

NPort S8000 Series Quick Installation Guide

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Technical Support Contact Information
www.moxa.com/support

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Overview

The Moxa NPort S8000 Series fully integrates an industrial serial device server and redundant managed Ethernet switch into a single device, making it easy to enable your serial devices to operate over a network and connect Ethernet-enabled devices in industrial field applications.

Package Checklist

Before installing the NPort S8000, verify that the package contains the following items:

- 1 NPort S8000 combo switch / serial device server
- CBL-RJ45F9-150 cable
- Quick installation guide
- Warranty card

Optional Accessories (must be ordered separately)

- Wall-mounting kit

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

Hardware Introduction

The NPort S8455I integrates 5 Ethernet ports and 4 male DB9 ports for the RS-232/422/485 serial port.

NPort S8455I-SS-SC/NPort S8455I-MM-SC integrates 2 fiber ports, 3 Ethernet ports, and 4 male DB9 ports for the RS-232/422/485 serial port.

The NPort S8458 integrates 4 fiber ports, 4 Ethernet ports, and 4 male DB9 ports for the RS-232/422/485 serial port.

Reset Button—Hold the Reset button for 5 seconds to load factory default settings: Use a pointed object, such as a straightened paper clip or toothpick, to press the reset button. This will cause the Ready LED to blink on and off. The factory defaults will be loaded once the Ready LED stops blinking (after about 5 seconds). At this point, you should release the reset button.

LED Indicators—The NPort S8000’s front panel contains some LED indicators as described in the following table.

Type	Color	Meaning
PW 1	Green	Power 1 input
PW 2	Green	Power 2 input
Ready	Red	Steady On: Power is on, and the NPort is booting up. Blinking: Indicates a LAN-IP conflict, or the DHCP or BOOTP server did not respond properly.
	Green	Steady On: Power is on, and the NPort is functioning normally. Blinking: The device server has been located by the Administrator’s location function.
	Off	Power is off, or power error condition exists.
Master	Green	When the NPort is the Master of this Turbo Ring.
	Blinking	When the NPort is the Ring Master of this Turbo Ring and the Turbo Ring is disconnected.
Coupler	Green	When the NPort enables the coupling function to form a backup path
Serial Port TX	Green	The serial port is transmitting data.
Serial Port RX	Amber	The serial port is receiving data.
Link (FX)	Green	The FX port’s 100 Mbps is active
	Blinking	Data is being transmitted/received at 100 Mbps
Link	Green	The 100 Mbps Ethernet connection is active.
	Amber	The 10 Mbps Ethernet connection is active.

Hardware Installation Procedure

STEP 1: Remove the NPort S8000 from the box.

STEP 2: Use a standard straight-through Ethernet cable to connect to a hub or switch. When setting up or testing the NPort S8000, you might find it convenient to connect directly to your computer’s Ethernet port. In this case, use a crossover Ethernet cable.

STEP 3: Connect the NPort S8000’s serial port to a serial device.

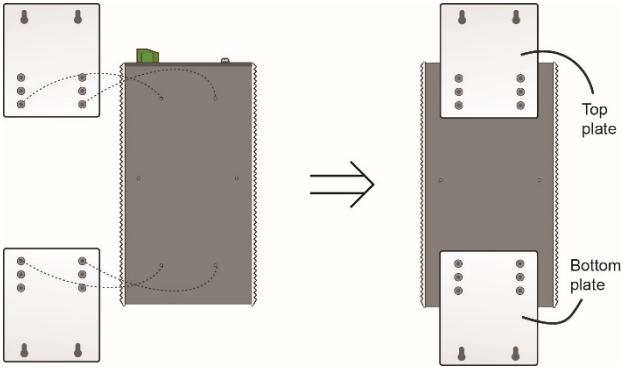
STEP 4: Connect the power source to the NPort S8000 and power it up for configuring or testing.

STEP 5: Mount the NPort S8000 to either a wall or DIN-rail, as described below.

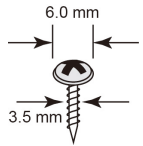
Wall Mounting (optional)

In high-vibration environments, we suggest using the NPort S8000's wall-mount kit to fix. The installation procedure is described below:

STEP 1: Remove the aluminum DIN-rail attachment plate from the NPort S8000's rear panel and then attach the wall-mount plates with M3 screws.



STEP 2: Four screws are required. Use the NPort S8000, with wall-mount plates attached, as a guide to mark the correct locations of the 4 screws. The heads of the screws should be less than 6.0 mm in diameter, and the shafts should be less than 3.5 mm in diameter.



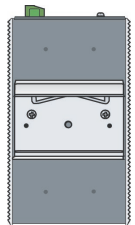
NOTE Before tightening the screws into the wall, make sure the screw head and shank sizes are suitable by inserting one of the screws into one of the keyhole-shaped openings of the wall-mounting plates.

Do not screw the screws in completely—leave about 2 mm to allow room for sliding the wall-mount panel between the wall and the screws.

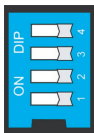
STEP 3: Once the screws are fixed to the wall, insert the four screw heads through the large parts of the keyhole-shaped openings and slide the NPort S8000 downwards as indicated. Tighten the four screws for added stability.

DIN-rail Mounting (optional)

DIN-rail attachments can be purchased separately to attach the product to a DIN-rail. When snapping the attachments to the DIN-rail, make sure that the stiff metal springs are at the top.



Turbo Ring DIP Switch Settings



The default setting for each DIP switch is OFF. The following table explains the effect of setting the DIP switch to the ON position.

Turbo Ring Settings

	DIP 1	DIP 2	DIP 3	DIP 4
DIP	–	Ring Master	Ring Coupling port	Enable DIP 1, 2, 3
ON	–	Enable	Enable	Activates
Default OFF	–	Disable	Disable	Disabled

Turbo Ring V2 Settings

	DIP 1	DIP 2	DIP 3	DIP 4
DIP	Ring Coupling	Ring Master	Ring Coupling port	Enable DIP 1, 2, 3
ON	Backup port Enable	Enable	Enable	Activates
Default OFF	Primary port Enable	Disable	Disable	Disabled.

Software Installation Information

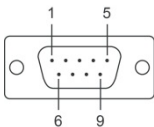
For the NPort's configuration, the default IP address of the NPort is: LAN: Static IP = 192.168.127.254; netmask = 255.255.255.0

You may log in with the account name **admin** and password **moxa** to change any settings to meet your network topology (e.g., IP address) or serial device (e.g., serial parameters). You may also refer to Moxa support website <https://www.moxa.com/support> for user's manual, driver, SNMP MIB, and NPort Search Utility.

NOTE For NPort with DB Male serial ports, you may refer to the DB9 Male Ports 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.

Pin Assignments and Cable Wiring

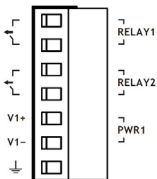
DB9 Male Port Pinouts



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	–	–	–

Wiring the Relay Contact

The NPort S8000 has two sets of relay outputs: relay 1 and relay 2. Each relay contact consists of two contacts of the terminal block on the NPort S8000's top panel. Refer to the next section for detailed instructions on how to connect the wires to the terminal block connector and how to attach the terminal block connector to the terminal block receptor. The two contacts used to connect the relay contacts work as follows (see illustration below):



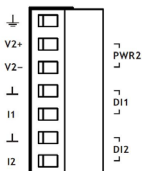
The fault circuit will open if

1. A relay warning event is triggered, OR
2. The NPort S8000 is the Master of this Turbo Ring, and the Turbo Ring is disconnected, OR
3. Start-up fails.

If none of these three conditions are met, the fault circuit will remain closed.

Wiring the Digital Inputs

The NPort S8000 unit has two sets of digital inputs: DI 1 and DI 2. Each DI consists of two contacts of the 6-pin terminal block connector on the NPort S8000's top panel. The remaining contacts are used for the NPort S8000's two DC inputs. The top and front views of one of the terminal block connectors are shown below.



Take the following steps to wire the digital inputs:

1. Insert the negative (ground) or positive DI wires into the terminals.
2. To keep the DI wires from getting loose, use a small flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector.
3. Insert the plastic terminal block connector prongs into the terminal block receptor, which is located on the NPort 8000's top panel.

Wiring the Dual Power Inputs

The NPort S8000 unit has two sets of power inputs: power input 1 and power input 2. The top two contacts and the bottom two contacts of the 6-pin terminal block connector on the top panel are used for the NPort S8000's two power inputs. The top and front views of one of the terminal block connectors are shown below.

Take the following steps to wire the redundant power inputs:

1. Insert the negative/positive DC wires into the V-/V+ terminals.
2. To keep the DC wires from pulling loose, use a small flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector.
3. Insert the plastic terminal block connector prongs into the terminal block receptor, which is located on the NPort S8000's top panel.



WARNING

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

NOTE Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3, as described in Laser Notice No. 56, dated May 8, 2019.

NOTE When wiring the Terminal Block inputs, please use copper conductors only, with rated 300 V/15 A, solder on the board, compatible with a plug-half connector suitable for 28-12 AWG (Sol, Str) wire size, torque value 4.5 lb-in.

NOTE These devices are open-type devices that are to be installed in an enclosure only accessible with the use of a tool, suitable for the environment.

NOTE This equipment is suitable for use in Class I, Division 2, Groups A, B, C, and D or nonhazardous locations only.



WARNING

EXPLOSION HAZARD—Do not disconnect equipment unless the power has been removed or the area is known to be nonhazardous.



WARNING

EXPLOSION HAZARD—Substitution of any components may impair suitability for Class I, Division 2.