

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

## NPS5431A

4-Port Din-Rail 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.



### 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

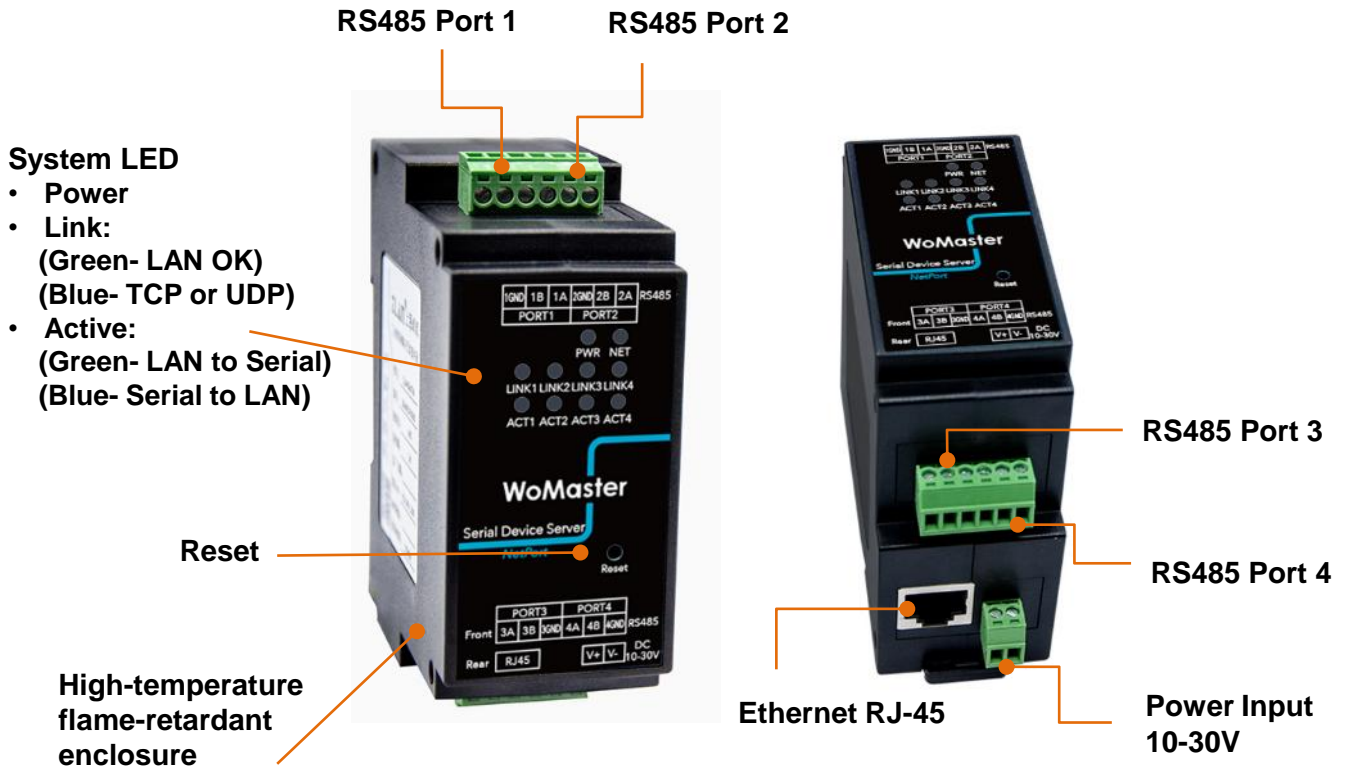
- Four RS485 terminal with RS485-A, RS485-B, 2-Wires, up to 32 devices
- Baud Rate Support – 300bps ~115200bps, 5-9bits
- Parity Check – None, Odd, Even, Mark, Space

#### Industrial Application

- DC 10~30V Power Input, Terminal Connector
- -25~70°C / 5~95% RH Environment Operating Temperature

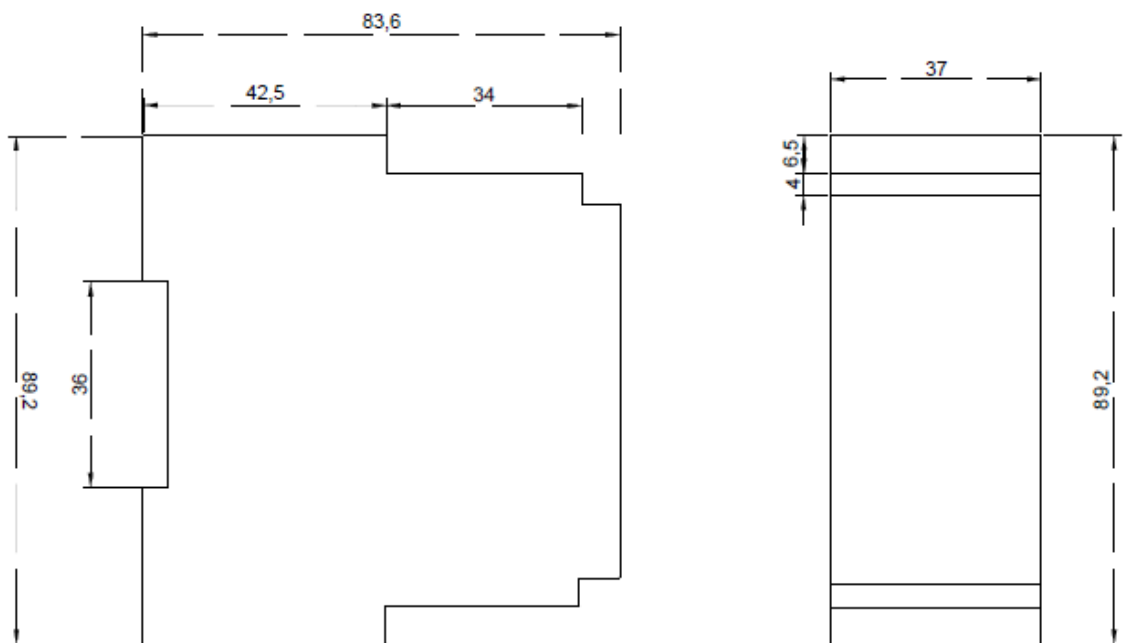


## Interfaces



## Dimensions

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



## ✓ Virtual COM Device Discovery and Management

vir.com Virtual Serial & Device Management - VirCom

Manage(M) Config(C) View(V) Help(H)

Start Stop Device Serial About

ID	Status	Com Na...	COM Name	Type	Device IP	Discription	Dev
1	Connected	COM5	Virtual COM	Bind ID	192.168.0.188	Name : DEV0001	A12

Device Settings

Device Info: Virtual Serial: COM5, Dev Type: , Dev Name: DEV0001, Dev ID: 2878A1282BD3, MAC Addr: 04EEE8182BEB, Firmware Ver: V1.523

Function of the device:  Web Download,  DNS System,  REAL\_COM Protocol,  Modbus TCP To RTU,  Serial Commnad,  DHCP Support,  Storage Extend,  Multi-TCP Connection

Network: IP Mode: Static, IP Address: 192.168.0.188, Port: 4196, Work Mode: TCP Server, Net Mask: 255.255.255.0, Gateway: 192.168.0.1, Dest. IP/Domain: 192.168.0.84, Local IP, Dest. Port: 4196,  UDP Dynamic

Serial: Baud Rate: 9600, Data Bits: 8, Parity: None, Stop Bits: 1, Flow Control: None

Advanced Settings: DNS Server IP: 8.8.4.4, Dest. Mode: Dynamic, Transfer Protocol: None, Keep Alive Time: 60 (s), Reconnet Time: 12 (s), Http Port: 80, UDP Group IP: 230.90.76.1,  Register Pkt.,  ASCII,  Restart If No Data every 300 Sec.,  Enable Parameter Send every 5 Min.

Information: [2025-01-06, 17:07:54] Connected to 192.168.0.188 ok. [2025-01-06, 17:07:54] Connecting... 192.168.0.188. [2025-01-06, 17:07:54] COM5 Create ok! [2025-01-06, 17:07:54] Listen at port 4196 OK.

## ✓ Device Setting

More Advanced Settings...

Save Setting

Advanced Settings: DNS Server IP: 8.8.4.4, Dest. Mode: Dynamic, Transfer Protocol: Modbus\_TCP Protocol, Keep Alive Time: None, Reconnet Time: REAL\_COM Protocol, Http Port: 80, UDP Group IP: 230.90.76.1,  Register Pkt.,  ASCII,  Restart If No Data every 300 Sec.,  Enable Parameter Send every 5 Min.

More Advanced Settings...

## ✓ Cloud MQTT Configuration

Webpage&code download tool

Direct download mode

Configuration save location: G:\MQTT Config

Special configs: Config file source: Read from local directory

Modbus cfg. **MQTT cfg.** JSON cfg. Reg packet. Cmd change. HTTP cfg. Param file. Clear local dir.

Code file download mode

Select code file: C:\lsn2003.bin

Download through the network: Device IP address or domain: 192.168.0.200, Download port (Don't modify): 1092

Download through serial port: Serial port: COM1, Baud Rate: 115200

Flash size: 256 KB, DevID: 2875FC662A2F, Bind ID

Please close any other configuration window before downloading.

Download

## Multi Modbus Host

Modbus Multi-Host Support Settings

Modbus Gateway Type: Auto query storage type

Modbus RTU or ASCII: Auto query storage type

Enable RS485 Multi-Host

Maximum wait time of RS485 bus is idle for: 196 ms(0-8191)

Enable RS485 bus conflict detection

Send data only when RS485 bus is idle for: 20 ms

## ✓ Web Configuration

Spisomconfig

192.168.0.200/external

Logout

Device Information: Device Name: DEV0001, Device MAC: 04EEE8182BEB, Firmware Version: V1.523

Serial Settings: Baudrate: 9600, Data Bits: 8, Parity: None, Stop Bits: 1, Flow Control: None

Network Settings: IP Addressing: Static, IP Address: 192.168.0.200, Local Port: 4196, Mode: TCP Server, Subnet Mask: 255.255.255.0, Gateway: 192.168.0.1, Destination IP/DNS: 192.168.0.84, Destination Port: 4196, Web Port: 80

Multi-Master Settings: Protocol: None, Response Timeout: 0 (0-60000ms), Multi-Master: Disabled, Transfer Delay: 20 (0-255ms)

Advanced Settings: Watchdog Reset: Disable, Watchdog Reset Time: 300 (0-1270), Reconnet Time: 12 (1-255)

Modify Web Password: New Password: , Confirm Password:

Submit

NOTE: When the multi-master is disabled, the response timeout will always be 0. The timeout must be a multiple of 32.

Network Interface	
<b>Ethernet</b>	10/100M Ethernet 2KV Surge Protection
Serial Interface	
<b>Connector</b>	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
<b>Serial Parameters</b>	Baud Rate: 300~921600bps, Data Bit: 5~9 Parity Check: None, Odd, Even, Space, Mark Flow Control: None Flow Control
Service Mode	
<b>Virtual COM Driver</b>	Windows XP / Windows 7 / Windows 10/ Windows 11
<b>TCP</b>	TCP Server for up to 30 TCP clients, or TCP client to up to 7 destination IP
<b>UDP / UDP Multicasting</b>	UDP Polling & Response by UDP packet between stations UDP Multicast to all station by UDP packet
<b>Modbus</b>	Modbus RTU to Modbus TCP Modbus TCP to Modbus RTU
<b>Cloud</b>	MQTT, JSON to Modbus RTU, HTTP Post, HPPT Get
Network Feature	
<b>Protocol</b>	Ethernet, IP, TCP, UDP, HTTP, ARP, ICMP, DHCP, DNS, Modbus
<b>Security</b>	TCP with authentication key
<b>DHCP</b>	DHCP Client for IP and DNS information from DHCP server
<b>NTP</b>	Network Time Precision (NTP)
Management	
<b>System Management</b>	Windows Utility, Virtual COM, WEB Management
<b>Windows DLL Library</b>	Device management function library (Windows DLL dynamic link library) by VC, VB, Delphi, or C++ Builder with functions such as <i>read</i> and <i>write</i> .
Power Input & Interface Connector	
<b>Power Input</b>	10~30VDC Input, Terminal Block, 30mA@12Vdc
Mechanical & Installation	
<b>Installation</b>	Din-Rail
<b>Enclosure</b>	Durable, flame-retardant enclosure that withstands up to 100°C without deformation and self-extinguishes when removed from a fire source
<b>IP Protection</b>	IP40
<b>Dimension</b>	87x36x59mm (LxWxH), Packing Box160x123x79mm, 52pcs per Carton
Environmental	
<b>Operation Temperature</b>	-25°C~70°C, 0% ~ 90%, Non-Condensing
<b>Storage Temperature</b>	-40°C~80°C, 0% ~ 90%, Non-Condensing
Reliability & Warranty	
<b>MTBF</b>	> 200,000 Hours
<b>Warranty</b>	3 Year

Model	Description
NPS5431A	4 Port Din-Rail RS485 Device Server, Modbus, MQTT Gateway, 10~30Vdc