NPort IA5150A/IA5250A Series Quick Installation Guide

Second Edition, July 2010

1. Overview

The NPort IA5150A/IA5250A series device servers deliver easy and reliable serial-to-Ethernet connectivity for the industrial automation market. The servers support several operation modes—TCP Server, TCP Client, UDP, Real COM, RFC2217, RTelnet, Pair Connection, and Ethernet Modem—ensuring the compatibility of network software, and are an ideal choice for connecting RS-232/422/485 serial devices, such as PLCs, sensors, meters, motors, drives, barcode readers, and operator displays.

2. Package Checklist

Before installing the NPort IA5150A/IA5250A series device servers, verify that the package contains the following items:

- 1 NPort IA5150A/IA5250A series Device Server
- Documentation and Software CD
- NPort IA5150A/IA5250A series Quick Installation Guide
- Warranty Card

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

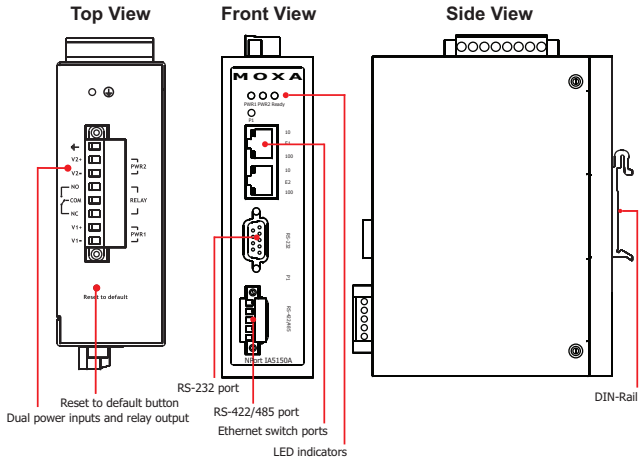
Notify your sales representative if any of the above items is missing or damaged.

3. Hardware Introduction

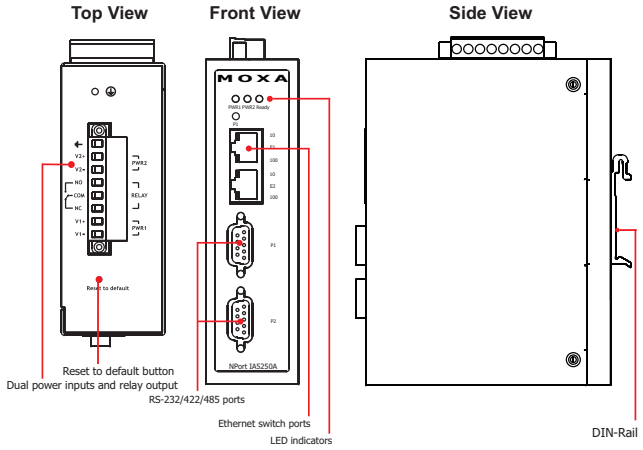
The NPort IA5150A series has one RS-232 DB9 serial port and one RS-422/485 terminal block for serial data communication. The NPort IA5250A series has two RS-232/422/485 3-in-1 DB9 serial ports for serial data communication. Each model has one 8-contact screw-type terminal block, which is located on the top for power input and relay output.

P/N: 1802051500311

NPort IA5150A Series Appearance



NPort IA5250A Series Appearance



The Reset to Default Button—*Depress the Reset to default button for 5 continuous seconds to load the factory default settings.* Use a pointed object, such as a straightened paper clip or toothpick, to depress the Reset to default button. This will cause the Ready LED to blink on and off. The factory default settings are loaded once the Ready LED stops blinking (after about 5 seconds). At this point, you can release the Reset to default button.

NPort IA5150A/IA5250A Series LED Indicators (front panel)

Name	Color	Function
PWR1, PWR2	red	Power is being supplied to power input PWR1, PWR2.
Ready	red	Steady on: Power is on and the NPort IA5150A/IA5250A series is booting up. Blinking: Indicates an IP conflict, the DHCP or BOOTP server did not respond properly, or a relay output occurred.
	green	Steady on: Power is on and the NPort IA5150A/IA5250A series is functioning normally. Blinking: The device server has been located by the Administrator's "Locate" function.
	off	Power is off, or a power error condition exists.
E1, E2	orange	10 Mbps Ethernet connection.
	green	100 Mbps Ethernet connection.
	off	Ethernet cable is disconnected, or has a short.
P1, P2	orange	Serial port is receiving data.
	green	Serial port is transmitting data.
	off	No data is being transmitted or received through the serial port.

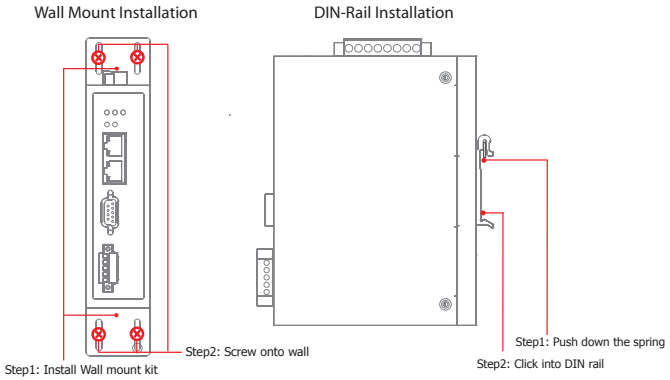
4. Hardware Installation Procedure

STEP 1: After removing the NPort IA5150A/IA5250A series from the box, the first thing you should do is connect the power adaptor. Connect the 12-48 VDC power line with the NPort IA5150A/IA5250A series' terminal block, or connect the DIN-Rail power supply with the NPort IA5150A/IA5250A series' terminal block.

STEP 2: Connect the NPort IA5150A/IA5250A series to a network. Use a standard straight-through Ethernet cable to connect to a Hub or Switch. When setting up or testing the NPort IA5150A/IA5250A series, you might find it convenient to connect directly to your computer's Ethernet port. In this case, use a cross-over Ethernet cable.

STEP 3: Connect the NPort IA5150A/IA5250A series' serial port to a serial device.

STEP 4: The NPort IA5150A/IA5250A series is designed to be attached to a DIN-Rail or mounted on a wall. For DIN-Rail mounting, push down the spring and properly attach it to the DIN-Rail until it "snaps" into place. For wall mounting, install the wall mount kit (optional) first, and then screw the device onto the wall. The following figure illustrates the two mounting options:

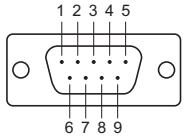


5. Software Installation Information

To install **NPort Administration Suite**, insert the **Document & Software CD** into your computer's CD-ROM drive. Once the installation window opens, click on the **Installation Administration Suite** button, and then follow the instructions on the screen. To view detailed information about the **NPort Administration Suite**, click on the **Documents** button, and then select the NPort IA5150A/IA5250A series User's Manual to open the pdf version of this user's manual.

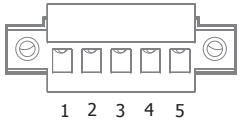
6. Pin Assignments and Cable Wiring

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



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

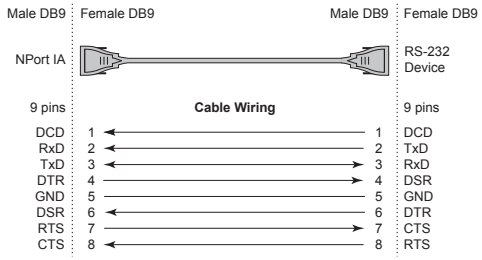
RS-422/2W RS-485/4W RS-485 (Terminal Block) Pinouts



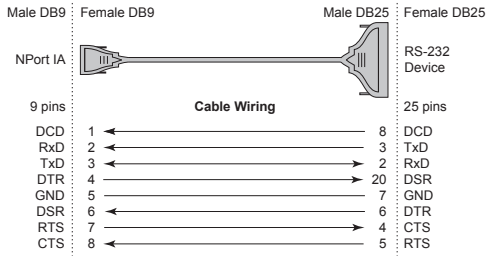
PIN	2W RS-485	RS-422/4W RS-485
1	---	TxD+(B)
2	---	TxD-(A)
3	Data+(B)	RxD+(B)
4	Data-(A)	RxD-(A)
5	GND	GND

Four cables are available as optional accessories that can be used to connect the NPort IA5150A/IA5250A series to RS-232 serial devices. For your convenience, we show precise cable wiring diagrams for each of the two cables.

Female DB9 to Male DB9

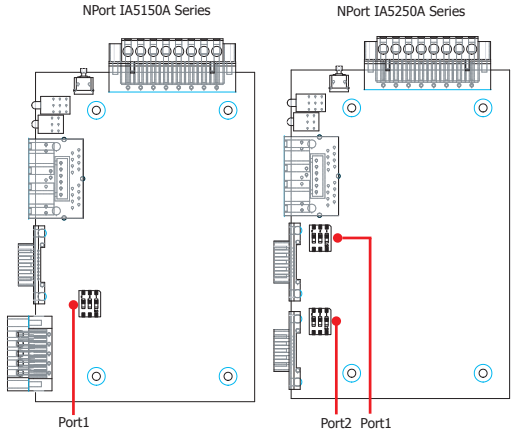


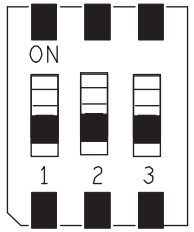
Female DB9 to Male DB25



7. Pull-high, Pull-low, and Terminator for RS-485

Remove the NPort IA5150A/IA5250A's top cover and you will find DIP switches to adjust each serial port's pull-high, pull-low, and terminator.





SW	1	2	3
	Pull-high resistor	Pull-low resistor	Terminator
ON	1 K Ω	1 K Ω	120 Ω
OFF	* 150 K Ω	* 150 K Ω	* ---

*Default

8. Specifications

Power requirements	NPort IA5150A: 12 to 48 VDC, 220 mA@12 VDC; 110 mA@24VDC NPort IA5150AI: 12 to 48 VDC, 255 mA@12 VDC; 130 mA@24VDC NPort IA5250A: 12 to 48 VDC, 250 mA@12 VDC; 125 mA@24VDC NPort IA5250AI: 12 to 48 VDC, 290 mA@12 VDC; 150 mA@24VDC
Operating temp.	0 to 60°C (32 to 140°F) , for standard models -40 to 75 ºC (-40 to 167 ºF), for wide-temperature models
Operating humidity	5 to 95% RH
Dimensions (W×D×H)	36 x 105 x 140 mm 1.42 x 41.34 x 55.12 in
Surge protection	1 KV for serial ports 1 KV for LAN ports
ESD protection	15 KV for all signals
Magnetic isolation	1.5 KV for Ethernet
Power line protection	4 KV Burst (EFT), EN61000-4-4 2 KV Surge, EN61000-4-5
Regulatory approvals	CE/FCC Class A, UL 508, LVD, ATEX, Class 1 Div. 2/Zone 2

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