NPort IA Series

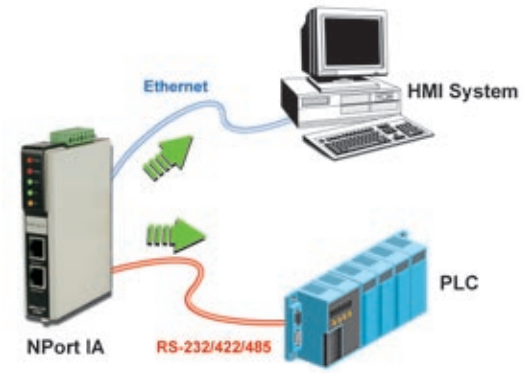
1 and 2-port Serial Device Servers for Industrial Automation

Features

- Makes serial devices Internet ready
- Versatile socket operation modes, including TCP Server, TCP Client, UDP, and Real Com driver
- 2 or 4-wire RS-485 with patented Automatic Data Direction Control (ADDC™)
- Cascading Ethernet ports for easy wiring (RJ45 only)
- Redundant DC power inputs
- Warning by relay output and e-mail
- 10/100BaseTX (RJ45) or 100BaseFX (single or multi-mode SC connector)
- IP30-rated case

Overview

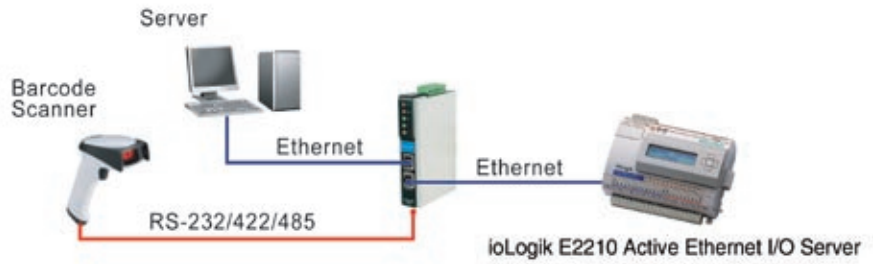
NPort IA device servers provide easy and reliable serial-to-Ethernet connectivity for industrial automation. They can connect any serial device to an Ethernet network and offer various port operation modes, such as TCP Server, TCP Client, and UDP mode, to ensure compatibility with network software. The rock-solid reliability of NPort IA device servers makes them an ideal choice for establishing network access to RS-232/422/485 serial devices such as PLCs, sensors, meters, motors, drives, barcode readers, and operator displays. All models are housed in a compact, rugged casing that can be mounted on a DIN-rail.



Cascading Ethernet Ports for Easy Wiring (RJ45 Only)

Two Ethernet Ports for Easy Wiring

The NPort IA5150 and IA5250 each have two Ethernet ports that can be used as Ethernet switch ports. While one port connects to the network or server, the other port can be used to connect another NPort IA device server or another Ethernet device. The dual Ethernet ports eliminate the need to connect each device to a separate Ethernet switch, reducing wiring costs.



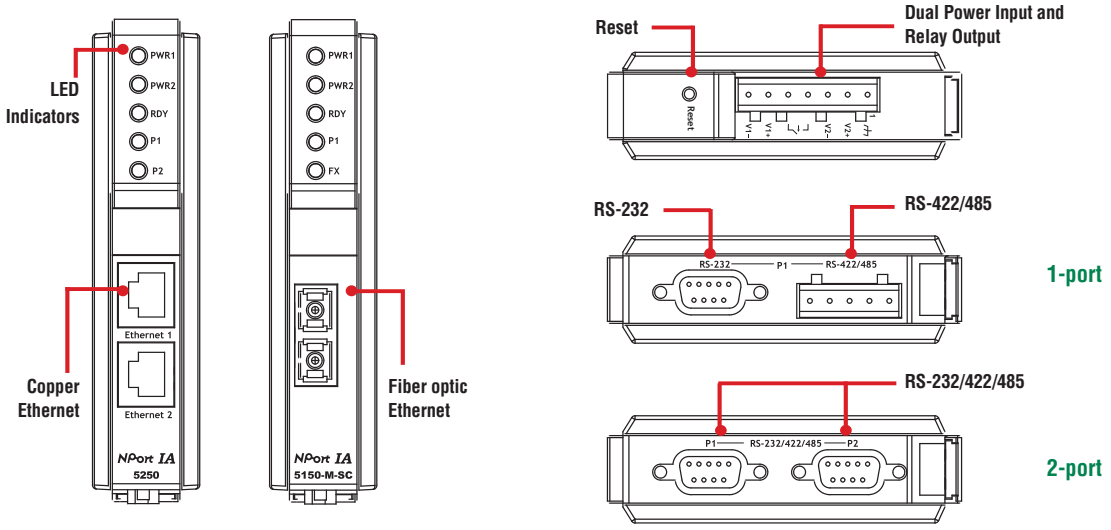
Redundant Power Inputs

NPort IA5000 series 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 assure non-stop operation of your device server.

Warning by Relay Output and E-mail

The built-in relay output can be used to alert administrators of problems with the Ethernet links or power inputs, with the web console indicating which Ethernet link or power input has failed. An e-mail warning can also be issued when an exception is detected. These functions are valuable tools that enable maintenance engineers to react promptly to emergency situations.

Appearance



Ordering Information

NPort IA5150: 1-port RS-232/422/485 serial device server, 2 x 10/100BaseT(X) (RJ45, single IP)
NPort IA5150-T: NPort IA5150, -40 to 75°C operating temperature
NPort IA5150I: 1-port RS-232/422/485 serial device server with 2 KV isolation, 2 x 10/100BaseT(X) (RJ45, single IP)
NPort IA5150I-T: NPort IA5150I, -40 to 75°C operating temperature
NPort IA5150-M-SC: 1-port RS-232/422/485 serial device server, 2 x 10/100BaseF(X), multi mode fiber (SC connector)
NPort IA5150-M-SC-T: NPort IA5150-M-SC, -40 to 75°C operation temperature
NPort IA5150I-M-SC: NPort IA5150-M-SC with 2 KV isolation
NPort IA5150I-M-SC-T: NPort IA5150-M-SC with 2 KV isolation, -40 to 75°C operation temperature
NPort IA5150-S-SC: 1-port RS-232/422/485 serial device server, 2 x 10/100BaseF(X), single mode fiber (SC connector)
NPort IA5150-S-SC-T: NPort IA5150-S-SC, -40 to 75°C operation temperature
NPort IA5150I-S-SC: NPort IA5150-S-SC with 2 KV isolation
NPort IA5150I-S-SC-T: NPort IA5150-S-SC with 2 KV isolation, -40 to 75°C operation temperature
NPort IA5250: 2-port RS-232/422/485 serial device server, 2 x 10/100BaseT(X) (RJ45, Single IP)
NPort IA5250-T: NPort IA5250, -40 to 75°C operation temperature

Package Checklist

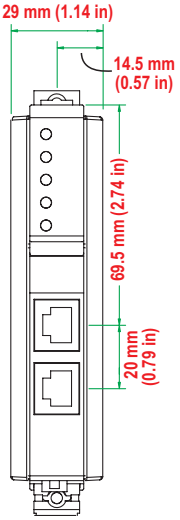
- 1 NPort IA Serial Device Server
- Quick Installation Guide
- NPort Document and Software CD-ROM

Optional Accessories

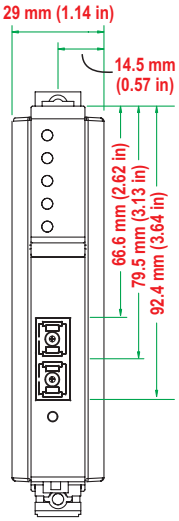
DIN Rail Power Supply: See page 12-7
Optical Fiber Patch Cord: See page 12-10
Terminal Block: See page 12-5
Power Jack to TB Power Cable: See page 12-5

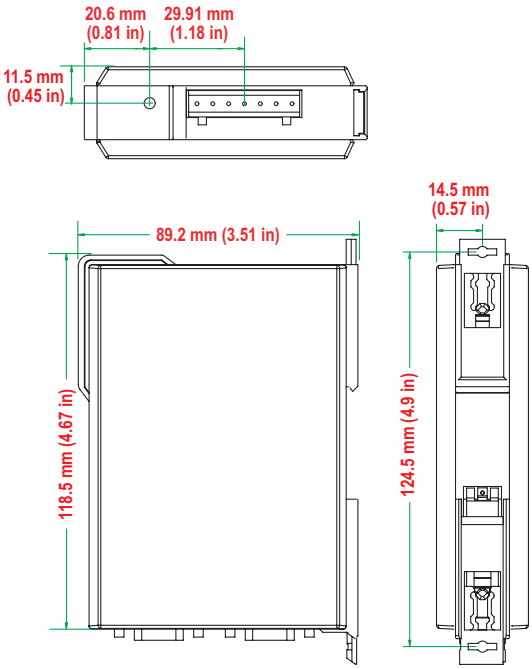
Dimensions (unit = mm)

NPort IA5150
NPort IA5150I
NPort IA5250

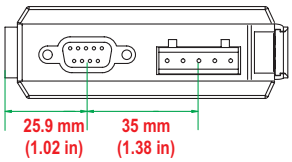


NPort IA5150I-S-SC
NPort IA5150I-M-SC
NPort IA5150-S-SC
NPort IA5150-M-SC

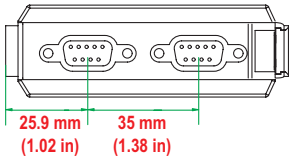




NPort IA5150
NPort IA5150I
NPort IA5150-S-SC
NPort IA5150-M-SC
NPort IA5150I-S-SC
NPort IA5150I-M-SC

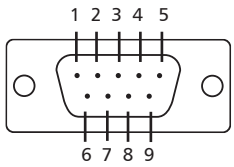


NPort IA5250



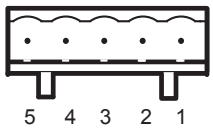
Pin Assignment

RS-232/422/485 DB9 (Male) Port



PIN	RS-232	RS-485 (4W)	RS-485 (2W)	RS-422
1	DCD	TxD-(A)	–	TxD-(A)
2	RXD	TxD+(B)	–	TxD+(B)
3	TXD	RxD+(B)	Data+(B)	RxD+(B)
4	DTR	RxD-(A)	Data-(A)	RxD-(A)
5	GND	GND	GND	GND
6	DSR	–	–	–
7	RTS	–	–	–
8	CTS	–	–	–
9	–	–	–	–

RS-422/485 Terminal Block Wiring



PIN	RS-485 (4W)	RS-485 (2W)	RS-422
1	TxD+(B)	–	TxD+(B)
2	TxD-(A)	–	TxD-(A)
3	RxD+(B)	Data+(B)	RxD+(B)
4	RxD-(A)	Data-(A)	RxD-(A)
5	GND	GND	GND

Specifications

LAN

NPort IA5150-M-SC/5150I-M-SC/5150-S-SC/5150I-S-SC

Fiber Ports: 1 100BaseFX port, SC connector

NPort IA5150/5150I/5250

Ethernet Switch Ports: 2 10/100BaseT(X) ports, RJ45 connector

Protection: Built-in 1.5 KV magnetic isolation

Optical Fiber

Distance:

Multi mode: 0 to 2 km, 1310 nm
(62.5/125 µm, 500 MHz*km)

Single mode: 0 to 40 km, 1310 nm
(9/125 µm, 3.5 PS/(nm*km))

Min. TX Output:

Multi mode: -20 dBm

Single mode: 0 to 40 km, -5 dBm

Max. TX Output:

Multi mode: -14 dBm

Single mode: 0 to 40 km, 0 dBm

Sensitivity:

Multi mode: -34 to -30 dBm

Single mode: -36 to -32 dBm

Serial

NPort IA5150

Interface: 1 RS-232/422/485 port (male DB9 for RS-232, 5-pin terminal block for RS-422/485)

RS-232 Signals: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

RS-422: Tx+, Tx-, Rx+, Rx-, GND

RS-485 (2-wire): Data+, Data-, GND

RS-485 (4-wire): Tx+, Tx-, Rx+, Rx-, GND

RS-485 Data Direction:

Patented Automatic Data Direction Control (ADDC™)

Isolation: 2 KV for NPort IA5150I, IA5150I-M-SC, IA5150I-S-SC

Serial Line Protection: 15 KV ESD for all signals

NPort IA5250

Interface: 2 RS-232/422/485 ports, DB9 (male)

RS-232 Signals: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

RS-422: Tx+, Tx-, Rx+, Rx-, GND

RS-485 (2-wire): Data+, Data-, GND

RS-485 (4-wire): Tx+, Tx-, Rx+, Rx-, GND

RS-485 Data Direction:

Patented Automatic Data Direction Control (ADDC™)

Serial Line Protection: 15 KV ESD for all signals

Serial Communication Parameters

Parity: None, Even, Odd, Space, Mark

Data Bits: 5, 6, 7, 8

Stop Bit(s): 1, 1.5, 2

Flow Control: RTS/CTS (for RS-232 port only), XON/XOFF

Speed: 110 bps to 230.4 Kbps

Software Features

Protocols: ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, Rtelnet, DNS, SNMP, HTTP, SMTP, SNTP

Utilities: NPort Administrator for Windows 95/98/ME/NT/2000/XP/2003

OS Driver Support: Windows 95/98/ME/NT/2000/XP/2003/XP x64/2003 x64 COM driver, Linux real TTY driver, Unix

Configuration: Web console, serial console, Telnet console, or Windows utility

Power Requirements

Power Input: 12 to 48 VDC

Power Consumption:

NPort IA5150: 360 mA @ 12V (max.)

NPort IA5150I: 420 mA @ 12V (max.)

NPort IA5250: 440 mA @ 12V (max.)

NPort IA5150-S-SC: 470 mA @ 12V (max.)

NPort IA5150I-S-SC: 490 mA @ 12V (max.)

NPort IA5150-M-SC: 500 mA @ 12V (max.)

NPort IA5150I-M-SC: 510 mA @ 12V (max.)

Mechanical Specifications

Casing: IP30 protection

Dimensions (W × H × D): 29 x 89.2 x 118.5 mm

Gross Weight:

NPort IA5150: 360g

NPort IA5250: 380g

Environmental

Operating Temperature:

0 to 55°C (32 to 131°F), 5 to 95% RH

-40 to 75°C (-40 to 167°F) for wide temperature models

Storage Temperature:
-20 to 85°C (-4 to 185°F), 5 to 95% RH

Regulatory Approvals

Safety: UL60950 (E212360), UL 508, CSA C22.2 No. 60950, EN60950

Hazardous location: UL/cUL Class I, Division 2, Groups A, B, C and D (E238559) (pending)

ATEX Class I, Zone 2, EEx nC IIC (03CA24537) (pending)

Marine: DNV

EMI: FCC Part 15, CISPR (EN55022) class A,

EMS:

EN61000-4-2 (ESD), Level 3

EN61000-4-3 (RS), Level 3

EN61000-4-4 (EFT), Level 4

EN61000-4-5 (Surge), Level 3

EN61000-4-6 (CS), Level 3

EN61000-4-8

EN61000-4-11

EN61000-4-12

Shock: IEC60068-2-27

Freefall: IEC60068-2-32

Vibration: IEC60068-2-6

Dust-proof: IP30

Warranty: 5 years

MTBF:

NPort IA5150, IA5150I: 195614 hrs

NPort IA5150I-M-SC: 183747 hrs

NPort IA5250: 1947652 hours