

# NPort IA5000A-I/O Series

**1/2-port RS-232/422/485 device server with 6 or 12 digital I/Os**



- > 6 or 12 digital I/Os to collect local data for status monitoring
- > Redundant dual DC power inputs and relay output supported
- > Cascading Ethernet ports for easy wiring
- > MicroSD for configuration backup
- > Warning by relay output and email
- > 4 kV serial surge protection



## Overview

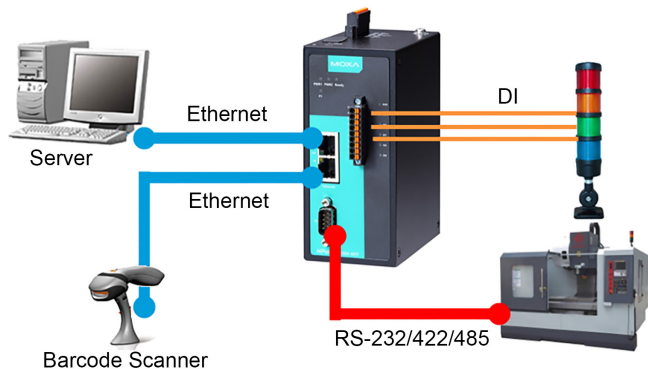
The NPort IA5000A-I/O serial device servers, which have built-in digital I/Os, provide maximum flexibility when you need to integrate serial equipment in the field with an Ethernet network. The combination of digital I/Os makes the device servers well-suited for a variety of industrial data acquisition applications. The DI/Os on the device can be controlled over TCP/IP using the Modbus TCP protocol and can be configured and secured from a web browser. The device can also be

installed as a COM Port (patented Real COM) on a Windows/Linux PC to make it compatible with legacy applications.

All models are ruggedly constructed, DIN-rail mountable, and designed with redundant power inputs to ensure uninterrupted operation for industrial applications.

## Cascading Ethernet Ports Make Wiring Easy

The NPort IA5000A-I/O device servers come with 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 reduce wiring costs by eliminating the need to connect each device to a separate Ethernet switch.



## Secure Remote Management and Configuration with SSH/HTTPS

Unauthorized access is one of the biggest headaches for system managers. In addition to IP filtering and password protection, the NPort IA5000A-I/O also supports SSH and HTTPS to provide protection from hackers. To transmit control messages securely, open

the web console using a web browser that supports HTTPS (Internet Explorer, for example). You may also open the serial or Telnet console, such as PuTTY, using a terminal emulator that supports SSH.

## Select "Any Baudrate" between 50 bps and 921.6 kbps

Most device servers only support a fixed number of serial baudrates. However, some applications require special baudrates, such as 250 kbps or 500 kbps. With the NPort IA5000A-I/O, you can use any

baudrate between 50 and 921.6 kbps. If your device's baudrate is not a standard baudrate, select "other" from the drop-down list and then enter the baudrate.

## Specifications

### Ethernet Interface

**Number of Ports:** 2

**Speed:** 10/100 Mbps, auto MDI/MDIX

**Connector:** RJ45

**Magnetic Isolation Protection:** 1.5 kV built-in

### Serial Interface

**Number of Ports:**

NPort IA5150A-I/O Series: 1

NPort IA5250A-I/O Series: 2

**Serial Standards:** RS-232/422/485 (DB9 male connector)

**Serial Line Surge Protection:** 4 kV (level 4)

**Off-line Port Buffering:**

NPort IA5150A-I/O Series: 20 MB

NPort IA5250A-I/O Series: 10 MB

### Serial Communication Parameters

**Data Bits:** 5, 6, 7, 8

**Stop Bits:** 1, 1.5, 2

**Parity:** None, Even, Odd, Space, Mark

**Flow Control:** RTS/CTS and XON/XOFF

**Baudrate:** 50 bps to 921.6 kbps

**Serial Data Log:** 64 KB

### 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

### Digital Input/Output

**Digital Inputs:**

- 4 channels for 6I/O models
- 8 channels for 12I/O models

**Digital Outputs:**

- 2 channels for 6I/O models
- 4 channels for 12I/O models

**Isolation:** 3k VDC or 2k Vrms

### Digital Input

**Sensor Type:** Wet Contact (NPN or PNP), Dry Contact

**I/O Mode:** DI or Event Counter

**Dry Contact:**

- On: short to GND
- Off: open

**Wet Contact (DI to COM):**

- On: 10 to 30 VDC
- Off: 0 to 3 VDC

**Counter Frequency:** 20 Hz

**Digital Filtering Time Interval:** Software Configurable

### Digital Output

**Type:** Sink

**I/O Mode:** DO or Pulse Output

**Over-Voltage Protection:** 45 VDC

**Over-Current Protection:** 2.6 A

**Over-Temperature Shutdown:** 175°C (typical), 150°C (min.)

**Current Rating:** 200 mA per channel

**Storage Card Slot:** 1 microSD (SDHC) card slot; supports up to 32 GB

### Software

**Network Protocols:** ICMP, IPv4, TCP, UDP, DHCP, Telnet, DNS, SNMP V1/V2c/V3, HTTP, SMTP, SNMP, SSH, HTTPS, Modbus TCP (for I/O communication)

**Configuration Options:** Web Console, Serial Console, Telnet Console, Windows Utility

**Secure Configuration Options:** HTTPS, SSH

**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

**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

**Linux Real TTY Drivers:** Linux 2.4.x, 2.6.x, 3.x, 4.x

**Utilities:** Device Search Utility and NPort Windows Driver manager

**Management:** SNMP MIB-II

### Physical Characteristics

**Housing:** Aluminum sheet metal

**Weight:**

NPort IA5150A-6I/O, NPort IA5150A-12I/O:

without the box: 740 g (1.63 lbs)

with the box: 910 g (2.01 lbs)

NPort IA5250A-6I/O, NPort IA5250A-12I/O:

without the box: 753 g (1.66 lbs)

with the box: 923 g (2.03 lbs)

**Dimensions:** 59.6 x 101.4 x 134 mm (2.35 x 4 x 5.28 in)

### Environmental Limits

**Operating Temperature:**

Standard Models: 0 to 60°C (32 to 131°F)

**Storage Temperature:** -40 to 75°C (-40 to 167°F)

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

### Power Requirements

**Input Voltage:** 12 to 48 VDC

**Power Consumption:**

NPort IA5150A-6I/O, NPort IA5150A-12I/O: 300 mA @ 12 V

NPort IA5250A-6I/O, NPort IA5250A-12I/O: 300 mA @ 12 V

**Connector:** Terminal block

### Standards and Certifications

**Safety:** UL 60950-1, EN 60950-1

**EMC:** EN 61000-6-2/6-4

**EMI:** CISPR 22, 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

### Reliability

**Alert Tool:** RTC (real-time clock)

**Automatic Reboot Trigger:** Built-in WDT (watchdog timer)

**MTBF** (mean time between failures)

**Time:**

NPort IA5150A-6I/O: 456,558 hrs

NPort IA5250A-6I/O: 433,352 hrs

NPort IA5150A-12I/O: 337,987 hrs

NPort IA5250A-12I/O: 325,408 hrs

**Standard:** Telcordia (Bellcore) Standard TR/SR

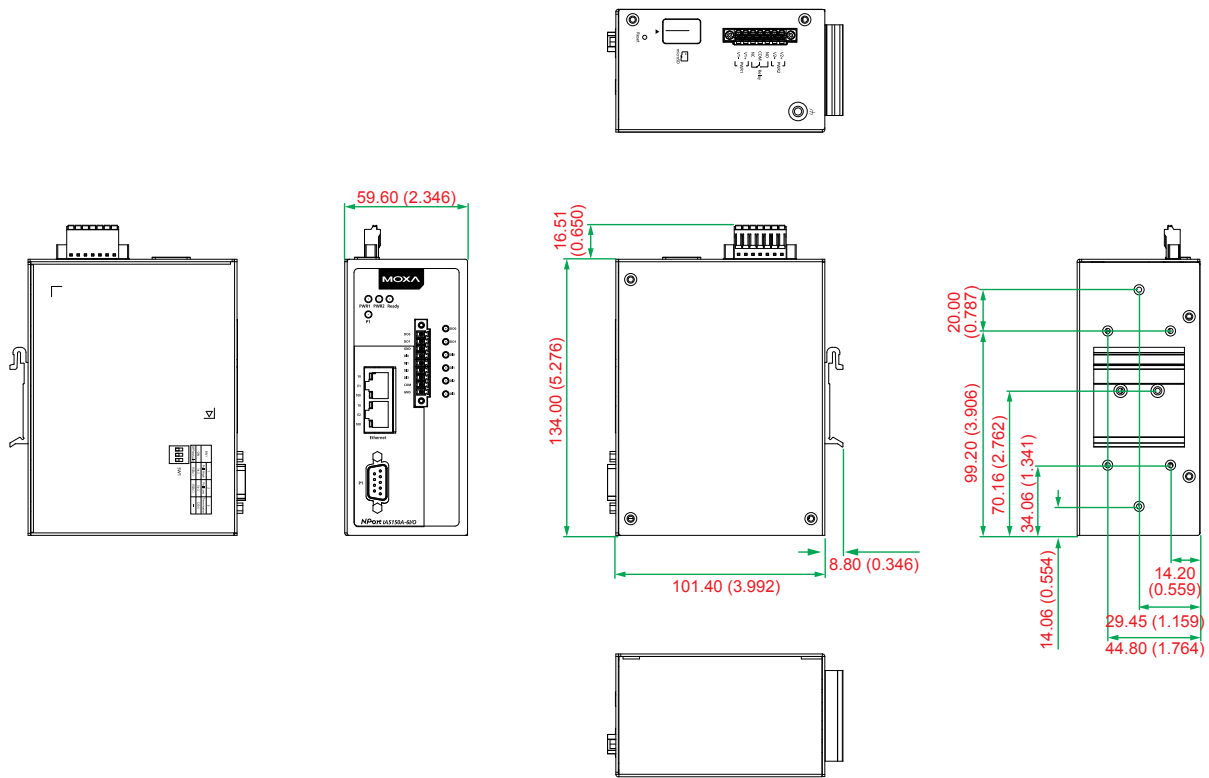
### Warranty

**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

## Dimensions

Unit: mm (inch)



## : Ordering Information

### Available Models

**NPort IA5150A-6I/O:** 1-port RS-232/422/485 device server with 4 DIs and 2 DOs, 0 to 60°C operating temperature

**NPort IA5250A-6I/O:** 2-port RS-232/422/485 device server with 4 DIs and 2 DOs, 0 to 60°C operating temperature

**NPort IA5150A-12I/O:** 1-port RS-232/422/485 device server with 8 DIs and 4 DOs, 0 to 60°C operating temperature

**NPort IA5250A-12I/O:** 2-port RS-232/422/485 device server with 8 DIs and 4 DOs, 0 to 60°C operating temperature

### Optional Accessories (can be purchased separately)

**Mini DB9F-to-TB:** DB9 female to terminal block connector

**WK-51-01:** Wall-mounting kit

**DR-4524:** 45W/2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC input

**DR-75-24:** 75W/3.2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC input

**DR-120-24:** 120W/5A DIN-rail 24 VDC power supply with 88 to 132 VAC or 176 to 264 VAC input, selected by a DIP switch

### Package Checklist

- 1 NPort IA5000A-I/O device server
- Quick installation guide (printed)
- Warranty card