NPort IA5000A Series
Quick Installation Guide

Version 5.2, January 2021

Technical Support Contact Information
www.moxa.com/support

P/N: 1802051500317

Overview

The NPort IA5000A series of 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.

Package Checklist

Before installing the NPort IA5000A Series device servers, verify that the package contains the following items:

- 1 NPort IA5150A/IA5250A/IA5450A Series device server
- Quick installation guide (printed)
- Warranty card

Optional Accessories

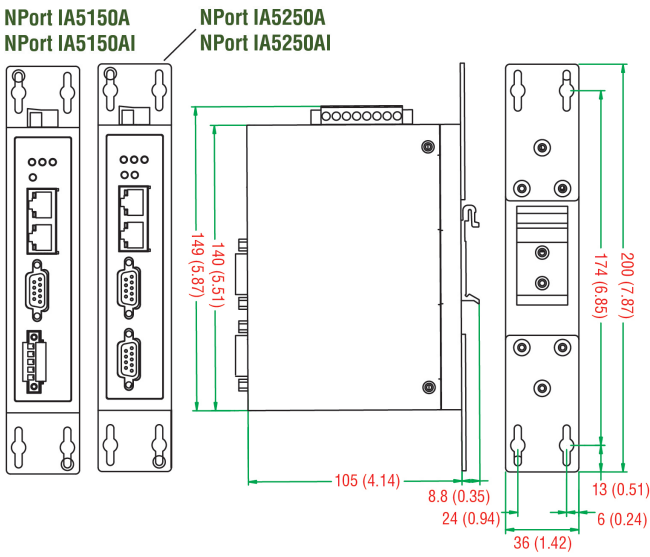
- **DR-4524:** 45W/2A DIN-Rail 24 VDC Power Supply with universal 85 to 264 VAC input
- **DR-75-24:** 75W/3.2A DIN-Rail 24 VDC Power Supply with universal 85 to 264 VAC input
- **DR-120-24:** 120W/5A DIN-Rail 24 VDC Power Supply with 88 to 132 VAC/176 to 264 VAC input by switch
- **WK-36-01:** Wall mounting kit

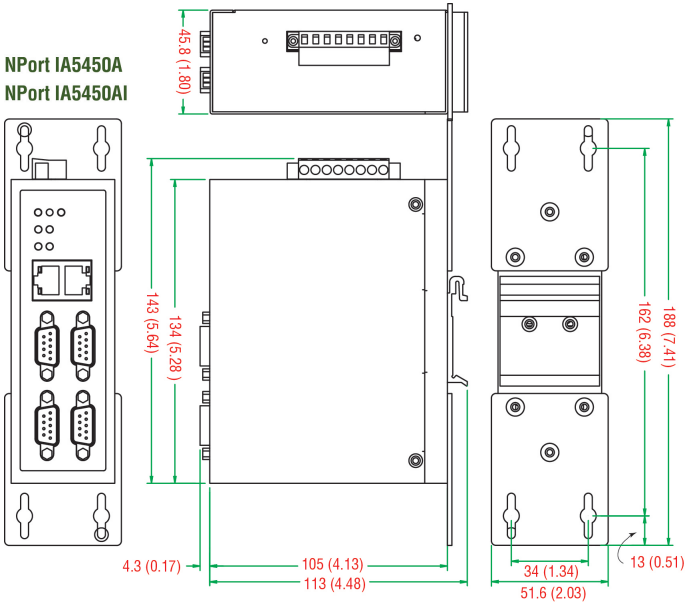
Note: Please notify your sales representative if any of the above items are missing or damaged.

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/IA5450A Series has two/four 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.

Dimensions





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 IA5000A 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 IA5000A 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 IA5000A 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 connecting.
	Green	100 Mbps Ethernet connectiing.
	Off	Ethernet cable is disconnected, or has a short.
P1, P2, P3, P4	Orange	Serial port is receiving data.
	Green	Serial port is transmitting data.
	Off	No data is being transmitted or received through the serial port.

Hardware Installation Procedure

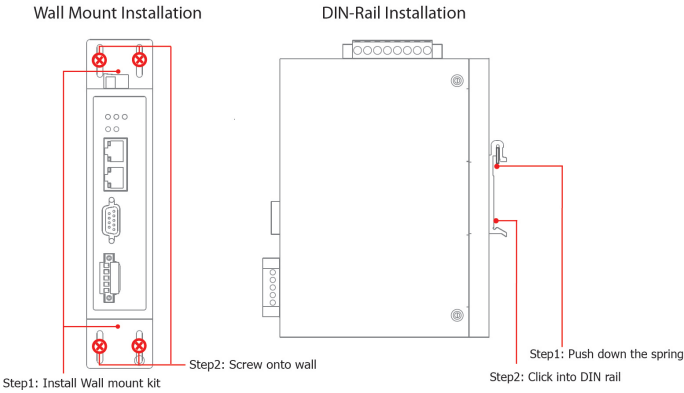
STEP 1: After removing the NPort IA5000A Series from the box, the first thing you should do is connect the power adaptor. Connect the 12-48 VDC power line with the NPort IA5000A Series' terminal block, or connect the DIN-Rail power supply with the NPort IA5000A Series' terminal block.

STEP 2: Connect the NPort IA5000A 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 IA5000A 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 IA5000A Series' serial port to a serial device.

STEP 4: The NPort IA5000A 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:



Software Installation Information

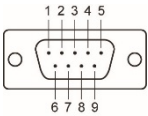
For the NPort's configuration, the default IP address of the NPort is: 192.168.127.254. You may log in with the account name **admin** and password **moxa** to change any setting to meet your network topology (e.g., IP address) or serial device (e.g., serial parameters).

For software installation, download the relative utilities from Moxa's website
https://www.moxa.com/support/support_home.aspx?isSearchShow=1

- Download the NPort Windows Driver Manager and install it as the driver to run with Real COM mode of the NPort Series.
- Execute NPort Windows Driver Manager; then map the virtual COM ports on your Windows platform.
- You may refer to the DB9 Male pin assignment section to loop back pin 2 and pin 3 for the RS-232 interface to carry out a self test on the device.
- Use HyperTerminal or a similar program (you may download Moxa's program, called PComm Lite) to test whether the device is good or not.

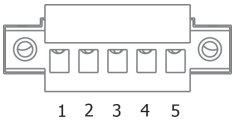
Pin Assignments and Cable Wiring

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	–	–	–

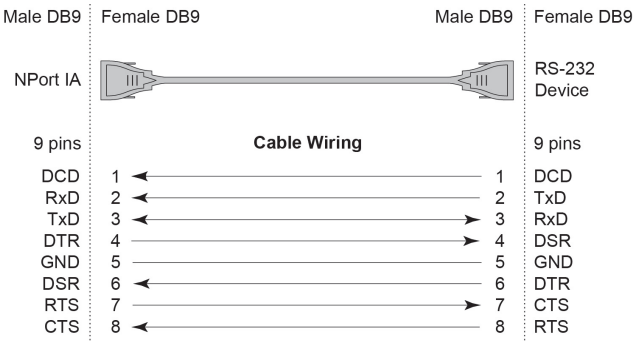
RS-422/2W RS-485/4W RS-485 (Terminal Block) Pinouts



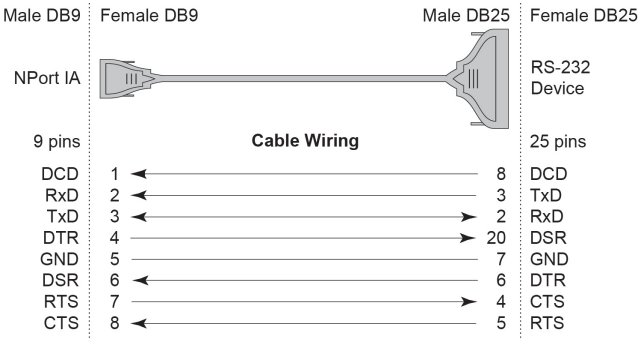
PIN	RS-485 (2W)	RS-422/ RS-485 (4W)
1	–	TxD+(B)
2	–	TxD-(A)
3	Data+(B)	RxD+(B)
4	Data-(A)	RxD-(A)
5	GND	GND

Four cables are available as optional accessories that can be used to connect the NPort IA5000A 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



ATEX and IECEx Information

II 3G

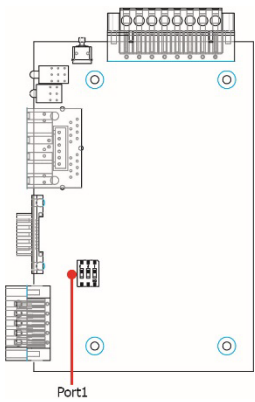
1. DEMKO Certification number: 12 ATEX 1014487X
   IEC Certification Number: IECEx UL 13.0024X (only for models with suffix –CT or –IEX)
2. Ambient Temperature Range (-40°C ≤ Tamb ≤ 75°C)
3. Certification String: Ex nA nC IIC T3 Gc

4. Standards Covered:
   EN 60079-0:2012+A11:2013, IEC 60079-0 Ed 6.0,
   EN 60079-15:2010, IEC 60079-15 Ed 4.0
5. The conditions of safe usage:
   - The Ethernet Communications Devices are intended for mounting in a tool-accessible ATEX-Certified or IECEx-Certified (for models with the suffix -CT or -IEX) IP54 enclosure and used in an area of not more than pollution degree 2 as defined by IEC/EN 60664-1 or IEC 60664-1 (for models with the suffix -CT or -IEX).
   - Conductors suitable for use in an ambient temperature greater than 91°C must be used for the power supply terminal.
   - A 4 mm^2 conductor must be used when connection to the external grounding screw is utilized.
   - Provisions shall be made, either in the equipment or external to the equipment, to prevent the peak rated voltage being exceeded by the transient disturbances of more than 140%.
6. Terminal block information.
   - Input Terminal Block (J1)—Dinkle Enterprise Co, Ltd, Cat. No. 5EHDR-08P, rated 300V, 10A, 105℃, suitable for 28-12 AWG (0.12-3.31 mm^2) wire size, torque value 4.5 lb-in (0.508 N-m). Terminal blocks do not accommodate more than one individual conductor per clamping point. Mechanically secured by two screws.
   - Signal Channel Terminal Block (J2, for the NPort IA5150A Series only)—Dinkle Enterprise Co, Ltd, Cat. No. 5EHDR-05P, rated 300V, 10A, 105℃, mating with Cat. No. 5ESDV-05P, rated 300V, 10A, 105℃, suitable for 28-12 AWG (0.12-3.31mm^2) wire size, torque value 4.5 lb-in (0.508 N-m). Terminal blocks do not accommodate more than one individual conductor per clamping point. Mechanically secured by two screws.
7. Address: Moxa Inc, No. 1111, Heping Rd., Bade Dist., Taoyuan City 334004, Taiwan

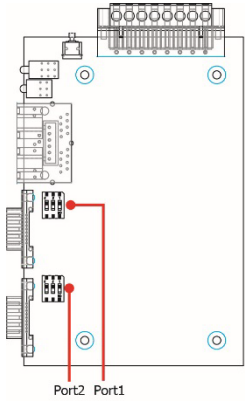
Pull-high, Pull-low, and Terminator for RS-485

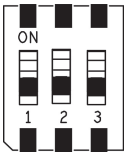
Remove the NPort IA5000A's top cover and you will find DIP switches to adjust each serial port's pull-high, pull-low, and terminator.

NPort IA5150A Series



NPort IA5250A Series





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

*Default

Model	**Power Input**
NPort IA5150A Series	12 to 48 VDC, max. 512 mA, Class 2
NPort IA5250A Series	
NPort IA5450A Series	

Relay Output	24 VDC, 1 A, resistance
Maximum Surrounding Air Temperature	75°C