

NPort IA5000A Series

1, 2, and 4-port serial device servers for industrial automation



Features and Benefits

- 2 Ethernet ports with the same IP or dual IP addresses for network redundancy
- C1D2, ATEX, and IECEx certified for harsh industrial environments
- Cascading Ethernet ports for easy wiring
- Enhanced surge protection for serial, LAN, and power
- Screw-type terminal blocks for secure power/serial connections
- Redundant DC power inputs
- Warnings and alerts by relay output and email
- 2 kV isolation for serial signals (isolation models)
- -40 to 75°C operating temperature range (-T models)

Certifications

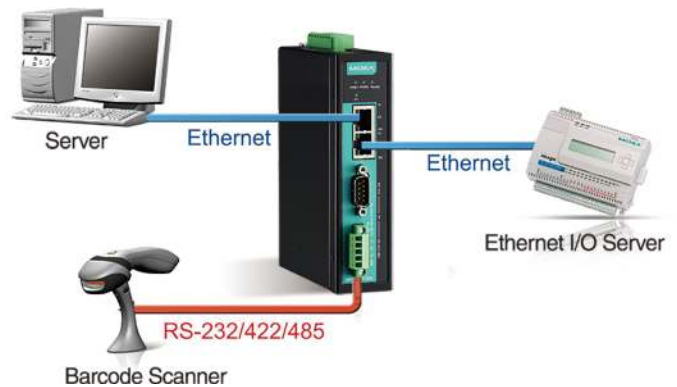


Introduction

The NPort IA5000A device servers are designed for connecting industrial automation serial devices, such as PLCs, sensors, meters, motors, drives, barcode readers, and operator displays. The device servers are solidly built, come in a metal housing and with screw connectors, and provide full surge protection. The NPort IA5000A device servers are extremely user-friendly, making simple and reliable serial-to-Ethernet solutions possible.

Cascading Ethernet Ports Make Wiring Easy

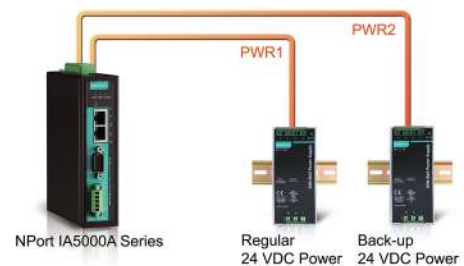
The NPort IA5000A device servers each have two Ethernet ports that can be used as Ethernet switch ports. One port connects directly to the network or server, and the other port can be connected to either another NPort IA device server or another Ethernet device. The dual Ethernet ports help reduce wiring costs by eliminating the need to connect each device to a separate Ethernet switch.



Redundant Power Inputs

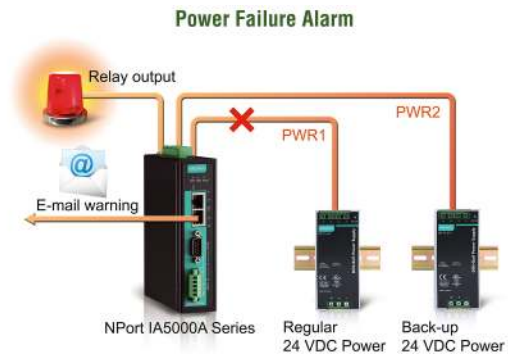
The NPort IA5000A Series of device servers have two power inputs that can be connected simultaneously to live DC power sources. If one power source fails, the other source takes over automatically. Redundant power inputs help ensure uninterrupted operation of your device server.

Dual Power Inputs



Relay Output Warning and Email Alerts

The built-in relay output can be used to alert administrators when the network is down, when power failure occurs, or when there is a change in the DCD or DSR serial signals. An email warning can also be issued when an abnormality is detected. These functions are valuable tools that enable maintenance engineers to react promptly to emergency situations.



Surge Protection for Serial, Ethernet, and Power

Moxa's leading-edge surge immunity solution, which is applied to the NPort® IA5000A's serial, power, and Ethernet lines, is tested and proven compliant with IEC 61000-4-5. This advanced surge protection provides a robust serial-to-Ethernet solution that can protect electrical devices from voltage spikes and resist electrical interference, such as in oil, gas, and power automation applications.

Industrial-grade Certification

To ensure safe and reliable operation in industrial environments, the NPort® IA5000A device servers have obtained various industrial certifications, including an IP30 rating for mechanical protection and UL 508 safety certification for industrial control equipment. In addition, these device servers are UL/cUL listed (for Class 1, Division 2, Groups A,B,C,D), ATEX Class 1 Zone 2, and IECEx compliant for use in hazardous locations.

Specifications

Ethernet Interface

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|--------------------------------------|--|
| 10/100Base(T) Ports (RJ45 connector) | Supports 2 IP addresses Auto MDI/MDI-X connection |
| Magnetic Isolation Protection | 1.5 kV (built-in) |

Ethernet Software Features

| | |
|--------------------------|---|
| Configuration Options | Serial Console, Telnet Console, Web Console (HTTP/HTTPS), Windows Utility |
| Management | ARP, BOOTP, DHCP Client, DNS, HTTP, HTTPS, ICMP, IPv4, LLDP, Rtelnet, SMTP, SNMPv1/v2c, TCP/IP, Telnet, UDP |
| Filter | IGMP v1/v2 |
| Windows Real COM Drivers | Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), 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 |
| Time Management | SNTP |

Serial Interface

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|------------------|--|
| Connector | NPort IA5150A Series: DB9 male (RS-232), Terminal Block (RS-422/485) NPort IA5250A Series: DB9 male (RS-232/422/485) NPort IA5450A Series: DB9 male (RS-232/422/485) |
| No. of Ports | NPort IA5150A Series: 1 NPort IA5250A Series: 2 NPort IA5450A Series: 4 |
| Serial Standards | RS-232, RS-422, RS-485 |
| Operation Modes | Disabled, Ethernet Modem, Pair Connection, Real COM, Reverse Telnet, RFC2217, TCP Client, TCP Server, UDP |

| | |
|-----------------------------------|--|
| Baudrate | Supports standard baudrates (unit=bps): 50, 75, 110, 134, 150, 300, 600, 1200, 1800, 2400, 4800, 7200, 9600, 19200, 38400, 57600, 115200, 230.4k, 460.8k, 921.6k |
| Data Bits | 5, 6, 7, 8 |
| Stop Bits | 1, 1.5, 2 |
| Parity | None, Even, Odd, Space, Mark |
| Flow Control | None, RTS/CTS (RS-232 only), DTR/DSR (RS-232 only), XON/XOFF |
| Isolation | NPort IA5150AI/IA5250AI/IA5450AI Series: 2 kV (I models) |
| RS-485 Data Direction Control | ADDC® (automatic data direction control) |
| Pull High/Low Resistor for RS-485 | 1 kilo-ohm, 150 kilo-ohms |
| Terminator for RS-485 | 120 ohms |

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 Current | NPort IA5150A Series: 220 mA @ 12 VDC NPort IA5150AI Series: 225 mA @ 12 VDC NPort IA5250A Series: 250 mA @ 12 VDC NPort IA5250AI Series: 290 mA @ 12 VDC NPort IA5450A Series: 374 mA @ 12 VDC NPort IA5450AI Series: 512 mA @ 12 VDC |
| Input Voltage | 12 to 48 VDC |
| No. of Power Inputs | 2 |
| Power Connector | Terminal block |

Physical Characteristics

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|--------------|---|
| Housing | Metal |
| Dimensions | NPort IA5150A/IA5250A Series: 36 x 105 x 140 mm (1.42 x 4.13 x 5.51 in) NPort IA5450A Series: 45.8 x 134 x 105 mm (1.8 x 5.28 x 4.13 in) |
| Weight | NPort IA5150A Series: 475 g (1.05 lb) NPort IA5250A Series: 485 g (1.07 lb) NPort IA5450A Series: 560 g (1.23 lb) |
| Installation | DIN-rail mounting, Wall mounting (with optional kit) |

Environmental Limits

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|--|---|
| 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 75°C (-40 to 167°F) |
| Ambient Relative Humidity | 5 to 95% (non-condensing) |

Standards and Certifications

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|---------------------|--|
| EMC | EN 55032/24 |
| 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: 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 DIPs |
| Hazardous Locations | NPort IA5100A/IA5200A models: UL/cUL Class I Division 2 Groups A/B/C/D, ATEX Zone 2 NPort IA5100A-IEX/IA5200A-IEX models: UL/cUL Class I Division 2 Groups A/B/C/D, ATEX Zone 2, IECEx NPort IA5400A Series: UL/cUL Class I Division 2 Groups A/B/C/D, ATEX Zone 2, IECEx, UL/cUL Class I Division 2 Groups A/B/C/D, ATEX Zone 2 |
| Safety | UL 508 |
| Vibration | IEC 60068-2-6 |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-32 |

Declaration

| | |
|---------------|-------------------|
| Green Product | RoHS, CRoHS, WEEE |
|---------------|-------------------|

MTBF

| | |
|-----------|-------------------------------------|
| Time | 262,805 hrs |
| Standards | Telcordia (Bellcore) Standard TR/SR |

Warranty

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

Package Contents

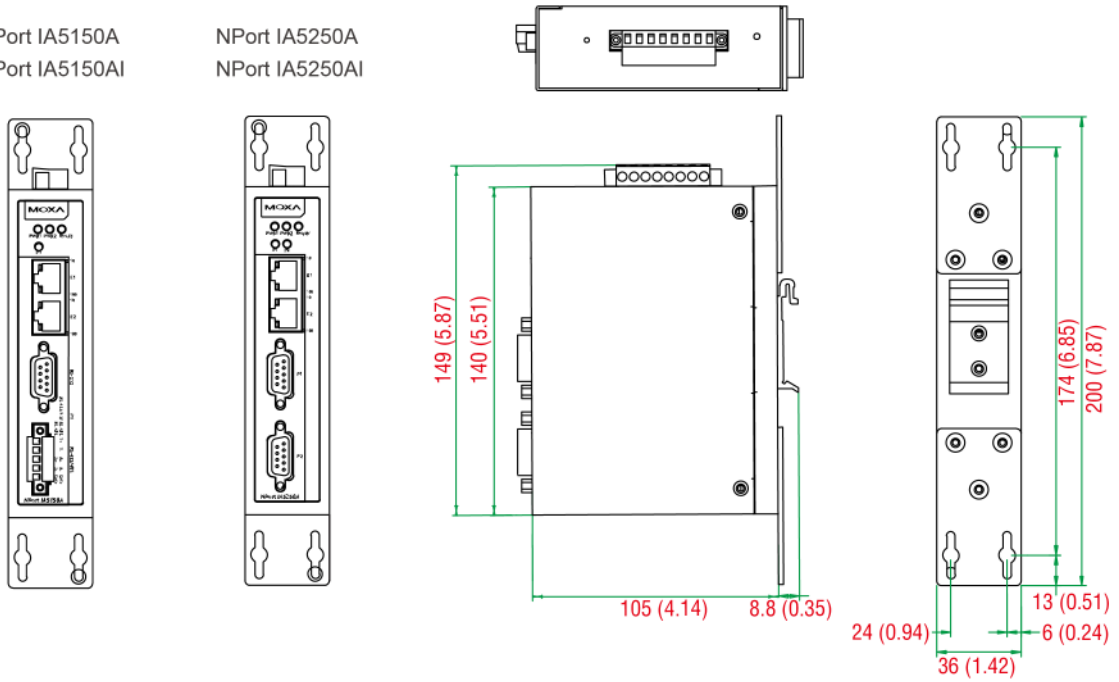
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|---------------|---|
| Device | 1 x NPort IA5000A Series device server |
| Documentation | 1 x document and software CD 1 x quick installation guide 1 x warranty card |

Dimensions

Unit: mm (inch)

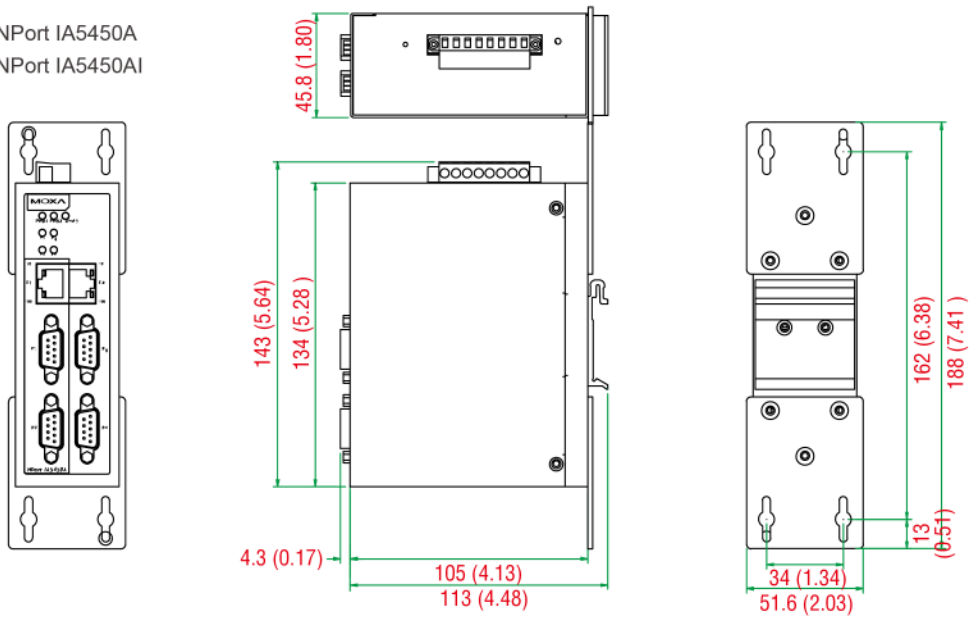
NPort IA5150A
NPort IA5150AI

NPort IA5250A
NPort IA5250AI



Unit: mm (inch)

NPort IA5450A
NPort IA5450AI



Ordering Information

| Model Name | Operating Temp. | Serial Standards | Serial Isolation | No. of Serial Ports | Certification: Hazardous Locations |
|----------------------|-----------------|------------------|------------------|---------------------|------------------------------------|
| NPort IA5150A | 0 to 60°C | RS-232/422/485 | - | 1 | ATEX, C1D2 |
| NPort IA5150A-T | -40 to 75°C | RS-232/422/485 | - | 1 | ATEX, C1D2 |
| NPort IA5150AI | 0 to 60°C | RS-232/422/485 | 2 kV | 1 | ATEX, C1D2 |
| NPort IA5150AI-T | -40 to 75°C | RS-232/422/485 | 2 kV | 1 | ATEX, C1D2 |
| NPort IA5150A-IEEx | 0 to 60°C | RS-232/422/485 | - | 1 | ATEX, C1D2, IECEx |
| NPort IA5150A-T-IEEx | -40 to 75°C | RS-232/422/485 | - | 1 | ATEX, C1D2, IECEx |

| Model Name | Operating Temp. | Serial Standards | Serial Isolation | No. of Serial Ports | Certification: Hazardous Locations |
|-----------------------|-----------------|------------------|------------------|---------------------|------------------------------------|
| NPort IA5150AI-IEEX | 0 to 60°C | RS-232/422/485 | 2 kV | 1 | ATEX, C1D2, IECEx |
| NPort IA5150AI-T-IEEX | -40 to 75°C | RS-232/422/485 | 2 kV | 1 | ATEX, C1D2, IECEx |
| NPort IA5250A | 0 to 60°C | RS-232/422/485 | - | 2 | ATEX, C1D2 |
| NPort IA5250A-T | -40 to 75°C | RS-232/422/485 | - | 2 | ATEX, C1D2 |
| NPort IA5250AI | 0 to 60°C | RS-232/422/485 | 2 kV | 2 | ATEX, C1D2 |
| NPort IA5250AI-T | -40 to 75°C | RS-232/422/485 | 2 kV | 2 | ATEX, C1D2 |
| NPort IA5250A-IEEX | 0 to 60°C | RS-232/422/485 | - | 2 | ATEX, C1D2, IECEx |
| NPort IA5250A-T-IEEX | -40 to 75°C | RS-232/422/485 | - | 2 | ATEX, C1D2, IECEx |
| NPort IA5250AI-IEEX | 0 to 60°C | RS-232/422/485 | 2 kV | 2 | ATEX, C1D2, IECEx |
| NPort IA5250AI-T-IEEX | -40 to 75°C | RS-232/422/485 | 2 kV | 2 | ATEX, C1D2, IECEx |
| NPort IA5450A | 0 to 60°C | RS-232/422/485 | - | 4 | ATEX, C1D2, IECEx |
| NPort IA5450A-T | -40 to 75°C | RS-232/422/485 | - | 4 | ATEX, C1D2, IECEx |
| NPort IA5450AI | 0 to 60°C | RS-232/422/485 | 2 kV | 4 | ATEX, C1D2, IECEx |
| NPort IA5450AI-T | -40 to 75°C | RS-232/422/485 | 2 kV | 4 | ATEX, C1D2, IECEx |

Accessories (sold separately)

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 DB25 male serial cable with shielding, 1.5m |

Connectors

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

Power Cords

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

Power Supplies

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|-----------|---|
| 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-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-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-36-02 | DIN-rail/wall-mounting kit, 2 plates, 6 screws Applicable Models: NPort IA5150A NPort IA5250A |
| WK-51-01 | Wall mounting kit with 2 plates (51.6 x 67 x 2 mm) and 6 screws Applicable Models: NPort IA5450A |

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