

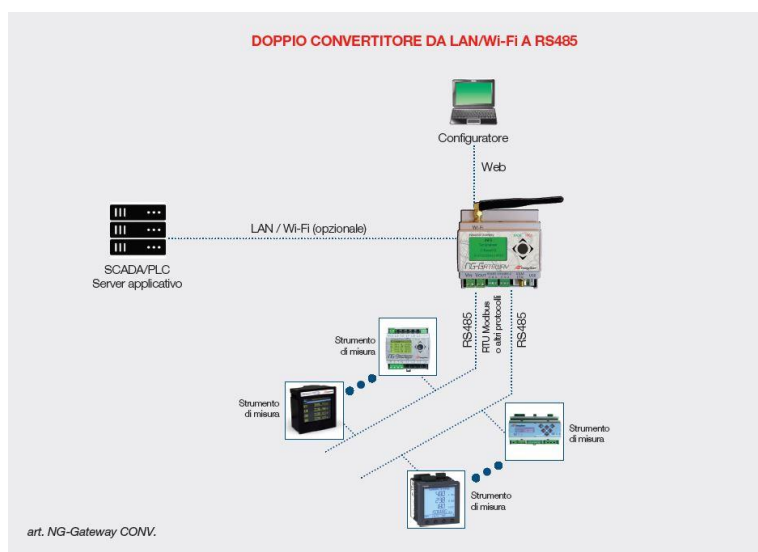
NG-Gateway – Tutorial 2

LAN-RS485 converter and Modbus TCP Gateway Modes

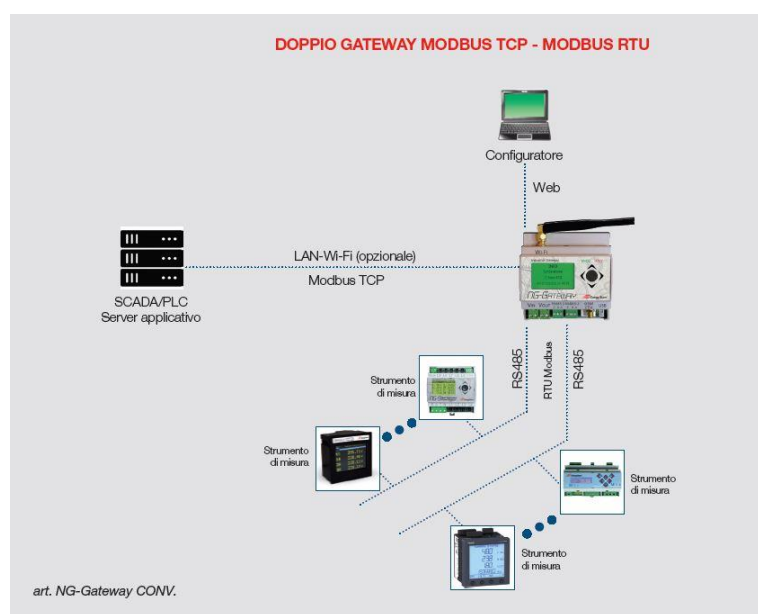
1. Introduction

NG-Gateway is equipped with two RS-485 independent and galvanically isolated ports. Each port can be configured with different functions.

When in LAN-RS485 converter mode, NG-Gateway allows data transfer between host and serial devices. The Host can establish a connection with the NG-Gateway and, once connected, it can send and receive data to and from serial devices.



NG-Gateway can also be used in Modbus TCP gateway mode. In this mode, it receives Modbus TCP requests and converts them in Modbus RTU types. NG-Gateway then sends them to the serial bus and waits for a Modbus RTU reply and converts it into Modbus TCP.



2. LAN-RS485 converter mode configuration

Access the NG-Gateway web interface as administrator. Select *System configuration* from the *Configurations* drop down menu.

Click on *Serial 1* from the left column menu.

Click on the drop down menu next to “*mode*” to select a port’s functioning mode.

You can configure the serial port in three different ways:

- *LAN Converter*: data transfer between LAN and serial;
- *Datalogger*: available only for Data logger and Mini Web Server versions; find explanation in their own tutorial;
- *Modbus tcp gateway*: enables Modbus TCP gateway mode;

Selecting *LAN converter* mode, will open parameters’ configuration text boxes. Set the parameters depending on the connected devices.

The screenshot displays the 'Serial 1' configuration page in the NG-Gateway web interface. The left sidebar shows the 'System configuration' menu with 'Serial 1' selected. The main configuration area includes the following fields:

- Mode:** A dropdown menu currently set to 'LAN converter'.
- Name:** An empty text input field.
- Baud rate:** A dropdown menu currently set to '9600'.
- Data bits:** A dropdown menu currently set to '8'.
- Stop bits:** A dropdown menu currently set to '1'.
- Parity:** A dropdown menu currently set to 'None'.
- Remote:** An empty text input field.
- Port:** A text input field currently containing '0'.
- Allowed ips:** An empty text input field.

At the bottom of the configuration area are two buttons: 'Cancel' and 'Save'.

- *Name*: into *Name* area you can write a serial port custom name to facilitate the management;
- *Baud rate*: select the desired communication speed from the *Baud rate* menu;
- *Data bits*: select the desired value from the *data bits* menu (in most cases it will be 8); data bits correspond to the number of bits used to represent a data character;
- *Stop bits*: select the desired value from the *Stop bits* menu; the most common value is 1;
- *Parity*: select from the list in the *Parity* menu, the correct value for our application;
- *Port*: in the *Port* area, you need to indicate the TCP port to use for network connection; you need to use an available TCP port; use for example 4001 port;

- *Allowed IPs*: in *Allowed IPs* area, it's possible to insert a list of enabled IP addresses to access the TCP port. This is a security system, used to prevent unknown hosts from accessing your data; to insert more than one IP address, use comma or semicolon as separators.

Once the configuration is finished, click save if you are sure of the inserted parameters. There are two buttons in the toolbar: *Show counters* and *reset counters*.

Clicking on *Show Counters*, a window will pop up showing received (RX) and transmitted (TX) data counters. Click on *reset counters* to delete data transfer counters.

3. Modbus TCP gateway mode configuration

Select Modbus TCP gateway from the *Mode* menu.

The first part of the page is dedicated to the configuration of serial communication parameters, and is identical to the one described in *Lan converter* mode.

The second part of the page is indicated as *Modbus tcp gateway*.

- *Request timeout (ms)*: in the *Request timeout* field, you need to insert the amount of time in milliseconds that has to pass before the request goes on timeout;
- *Response timeout (ms)*: in the *Response timeout* field, you need to insert the amount of time in milliseconds that has to pass before the waiting response time goes on timeout.

As you can see, page already has default settings. If you don't need to use any custom parameters, we suggest you to leave the default ones unaltered.

Port and *allowed ips* fields have already been described in the Lan converter configuration part.