NPort IA Series

## 2/1-port Industrial Automation Serial Device Servers

Features

> **Make your serial devices Internet ready**

> **Versatile socket operating modes, including TCP Server, TCP Client, UDP, and Real Com driver**

> **2- or 4-wire RS-485 with patented Automatic Data Direction Control (ADDC™)**

> **Built-in Ethernet Cascading ports for easy wiring (RJ45 only)**

> **Redundant dual DC power inputs**

> **Warning by relay output and E-mail**

> **10/100BaseTX (RJ45) or 100BaseFX (SC connector, Single/Multi mode)**

> **IP30**

: Overview

NPort IA device servers deliver easy and reliable serial-to-Ethernet connectivity for the industrial automation market. NPort IA device servers can be used to connect any serial device to an Ethernet network, and provide TCP Server, TCP Client, and UDP modes to ensure the compatibility of network software. NPort IA device servers are an ideal choice for connecting RS-232/422/485 serial devices, such as PLCs, sensors, meters, motors, drives, barcode readers, and operator displays to a network. All NPort IA models have a compact and rugged DIN-Rail mountable casing.
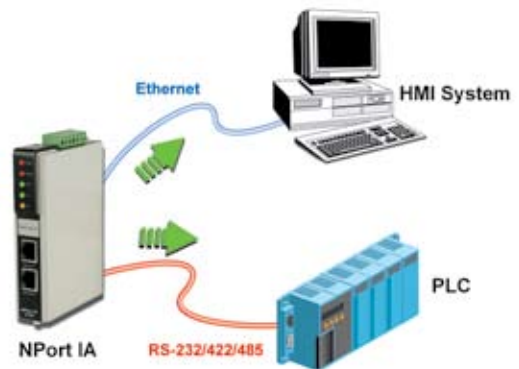
: Built-in Ethernet cascading ports for easy wiring (RJ45 only)

Each NPort IA device server has two Ethernet ports for easy wiring. The ports are used to cascade two or more NPort IA device servers by connecting from one server to another

with a standard RJ45 Ethernet cable. The cascading feature eliminates the need to connect each device server to an Ethernet switch.
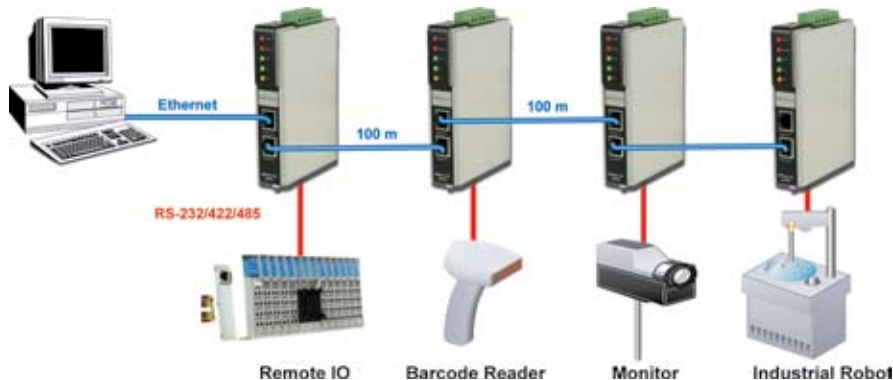
⋮ Redundant Power Inputs

NPort IA device servers have dual power inputs that can be connected simultaneously to live DC power sources. If one of the power inputs fails, the other live source acts as a backup to support NPort IA device server's power needs automatically. The redundant dual DC power inputs give you extra assurance of non-stop operation.

⋮ Warning by Relay Output and e-mail

The built-in relay output function helps you to know the Ethernet link and power input status, and lets you check the web console to know which power or Ethernet link has failed. NPort IA can also send out a warning when an exception is detected. The relay output and E-mail warning function gives maintenance engineers a valuable tool for reacting promptly to emergency situations.

Appearance
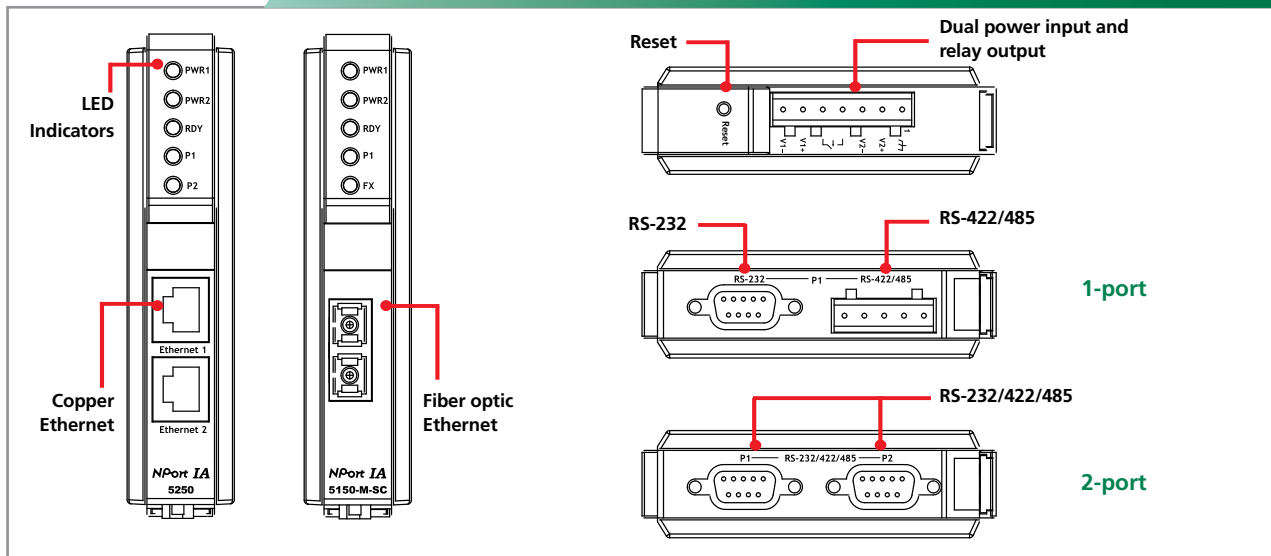
⋮ Ordering Information

Standard Operating Temperature Models (0 to 55°C)

NPort IA5150: 1-port RS-232/422/485 serial device server, 2-port 10/100BaseTx (RJ45, Single IP)

NPort IA5150I: 1-port RS-232/422/485 serial device server with 2 KV isolation, 2 10/100BaseTx (RJ45, Single IP)

NPort IA5250: 2-port RS-232/422/485 serial device server, 2-port 10/100BaseTx (RJ45, Single IP)

NPort IA5150-S-SC: 1-port RS-232/422/485 serial device server, 1-port 100BaseFx Single mode Fiber, SC connector

NPort IA5150I-S-SC: 1-port RS-232/422/485 serial device server with 2 KV isolation, 1 100BaseFx Single mode Fiber, SC connector

NPort IA5150-M-SC: 1-port RS-232/422/485 serial device server, 1-port 100BaseFx Multi mode Fiber, SC connector

NPort IA5150I-M-SC: 1-port RS-232/422/485 serial device server with 2 KV isolation, 1-port 100BaseFx Multi mode Fiber, SC connector

*Extended Operating Temperature (-40 to 75°C) Models are also available: NPort IA5150-T, NPort IA5150I-T, NPort IA5250-T, NPort IA5150-S-SC-T, NPort IA5150I-S-SC-T, NPort IA5150-M-SC-T, NPort IA5150I-M-SC-T

All items include

• 1 NPort IA serial device server

• Quick Installation Guide

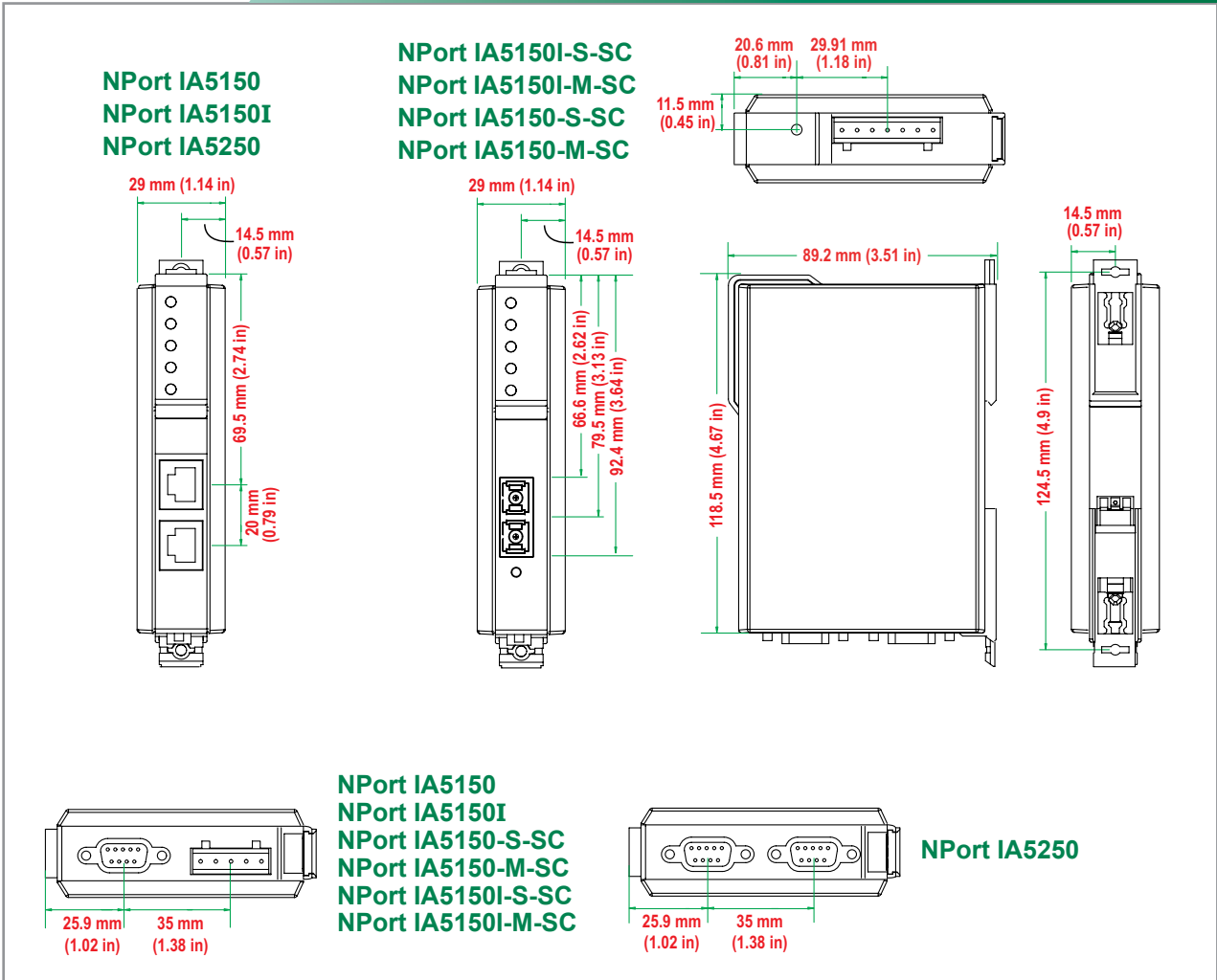• NPort Document and Software CD-ROM

Optional Accessories

DR-4524: 45W/2A DIN-Rail 24 VDC Power Supply with universal 85 to 264 VAC input

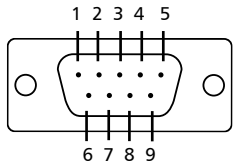**DR-75-24:** 75W/3.2A DIN-Rail 24 VDC Power Supply with universal 85 to 264 VAC input

DR-120-24: 120W/5A DIN-Rail 24 VDC Power Supply with 88 to 132 VAC/176 to 264 VAC input by switch

Dimensions

NPort IA5150
NPort IA5150I
NPort IA5250

29 mm (1.14 in)
14.5 mm (0.57 in)
69.5 mm (2.74 in)
20 mm (0.79 in)

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

29 mm (1.14 in)
14.5 mm (0.57 in)
66.6 mm (2.62 in)
79.5 mm (3.13 in)
92.4 mm (3.64 in)

20.6 mm (0.81 in)
29.91 mm (1.18 in)
11.5 mm (0.45 in)

89.2 mm (3.51 in)
118.5 mm (4.67 in)

14.5 mm (0.57 in)
124.5 mm (4.9 in)

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

25.9 mm (1.02 in)
35 mm (1.38 in)

NPort IA5250

25.9 mm (1.02 in)
35 mm (1.38 in)

Pin Assignment

RJ45 RS-232/422/485 Port

1 2 3 4 5
6 7 8 9

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

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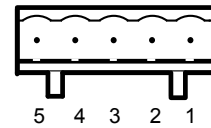
PIN	RS-485 (4W)	RS-485 (2W)	RS-422
1	TxD+(B)	–	TxD+(B)
2	TxD-(A)	–	TxD-(A)
3	RxD+(B)	Data+(A)	RxD+(B)
4	RxD-(A)	Data-(B)	RxD+(B)
5	GND	GND	GND

⋮ Specifications

LAN

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

Fiber Port: 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 (5150I/5150I-M-SC/5150I-S-SC)

Serial Line Protection: 15 KV ESD for all signals

NPort IA 5250

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

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: 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

Configuration: Web browser, Telnet console, Windows utility and Serial console

Power Requirements

Power Input: 12 to 48 VDC

Power Consumption:

5150: 360 mA at 12V (max.)

5150I: 420 mA at 12V (max.)

5250: 440 mA at 12V (max.)

5150-S-SC: 470 mA at 12V (max.)

5150I-S-SC: 490 mA at 12V (max.)

5150-M-SC: 500 mA at 12V (max.)

5150I-M-SC: 510 mA at 12V (max.)

Mechanical Specifications

Casing: IP30 protection

Dimensions (WxDxH): 29 x 89.2 x 118.5 mm

Gross Weight: 5150 series: 0.15 kg (0. 33lb)
              5250: 0.16 kg (0.35 lb)

Environmental

Operating temperature:

0 to 55°C (32 to 131°F), 5 to 95% RH

-40 to 75°C (-40 to 167°F) for -T 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)

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