

NPort S8000 Series

4-port device servers with managed Ethernet switch



Features and Benefits

- 4-port RS-232/422/485 serial device server
- Serial QoS for configuring serial data transmission priority
- Built-in managed Ethernet switch
- S8455I fiber models: 2 fiber Ethernet ports and 3 Ethernet ports
- S8455I all-copper models: 5 Ethernet ports
- Ethernet redundancy with Turbo Ring and Turbo Chain (recovery time < 20 ms) or RSTP/STP (IEEE 802.1w/D) supported
- QoS, IGMP-snooping/GMRP, VLAN, LACP, SNMPv1/v2c/v3, RMON supported
- 2 kV isolation for serial signals (isolation models)
- Adjustable pull high/low resistor for RS-485 ports
- Surge protection for serial, Ethernet, and power

Certifications



Introduction

The NPort S8000 Series combines an industrial device server with a full-function managed Ethernet switch with 4 RS-232/422/485 serial ports, allowing you to easily install, manage, and maintain the product. Combining a device server and switch in one product allows you to save space in your cabinet, reduce overall power consumption, and reduce costs, since you will not need to purchase a switch and serial device server separately.

Supports the Full Range of NPort 5000 Series Device Server Functions

The NPort S8000 Series supports the complete array of NPort 5000 device server functions. You can network your existing serial devices by connecting up to 4 serial devices through Ethernet ports, with only basic configuration required. In addition, data transmission between the serial and Ethernet interfaces is bidirectional.

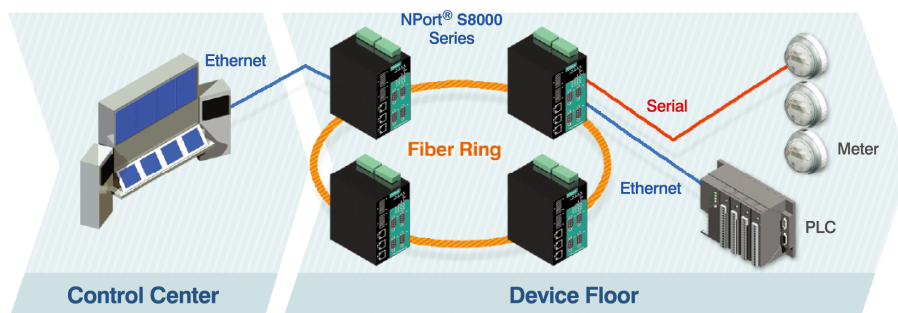
Full-function Managed Ethernet Switch

The NPort S8000 Series has a built-in full-function managed Ethernet switch that supports QoS, IGMP-snooping/GMRP, VLAN, Port Trunking, SNMPv1/v2c/v3, and IEEE 802.1X, allowing you to handle virtually any kind of application. Ethernet redundancy, which is used to increase the reliability and availability of your industrial Ethernet network, is provided by Moxa's Turbo Ring and Turbo Chain technology (recovery time < 20 ms) or RSTP/STP (IEEE 802.1w/D).

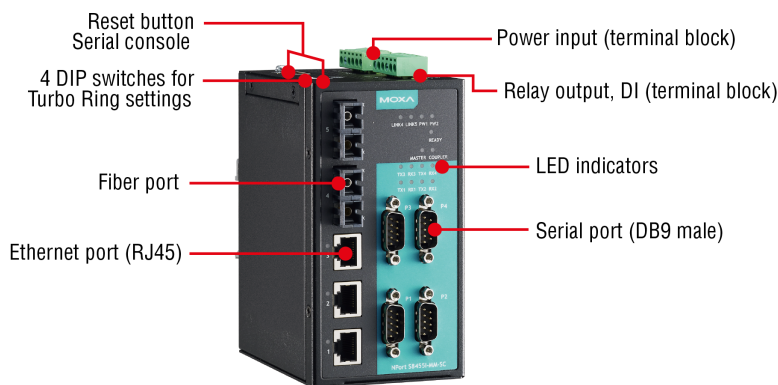
Ring Redundancy at the Device Level

Device-level communication networks for industrial automation are very critical since they are used to control and monitor device processes. The reliability of these communications depends on ring redundancy at the device level, which is designed to provide fast network fault detection and reconfiguration in order to support the most demanding control applications. The NPort S8000 Series integrates a full function NPort device server with an industrial switch to carry serial and Ethernet devices at the same time.

In addition, the NPort S8000 Series can also achieve ring redundancy with standard STP/RSTP and Moxa's proprietary Turbo Ring or Turbo Chain 2 redundancy protocols. This all-in-one design can be used to optimize and simplify your device network and enhance reliability.



Appearance



Specifications

Input/Output Interface

Alarm Contact Channels	2 Resistive load: 1 A @ 24 VDC
Digital Input Channels	2
Digital Inputs	+13 to +30 V for state 1 -30 to +1 V for state 0 Max. input current: 8 mA

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	NPort S8455I/S8455I-T: 5 NPort S8455I-MM-SC/SS-SC Models: 3
100BaseFX Ports (multi-mode SC connector)	NPort S8455I-MM-SC Models: 2
100BaseFX Ports (single-mode SC connector)	NPort S8455I-SS-SC Models: 2

Optical Fiber

		100BaseFX		
		Multi-Mode	Single-Mode	
Fiber Cable Type		OM1	50/125 μm	G.652
			800 MHz x km	
Typical Distance		4 km	5 km	40 km
Wavelength	Typical (nm)	1300		1310
	TX Range (nm)	1260 to 1360		1280 to 1340
	RX Range (nm)	1100 to 1600		1100 to 1600
Optical Power	TX Range (dBm)	-10 to -20		0 to -5
	RX Range (dBm)	-3 to -32		-3 to -34
	Link Budget (dB)	12		29

	<div><div></div><div>100BaseFX</div><div></div></div>			
	<div><div></div><div>Multi-Mode</div><div>Single-Mode</div></div>			
	<div><div>Fiber Cable Type</div><div>OM1</div></div>		<div><div>50/125 μm</div><div>800 MHz x km</div></div>	<div>G.652</div>
		<div>Dispersion Penalty (dB)</div>	<div>3</div>	<div>1</div>
	<div>Note: When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by excessive optical power. Note: Compute the “typical distance” of a specific fiber transceiver as follows: Link budget (dB) > dispersion penalty (dB) + total link loss (dB).</div>			
Magnetic Isolation Protection	1.5 kV (built-in)			
Standards	IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1X for authentication IEEE 802.3 for 10BaseT IEEE 802.3ad for Port Trunk with LACP IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for flow control			
Switch Properties				
IGMP Groups	256			
Max. No. of VLANs	64			
Priority Queues	4			
VLAN ID Range	VID 1 to 4094			
Ethernet Software Features				
Configuration Options	Web Console (HTTP/HTTPS) Windows Utility Serial Console Telnet Console			
Management	BOOTP Device Search Utility (DSU) DHCP Client DHCP Option 82 HTTP IPv4 LLDP Port Mirror RMON SMTP SNMPv1/v2c/v3 Syslog TCP/IP Telnet Web Console			
Filter	802.1Q GVRP IGMP v1/v2			
Windows Real COM Drivers	Windows 11, 10, 8.1, 8, 7, Vista, XP, ME, 98 and 95 Windows Server 2022, 2019, 2016, 2012 R2, 2012, 2008 R2, 2008, 2003, 2000 and NT Windows Embedded CE 5.0 and 6.0, Windows XP Embedded			
Linux Real TTY Drivers	Kernel versions: 6.x, 5.x, 4.x, 3.x, 2.6.x and 2.4.x			

Fixed TTY Drivers	macOS versions: 14, 13, 12, 11 and 10.1x SCO UNIX, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X
Virtual Machine	VMWare ESXi (Windows 11 / 10) VMware Fusion (Windows on macOS 14, 13, 12, 11 and 10.1x) Parallels Desktop (Windows on macOS 14, 13, 12, 11 and 10.1x)
Arm®-based Platform Support	Windows 11 Linux Kernel 6.x, 5.x and 4.x macOS 14, 13, 12 and 11
Android API	Android 3.1.x and later
Time Management	SNTP
MIB	Bridge MIB Device Settings MIB Ethernet-like MIB MIB-II P-BRIDGE MIB Q-BRIDGE MIB RFC1213, RFC1317 RMON MIB Groups 1, 2, 3, 9 RSTP MIB
Redundancy Protocols	RSTP Turbo Chain Turbo Ring v1 Turbo Ring v2
Security	HTTPS, SSL SSH
Authentication	Local Account Accessibility RADIUS

Serial Interface

Connector	DB9 male
No. of Ports	4
Operation Modes	Disabled Real COM mode RFC2217 mode TCP Client mode TCP Server mode UDP mode
Baudrate	50 bps to 921.6 kbps
Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2
Parity	None, Even, Odd, Space, Mark
Flow Control	None RTS/CTS XON/XOFF
Isolation	2 kV
RS-485 Data Direction Control	Automatic Data Direction Control (ADDC)
Pull High/Low Resistor for RS-485	1 kilo-ohm, 150 kilo-ohms
Terminator for RS-485	120 ohms

Console Port	RS-232 (TxD, RxD, GND), 8-pin RJ45 (19200, n, 8, 1)
Serial Standards	RS-232/422/485
Serial Signals	
RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND
DIP Switch Configuration	
Ethernet Interface	Coupler Master Reserved Turbo Ring
Power Parameters	
No. of Power Inputs	2
Power Connector	2 removable 6-contact terminal block(s)
Input Current	935 mA @ 12 VDC
Input Voltage	12 to 48 VDC
Physical Characteristics	
Housing	Metal
Dimensions	73.1 x 134 x 125 mm (2.88 x 5.27 x 4.92 in)
Weight	578 g (1.27 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)
Environmental Limits	
Operating Temperature	Standard Temp. Models: 0 to 60°C (32 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature	-40 to 75°C (-40 to 167°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Standards and Certifications	
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Signal: 1 kV IEC 61000-4-5 Surge: Power: 1 kV; Signal: 0.25 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m; Signal: 10 V/m IEC 61000-4-8 PFMF
Environmental Testing	IEC 60068-2-1 IEC 60068-2-3
Hazardous Locations	Class I Division 2
Safety	EN 60950-1

	IEC 60950-1 UL 508 UL 60950-1
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6

MTBF

Time	NPort S8455I/S8455I-T: 287,354 hrs NPort S8455I-MM-SC/MM-SC-T: 200,951 hrs NPort S8455I-SS-SC/SS-SC-T: 286,993 hrs
Standards	Telcordia (Bellcore) Standard TR/SR

Warranty

Warranty Period	5 years
Details	See www.moxa.com/warranty

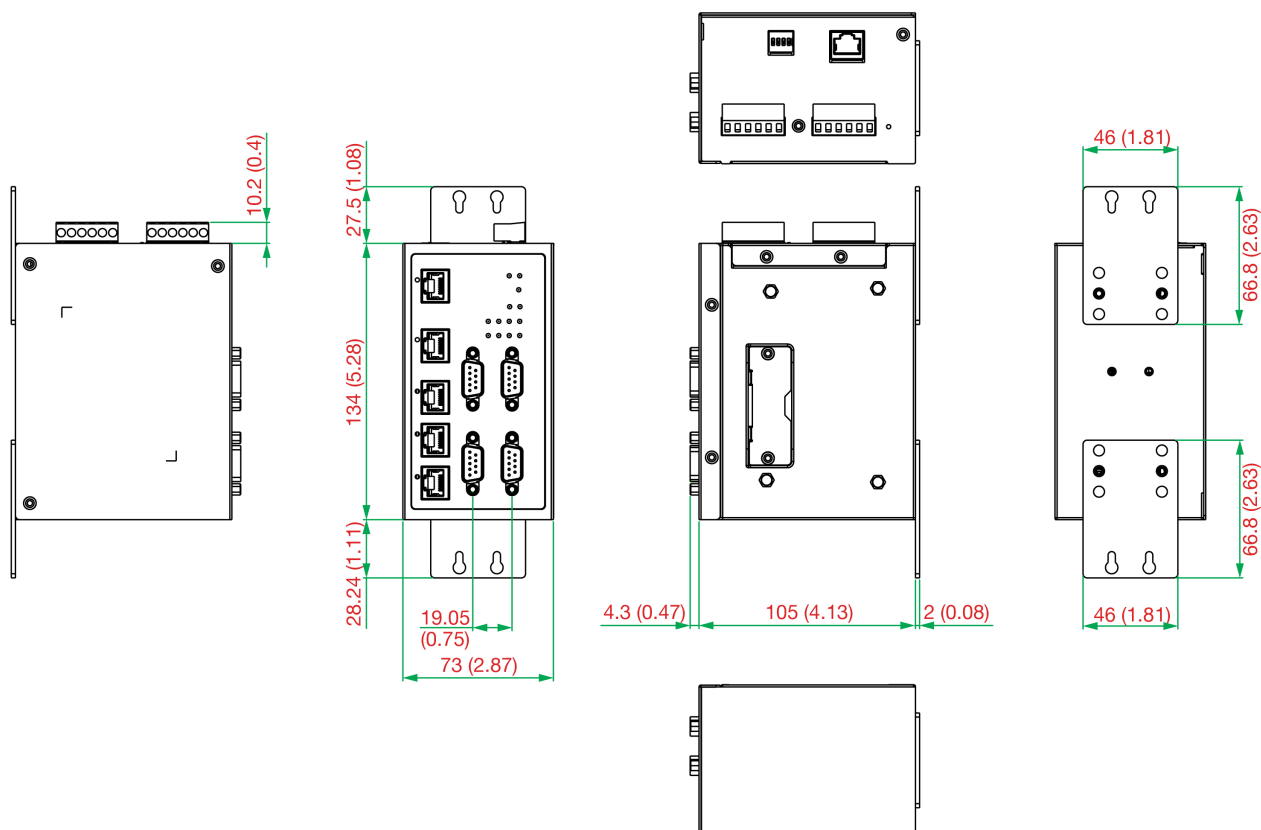
Package Contents

Device	1 x NPort S8000 Series device server
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

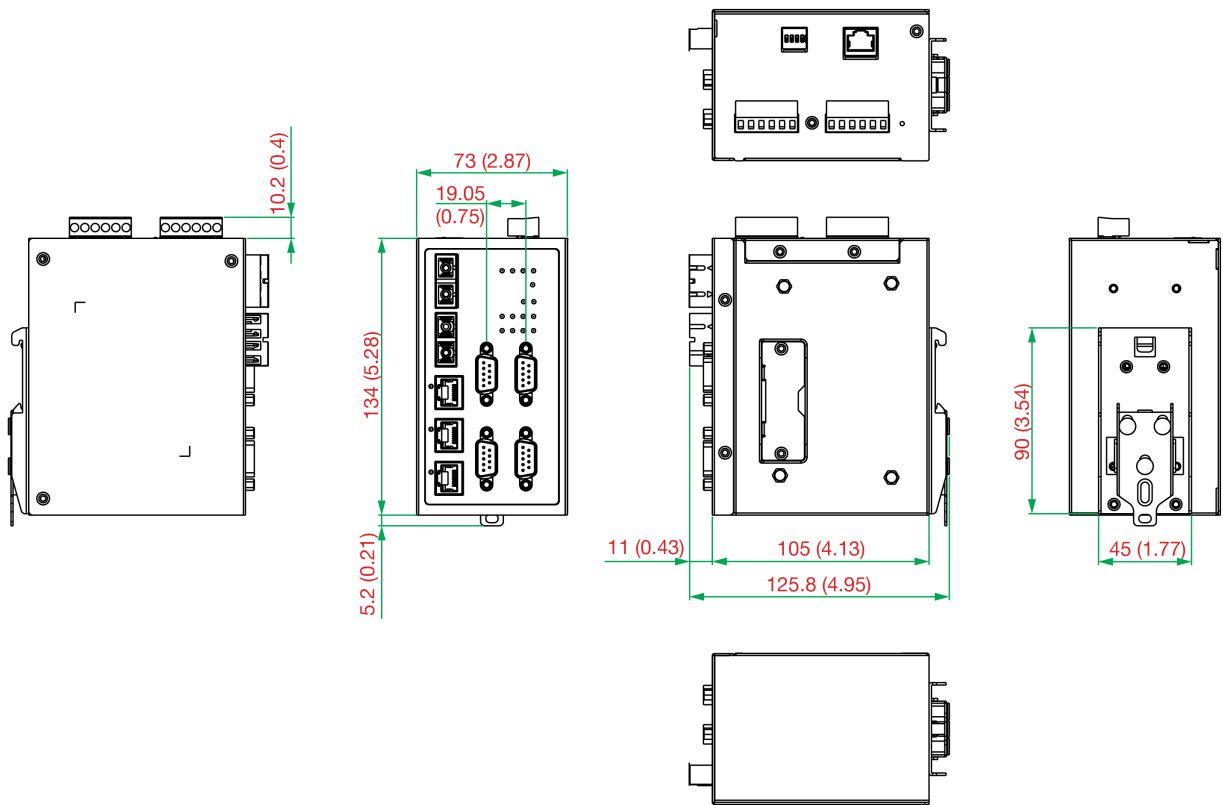
NPort S8455I

Unit: mm (inch)



NPort S8455I Fiber

Unit: mm (inch)



Ordering Information

Model Name	10/100BaseT(X) Ports RJ45 Connector	100BaseFX Ports Multi-Mode SC Connector	100BaseFX Ports Single-Mode SC Connector	Operating Temp.	Input Voltage
NPort S8455I	5	–	–	0 to 60°C	12-48 VDC
NPort S8455I-T	5	–	–	-40 to 75°C	12-48 VDC
NPort S8455I-MM-SC	3	2	–	0 to 60°C	12-48 VDC
NPort S8455I-MM-SC-T	3	2	–	-40 to 75°C	12-48 VDC
NPort S8455I-SS-SC	3	–	2	0 to 60°C	12-48 VDC
NPort S8455I-SS-SC-T	3	–	2	-40 to 75°C	12-48 VDC

Accessories (sold separately)

Cables

CN20070	10-pin RJ45 to DB9 female serial cable
CBL-F9M9-20	DB9 female to DB9 male serial cable, 20 cm
CBL-F9M9-150	DB9 female to DB9 male serial cable, 1.5 m

Connectors

ADP-RJ458P-DB9F	DB9 female to RJ45 connector
Mini DB9F-to-TB	DB9 female to terminal block connector

Power Cords

CBL-PJTB-10	Non-locking barrel plug to bare-wire cable
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Power Supplies

HDR-60-24	60 W/2.5 A DIN-rail 24 VDC power supply, universal 85 to 264 VAC or 120 to 370 VDC input voltage, -30 to 70°C operating temperature
NDR-120-24	120 W/5.0 A DIN-rail 24 VDC power supply, universal 90 to 264 VAC or 127 to 370 VDC input voltage, -20 to 70°C operating temperature

Wall-Mounting Kits

WK-46	Wall-mounting kit, 2 plates, 8 screws, 46.5 x 66.8 x 1 mm
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