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
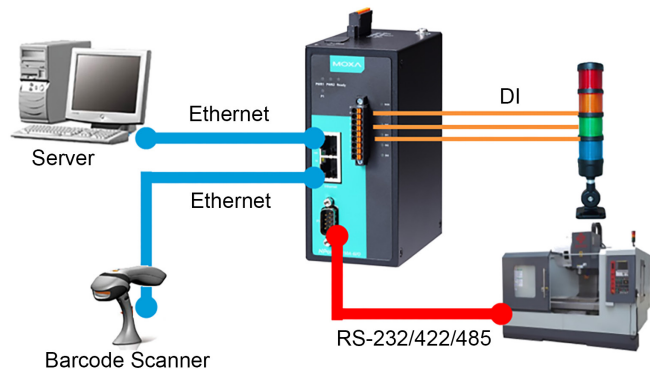> 4 kV serial surge protection

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.

Server

Ethernet

Ethernet

Barcode Scanner

DI

RS-232/422/485

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, SNTP, 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
Android API: Android 3.1.x and later
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
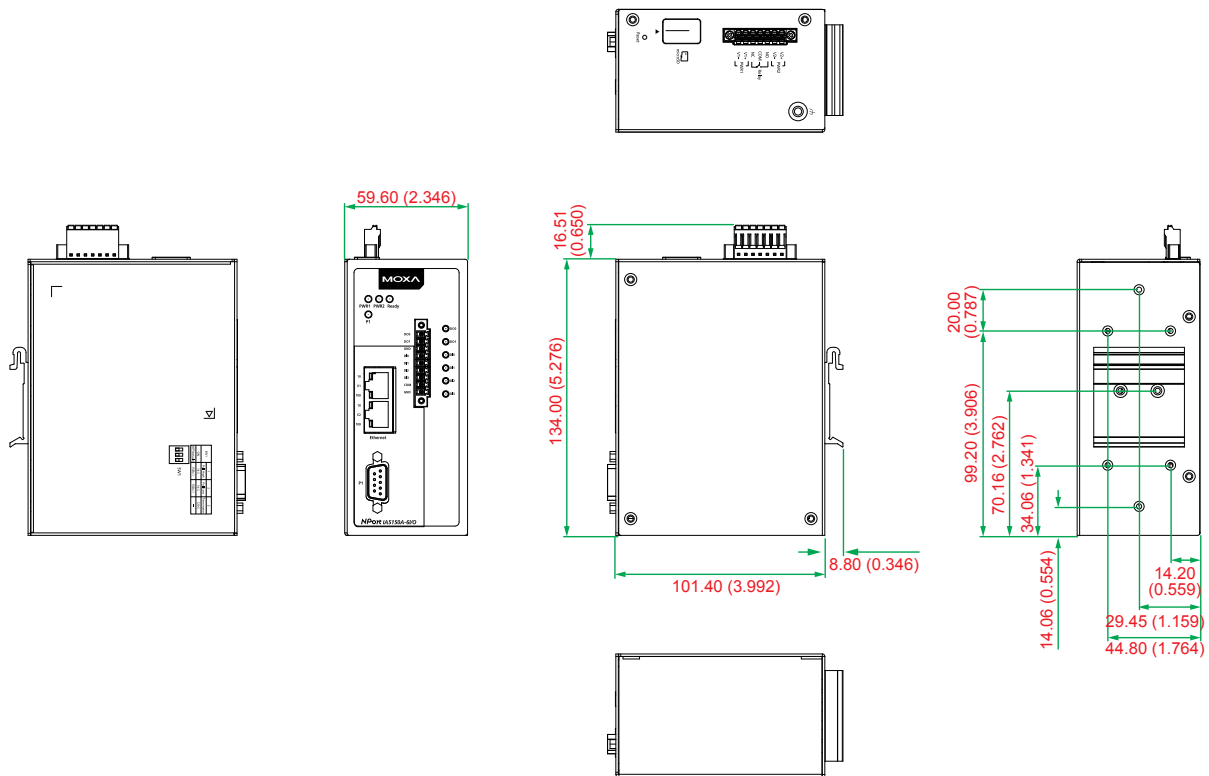**Standard:** Telcordia (Bellcore) Standard TR/SR

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

Dimensions

Unit: mm (inch)

59.60 (2.346)

16.51 (0.650)

134.00 (5.276)

101.40 (3.992)

8.80 (0.346)

20.00 (0.787)

99.20 (3.906)

70.16 (2.762)

34.06 (1.341)

14.06 (0.554)

14.20 (0.559)

29.45 (1.159)

44.80 (1.764)

: 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