NetPortServer Compact Din-Rail 4-Port RS485 Device Server with Modbus and MQTT Support

NPS5431A

4-Port RS485 Serial Device Server

The NPS5431A is an advanced RS485 device server and IoT gateway specifically designed for industrial environments. It integrates multiple functions, including serial device server, Modbus gateway, MQTT gateway, RS485-to-JSON gateway, and virtual COM port device tool. The device features 4 RS485 ports and an RJ45 Ethernet port, offering reliable connectivity. Its compact design supports Din-rail installation, ensuring ease of deployment, while the terminal power supply allows for a wide power voltage input range of 10~30VDC. The NPS5431A presents a cost-effective and space-efficient solution compared to standard products.

-25~70°C   **Windows 10**   **Windows 11**   **Modbus**   **MQTT**

Features & Benefits

Modbus RTU /Ethernet Gateway

• Integrated Serial Port Server (Serial Device Server)

• Modbus RTU Server/ Client

• Modbus RTU to MQTT Gateway

• Cloud JSON data to Modbus RTU

• TCP Server/ Client, UDP, UDP Multicast

• TCP Server

• Auto-Polling Storage Multi Modbus/TCP Client to Single Modbus RTU Server

• Cloud Modbus/TCP to Modbus RTU Client Access

Modbus Gateway

• Modbus RTU protocol to Modbus/TCP

• RTU/Register Auto Polling and Storage

• Allows Multiple points access same serial device

• Scheduling Polling Modbus RTU register

JSON to Modbus RTU

• CSV JSON Table

• Scheduling Polling Modbus RTU register

• Scheduling Publish in JSON format

• Subscribe support request and Setting Modbus Register

Modbus RTU to MQTT

• Publish RTU data in JSON format

• Subscribe JSON to Modbus RTU by HTTP Post, HTTP Get

• NTP support for Network Time Synchronize

Serial Device Server

• TCP/UDP Transmission to virtual serial port

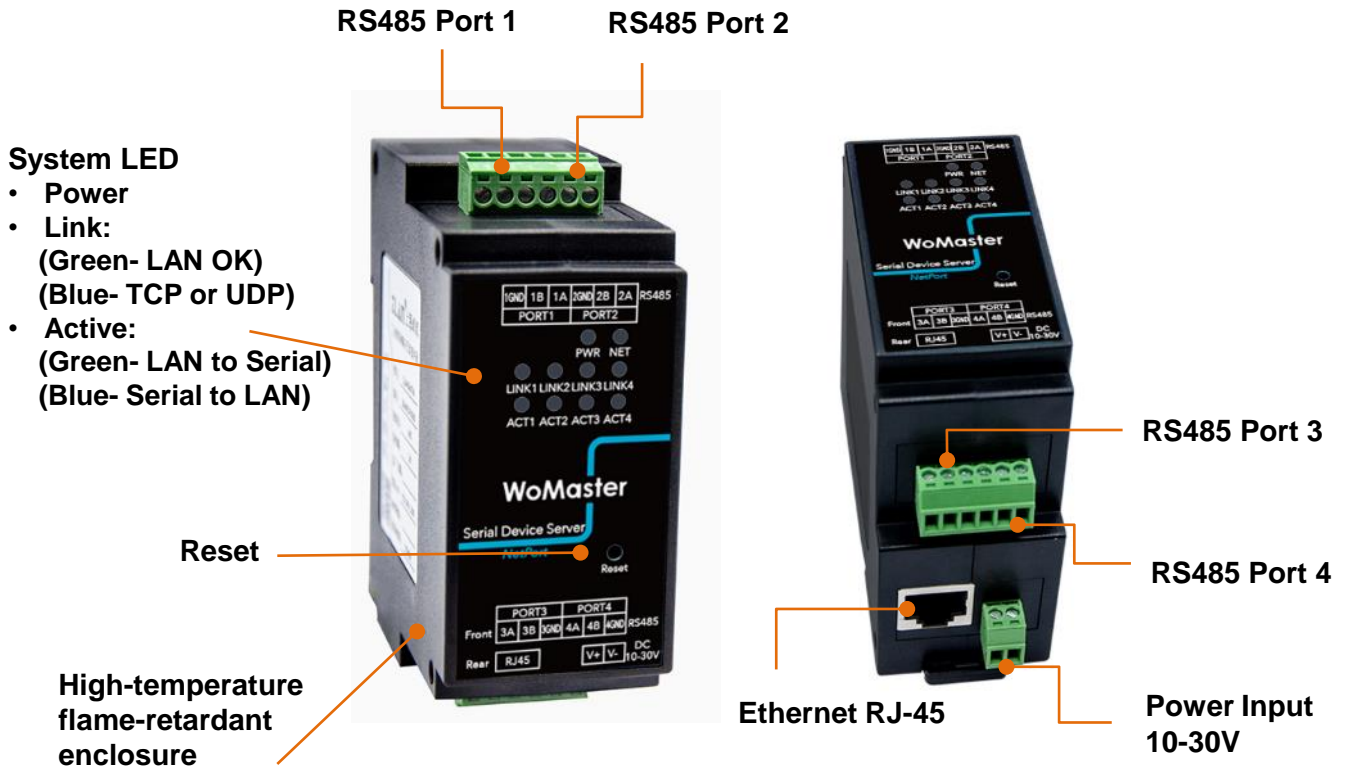• Support Virtual COM Software tool

Serial Interface

• One RS485 terminal with RS485-A, RS485-B, 2-Wires, up to 32 devices

• Baud Rate Support – 300bps ~115200bps, 5-9bits

• Parity Check – None, Odd, Even, Mark, Space

Industrial Application

• DC 10~30V Power Input, Terminal Connector

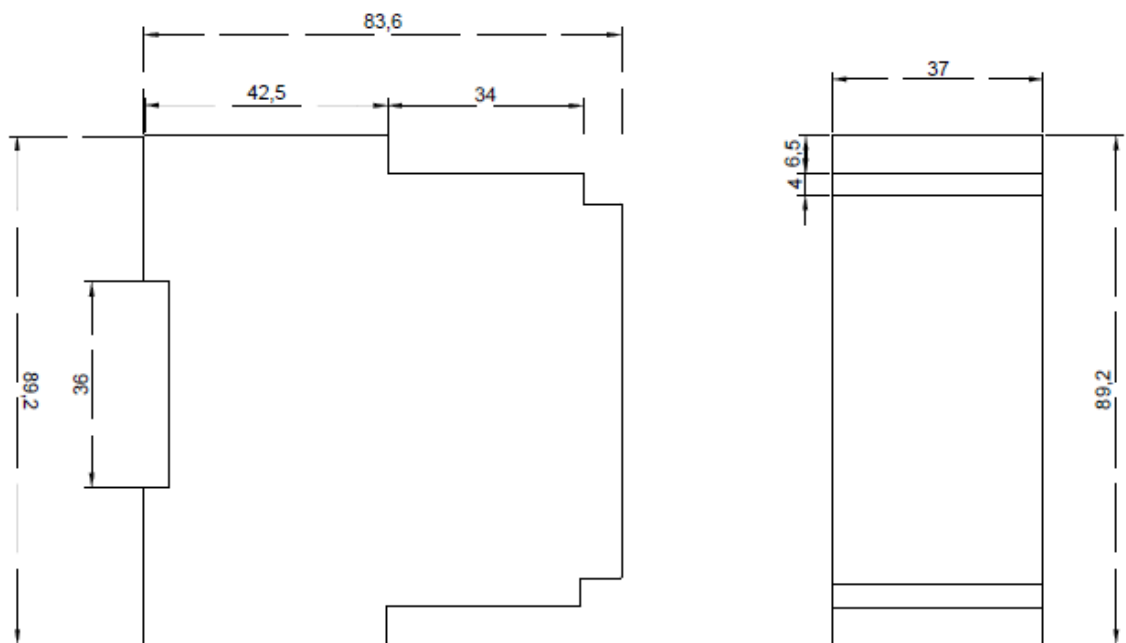• -25~75°C / 5~95% RH Environment Operating Temperature

Interfaces

RS485 Port 1

RS485 Port 2

System LED
- Power
- Link:
  (Green- LAN OK)
  (Blue- TCP or UDP)
- Active:
  (Green- LAN to Serial)
  (Blue- Serial to LAN)

Reset

High-temperature flame-retardant enclosure

RS485 Port 3

RS485 Port 4

Ethernet RJ-45

Power Input 10-30V

Dimensions

37 (w) x 89.2 (H) x 83.6 (D) (mm)

83,6

42,5

34

89,2

36

37

4 6,5

89,2

Features & Benefits

✓ Virtual COM Device Discovery and Management

✓ Device Setting

Save Setting

✓ Cloud MQTT Configuration

Multi Modbus Host

✓ Web Configuration

⚙ Specifications

Network Interface	
Ethernet	IEEE 802.3 Ethernet 10Base-T with Auto MDI/MDI-X 2KV Surge Protection

Serial Interface	
Connector	4 x RS485 Screw Terminal Connector, 2-wire RS-485-A / -B, GND Max 32 x RS-485 Nodes, Max 1200 Meter Distance, 120 Ohm Terminal Resistor for > 300Meters
Serial Parameters	Baud Rate: 300~921600bps, Data Bit: 5~9 Parity Check: None, Odd, Even, Space, Mark Flow Control: None Flow Control

Service Mode	
Virtual COM Driver	Windows XP / Windows 7 / Windows 10/ Windows 11
TCP	TCP Server for up to 30 TCP clients, or TCP client to up to 7 destination IP
UDP / UDP Multicasting	UDP Polling & Response by UDP packet between stations UDP Multicast to all station by UDP packet
Modbus	Modbus RTU to Modbus TCP Modbus TCP to Modbus RTU
Cloud	MQTT, JSON to Modbus RTU, HTTP Post, HPPT Get

Network Feature	
Protocol	Ethernet, IP, TCP, UDP, HTTP, ARP, ICMP, DHCP, DNS, Modbus
Security	TCP with authentication key
DHCP	DHCP Client for IP and DNS information from DHCP server
NTP	Network Time Precision (NTP)

Management	
System Management	Windows Utility, Virtual COM, WEB Management
Windows DLL Library	Device management function library (Windows DLL dynamic link library) by VC, VB, Delphi, or C++ Builder with functions such as *read* and *write*.

Power Input & Interface Connector	
Power Input	10~30VDC Input, Terminal Block, 30mA@12Vdc

Mechanical & Installation	
Installation	Din-Rail
Enclosure	Durable, flame-retardant enclosure that withstands up to 100°C without deformation and self-extinguishes when removed from a fire source
IP Protection	IP40
Dimension	87x36x59mm (LxWxH), Packing Box160x123x79mm, 52pcs per Carton

Environmental	
Operation Temperature	-25°C~70°C, 0% ~ 90%, Non-Condensing
Storage Temperature	-40°C~80°C, 0% ~ 90%, Non-Condensing
EMC	Electrostatic Discharge (GB/T 17626.6-2018): Contact ±8KV, Air ±15KV; Electrical Fast Transients (GB/T 17626.4-2018): Power ±4KV, Signal ±2KV; Surge (GB/T 17626.5-2008): Power ±4KV, Signal ±2KV.

Reliability & Warranty	
MTBF	> 200,000 Hours
Warranty	3 Year

Ordering Information

Model	Description
NPS5130A	Lite Industrial RS485 Device Server, Modbus, MQTT Gateway, 10~30Vdc
NPS5130AI	Lite Industrial RS485 Isolation Device Server, Modbus, MQTT Gateway, 10~30Vdc