDM
Transmission Distance	Up to 100 meters (in open areas)
Transmission Rate	802.11a/g: 54 Mbps 802.11b: 11 Mbps 802.11n: 6.5 to 150 Mbps
Transmitter Power for 802.11b	16±1.5 dBm @ 1 Mbps 16±1.5 dBm @ 11 Mbps
Transmitter Power for 802.11g	16±1.5 dBm @ 6 Mbps 14±1.5 dBm @ 54 Mbps

Transmitter Power for 802.11a	15±1.5 dBm @ 6 Mbps 14±1.5 dBm @ 54 Mbps
Transmitter Power for 802.11n (2.4 GHz)	16 dBm @ 1.5 Mbps (6.5 MHz) 12 dBm @ 1.5 Mbps (72.2 MHz)
Transmitter Power for 802.11n (5 GHz)	15 dBm @ 1.5 Mbps (6.5 MHz) 12 dBm @ 1.5 Mbps (150 MHz)
Wireless Security	WEP encryption (64-bit and 128-bit) WPA/WPA2-Enterprise (IEEE 802.1X/RADIUS, TKIP, AES) WPA/WPA2-Personal
WLAN Modes	Ad-hoc Mode, Infrastructure mode

Antenna Characteristics

Connector	RP-SMA (male)
Antenna Type	Omni-directional

Memory

microSD Slot	Up to 32 GB (SD 2.0 compatible)
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Power Parameters

Connection	Removable terminal block
Input Voltage	12 to 48 VDC
Input Current	300 mA @ 12 VDC

Reliability

Automatic Reboot Trigger	Built-in WDT
Alert Tools	Built-in buzzer and RTC (real-time clock)

Physical Characteristics

Housing	Metal
Dimensions	59.6 x 101.7 x 134 mm (2.35 x 4 x 5.28 in)
Weight	NPort IAW5150A-6I/O Models: 740 g (1.63 lb) NPort IAW5250A-6I/O Models: 760 g (1.68 lb) NPort IAW5150A-12I/O Models: 760 g (1.68 lb) NPort IAW5250A-12I/O Models: 780 g (1.72 lb)
Installation	Wall mounting (with optional kit), DIN-rail mounting

Environmental Limits

Operating Temperature	0 to 55°C (32 to 131°F)
Storage Temperature (package included)	-40 to 75°C (-40 to 167°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

EMC	EN 61000-6-2/-6-4
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 1 kV; Signal: Ethernet: 2 kV, Serial: 4 kV

	IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Radio Frequency	EN 300 328, EN 301 893
Safety	EN 60950-1, UL 60950-1

Declaration

Green Product	RoHS, CRoHS, WEEE
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MTBF

Time	NPort IAW5150A-6I/O Models: 282,087 hours NPort IAW5150A-12I/O Models: 277,975 hours NPort IAW5250A-6I/O Models: 237,037 hours NPort IAW5250A-12I/O Models: 234,130 hours
Standards	Telcordia (Bellcore) Standard TR/SR

Warranty

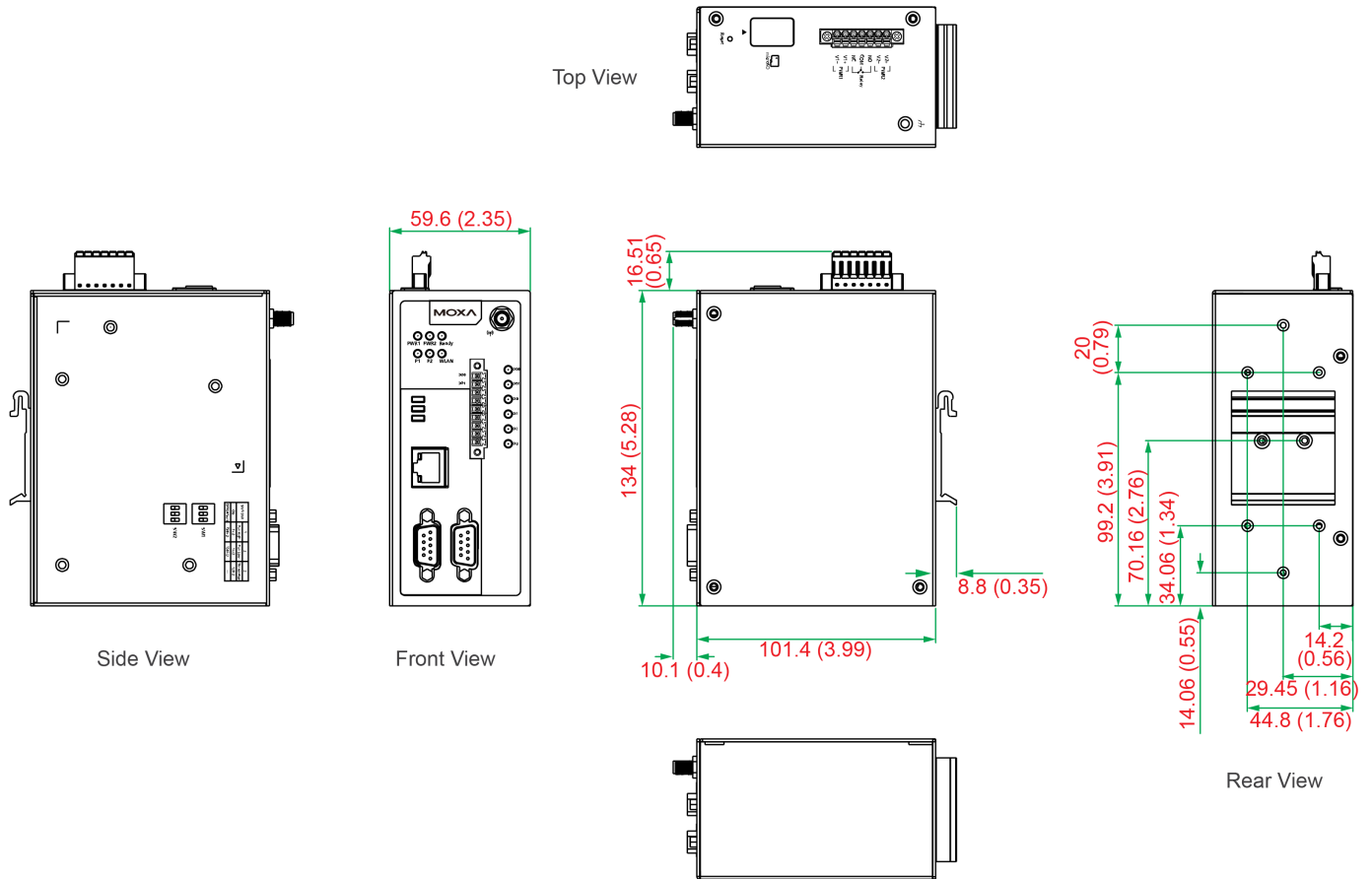
Warranty Period	5 years
Details	See www.moxa.com/tw/warranty

Package Contents

Device	1 x NPort IAW5000A-I/O Series device server
Antenna	1 x 2.4/5 GHz antenna
Documentation	1 x quick installation guide 1 x warranty card

尺寸

單位：公釐（英吋）



訂購資訊

Model Name	No. of Serial Ports	No. of DIs	No. of Dos	Wi-Fi Standards	WLAN Channels
NPort IAW5150A-6I/O-CN	1	4	2	802.11a/b/g/n	CN
NPort IAW5150A-6I/O-EU	1	4	2	802.11a/b/g/n	EU
NPort IAW5150A-6I/O-JP	1	4	2	802.11a/b/g/n	JP
NPort IAW5150A-6I/O-US	1	4	2	802.11a/b/g/n	US
NPort IAW5150A-12I/O-CN	1	8	4	802.11a/b/g/n	CN
NPort IAW5150A-12I/O-EU	1	8	4	802.11a/b/g/n	EU
NPort IAW5150A-12I/O-JP	1	8	4	802.11a/b/g/n	JP
NPort IAW5150A-12I/O-US	1	8	4	802.11a/b/g/n	US
NPort IAW5250A-6I/O-CN	2	4	2	802.11a/b/g/n	CN
NPort IAW5250A-6I/O-EU	2	4	2	802.11a/b/g/n	EU
NPort IAW5250A-6I/O-JP	2	4	2	802.11a/b/g/n	JP
NPort IAW5250A-6I/O-US	2	4	2	802.11a/b/g/n	US
NPort IAW5250A-12I/O-CN	2	8	4	802.11a/b/g/n	CN
NPort IAW5250A-12I/O-EU	2	8	4	802.11a/b/g/n	EU
NPort IAW5250A-12I/O-JP	2	8	4	802.11a/b/g/n	JP
NPort IAW5250A-12I/O-US	2	8	4	802.11a/b/g/n	US

配件 (選購)

Antennas

ANT-WDB-ARM-02	2.4/5 GHz, omni-directional rubber duck antenna, 2 dBi, RP-SMA (male)
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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

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

Power Supplies

DR-120-24	120W/2.5A DIN-rail 24 VDC power supply with universal 88 to 132 VAC or 176 to 264 VAC input by switch, or 248 to 370 VDC input, -10 to 60°C operating temperature
DR-4524	45W/2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC or 120 to 370 VDC input, -10 to 50°C operating temperature
DR-75-24	75W/3.2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC or 120 to 370 VDC input, -10 to 60°C operating temperature

Wall-Mounting Kits

WK-51-01	Wall mounting kit with 2 plates (51.6 x 67 x 2 mm) and 6 screws
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