Locomarine

ADD-ON MODULE

NMEA0183 TO ETHERNET CONVERTER

The easiest way to stay online.

Installation Manual

version 2.1

Read carefully.

For better understanding check video tutorials on our website.

Register your product for software update notifications.

Thank you.

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RoHS COMPLIANT

All devices in the Yacht Router series comply with the Restriction of Hazardous Materials (RoHS) Directive. This means that all components used to build Yacht Router and add-on modules are RoHS compliant. The RoHS Directive bans placing on the EU market new electrical and electronic equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants.

INTRODUCING YACHT ROUTER SOLUTION

Yacht Router with add-on modules is a complete network infrastructure solution for yacht or boat of any size. Yacht Router devices with add-on modules will help you to easily install, setup and control Internet connection on your yacht. The most important part of Yacht Router solution is the software which controls complete system. It is designed by professionals specialized in yacht communication systems in collaboration with experienced yacht captains. The result is a system that is simple to operate, maintain and control. Underneath simple touch user interface, Yacht Router with add-on modules is a solution with an industry level of reliability, performance and unprecedented level of security.

DISCLAIMER AND WARNING

The contents of this manual are well prepared by Locomarine Networks d.o.o.
While we try to improve our equipment at all times, Locomarine Networks d.o.o. shall incur no liability based on contents, updates or modification of the contents, or the lack of contents in this manual.

Because of the nature of wireless communications, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (i.e, have errors) or be totally lost. Although significant delays or losses of data are rare when wireless devices such as the Yacht Router are used in a normal manner with a well-constructed network, the Yacht Router device and additional modules should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. Locomarine Networks d.o.o. and its affiliates accept no responsibility for damage of any kind resulting from delays or errors in data transmitted or received using the Yacht Router device, or for failure of the Yacht Router device to transmit or receive such data.

The equipment said in this manual must only be used for what it was designed.

Improper operation or installation may cause damage to the equipment or personal injury. Locomarine Networks d.o.o. will not incur any liability of equipment damage or personal injury due to improper use or installation of the equipment. It is strongly recommended to read this manual and the following safety instructions before proceeding to installation or operation.

SAFETY INSTRUCTIONS

ELECTRICAL SHOCK HAZARD: Do not open enclosure of the equipment if you are not qualified to do it.

TURN OFF THE POWER IMMEDIATELY IF WATER LEAKS INTO THE EQUIPMENT OR AN OBJECT DROPS INTO THE EQUIPMENT:
Continue operating the equipment could cause electrical shock or fire. Contact your nearest distributor or dealer for service.

DO NOT DISASSEMBLE THE EQUIPMENT OR MODIFY THE EQUIPMENT: Improper disassemble or modification could cause electrical shock, fire, or personal injury.

AVOID OPERATING THE EQUIPMENT WITH WET HANDS: Electrical shocks could be resulted if operating with wet hands.
USE PROPER FUSE: Damage to the equipment or fire could be resulted if using improper fuse.

TURN OFF THE POWER IMMEDIATELY IF THE EQUIPMENT IS EMITTING SMOKE OR FIRE: Continue operating the equipment could cause electrical shock or fire. Contact your nearest distributor or dealer for service.

DO NOT PLACE ANY LIQUID-FILLED CONTAINER ON TOP OF THE EQUIPMENT.

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1.1. ABOUT NMEA0183 TO ETHERNET CONVERTER

NMEA0183 to Ethernet converter (*Converter* in further text) is Add-on module compatible with every Yacht Router models. It will give you ability to connect any NMEA0183 source (e.g. GPS, plotter, sounder, etc) to Yacht Router or any other TSP base device for purpose of getting NMEA0183 data in TCP format available on your Vessel Network both over WIFI or Ethernet. In addition to NMEA0183, device will also work with RS232 protocol over dedicated connector.

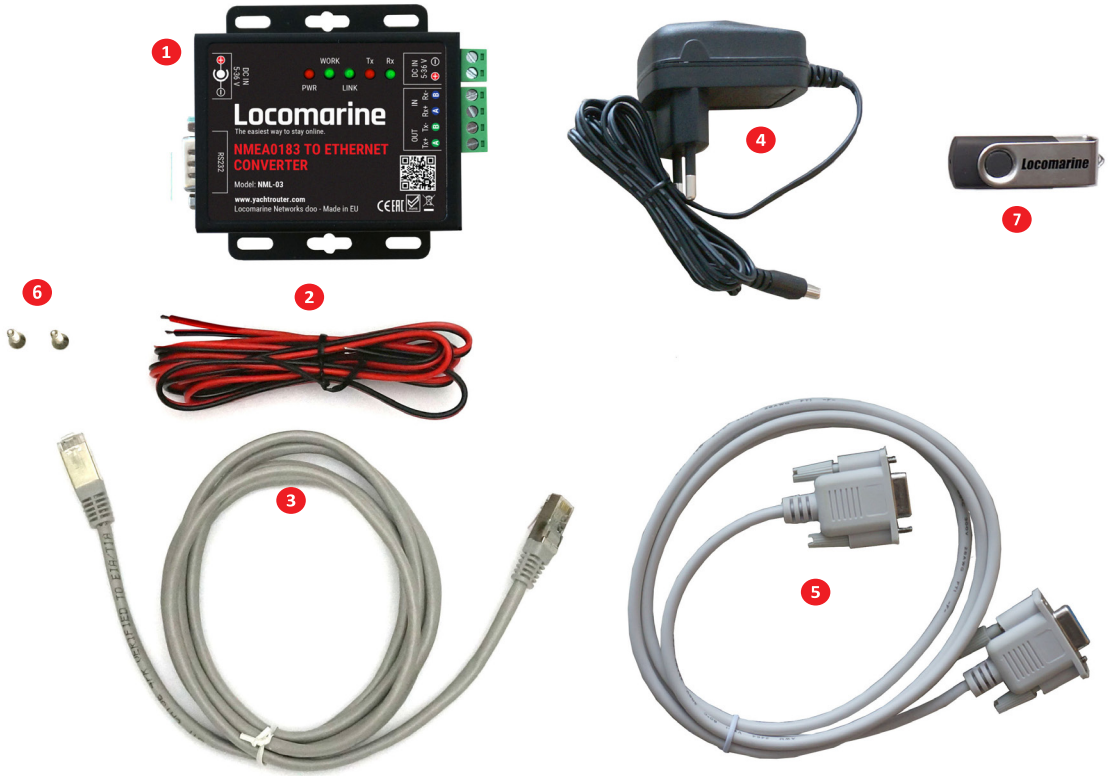
Converter cannot simultaneously work with NMEA0183 and RS232 port.

Converter is compatible with any TCP based device (e.g. routers, switches, computers) from other manufacturers.

1.2. WHAT IS IN THE PACKAGE

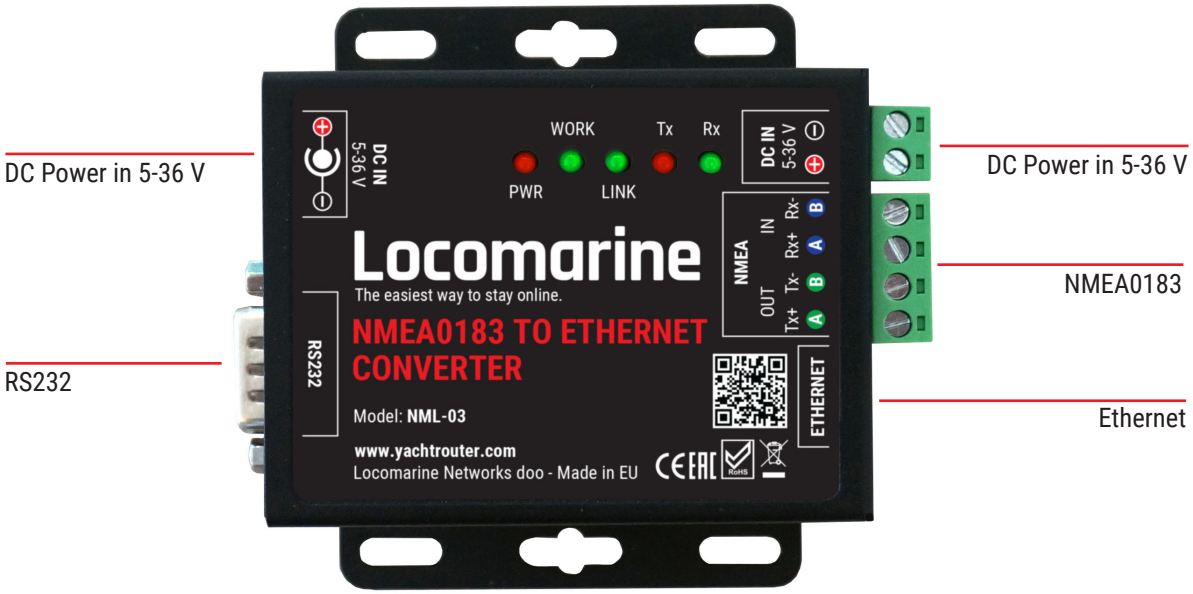
When shipped, all devices are wrapped in plastic bags that protect them from humidity. Devices are then placed into a cardboard box. A bag containing accessory items is placed inside the box too.

1 - NMEA0183 to Ethernet converter, NML-03, 1 pcs
2 - DC power cable without connectors 2 m, PWC-04, 1 pcs
3 - CAT5 cable (with connectors), CAT5-02, 1 pcs
4 - AC/DC adapter (with connector), 1 pcs
5 - RS232 cable, 1 pcs
6 - Fixing screw, FSC-01, 2 pcs
7 - Manuals & control software (on USB stick), QIG-00, 1 pcs



1.3. PORTS AND CONNECTORS

Converter is equipped with following ports and connectors.



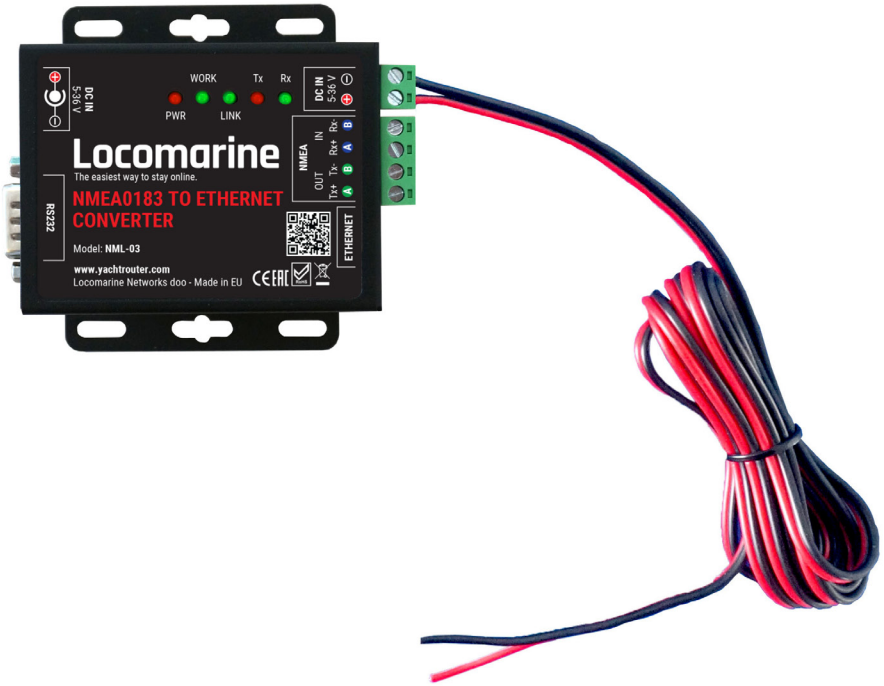
1.4. INDICATORS

Converter is equipped with following indicators.

POWER - Power indicator
WORK - Work indicator: Blinking every 1s = normal operation, Off = not working
LINK - Ethernet connection: On = TCP connection established, Off = TCP connection not available
TX - sending data to NMEA or RS232 port
RX - receiving data from NMEA or RS232 port

2.1. CONNECTING POWER SUPPLY

To power Converter connect it to DC power source using supplied DC power cable. Power cable consist of RED and BLACK wire. Connect RED wire to positive (+) and BLACK wire to negative (ground -) power source as indicated on a following photo.



You can also use supplied AC/DC converter power cable with standard 5.5 mm connector.

IMPORTANT

Never connect more than one power source at the same time. Connecting multiple power supplies at the same time can damage device and void a warranty.
Wrongly connected DC power cable can damage device and void a warranty.
Voltage lower than 5 V and higher than 36 V can damage device and void a warranty.

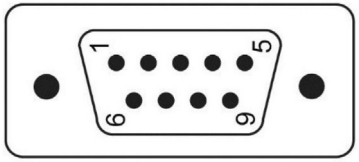
2.2. CONNECTING NMEA0183 DEVICE

To connect NMEA0183 device to Converter use NMEA0183 port as specified bellow.

DEVICE PORT/CABLE *(NMEA possible labelling)*	**CONVERTER PORT**
Tx A / Out A / Tx+	NMEA IN Rx+ / A
Tx B / Out B / Tx-	NMEA IN Rx- / B
Rx A / In A / Rx+	NMEA OUT Tx+ / A
Rx B / In B / Rx-	NMEA OUT Tx+ / B

2.3. CONNECTING RS232 DEVICE

To connect RS232 device (e.g. serial port on computer or AIS) to Converter use RS232 port as specified bellow.



PIN layout
2 - RXD
3 -TXD
5 - Ground (GND)

2.4. CONNECTING CONVERTER TO YACHT ROUTER

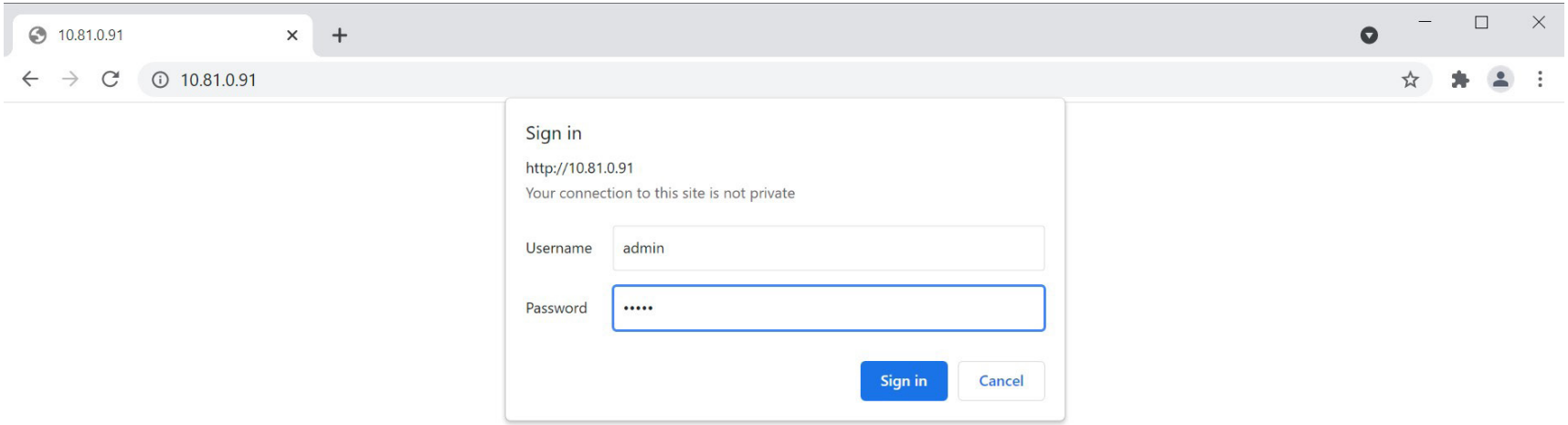
To connect Converter use supplied Ethernet cable or similar Ethernet cable of your choice. Plug Ethernet cable to any available Vessel Network LAN port on Yacht Router, WIFI Extender or LAN Expander connected to the system.

IMPORTANT | We strongly recommend usage of high-quality CAT6 cable. CAT5 cables are not recommended on installation where cable is longer than 10 meters.

3.1. ACCESING CONVERTER OVER YACHT ROUTER

To manage Converter you need to connect with your computer, smartphone or tablet to any Yacht Router Vessel Network by network cable or via WIFI. Once connected, Converter setup is managed via dedicated web page accessible by any web browser (e.g. Chrome, Safari, Edge).

You can acces Converter by typing following IP address into your browser: 10.81.0.91

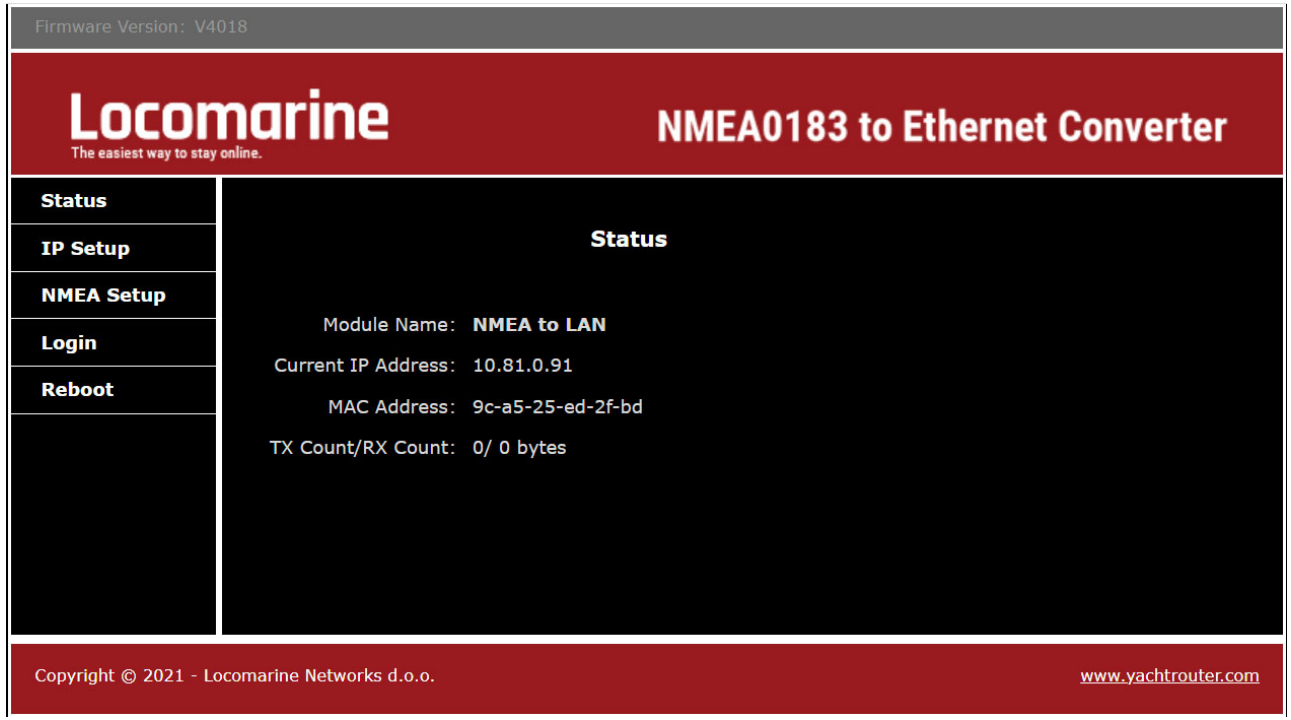


Enter initial login details to enter Converter setup page:

Username: admin
Password: admin

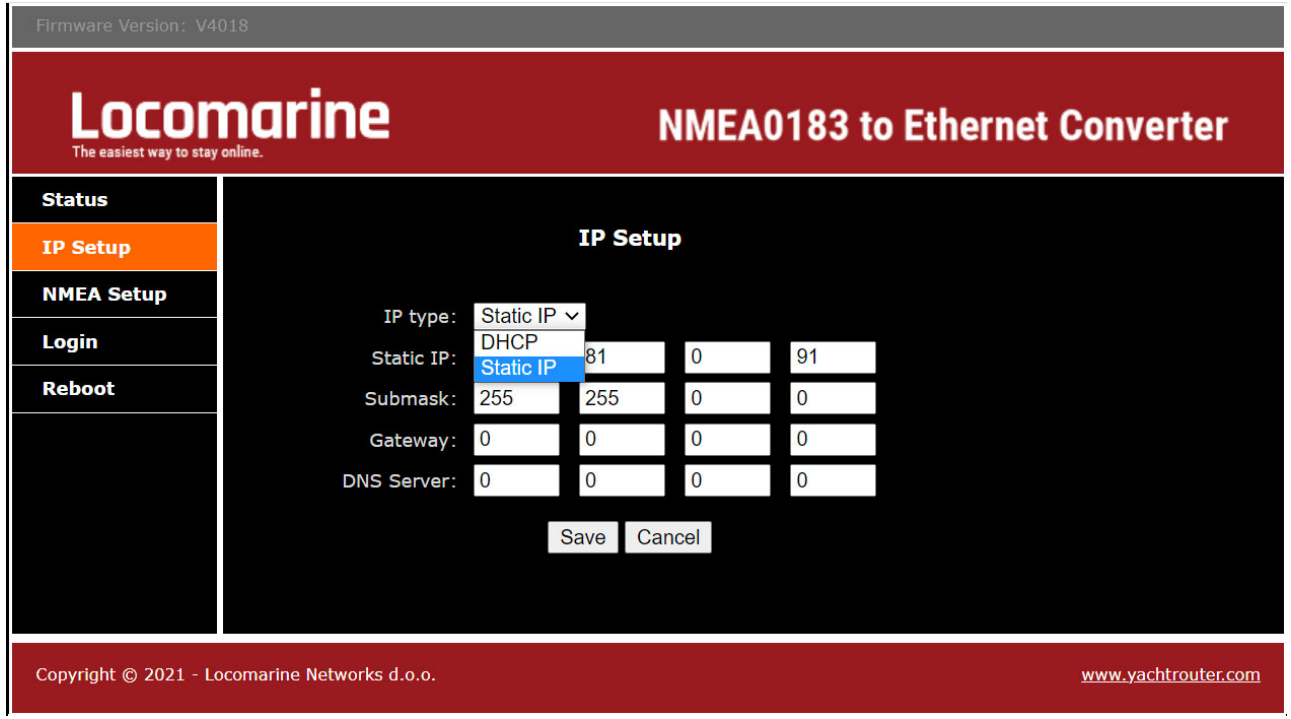
3.2. STATUS PAGE

Status page is initial page of Converter setup where you can read current device status.



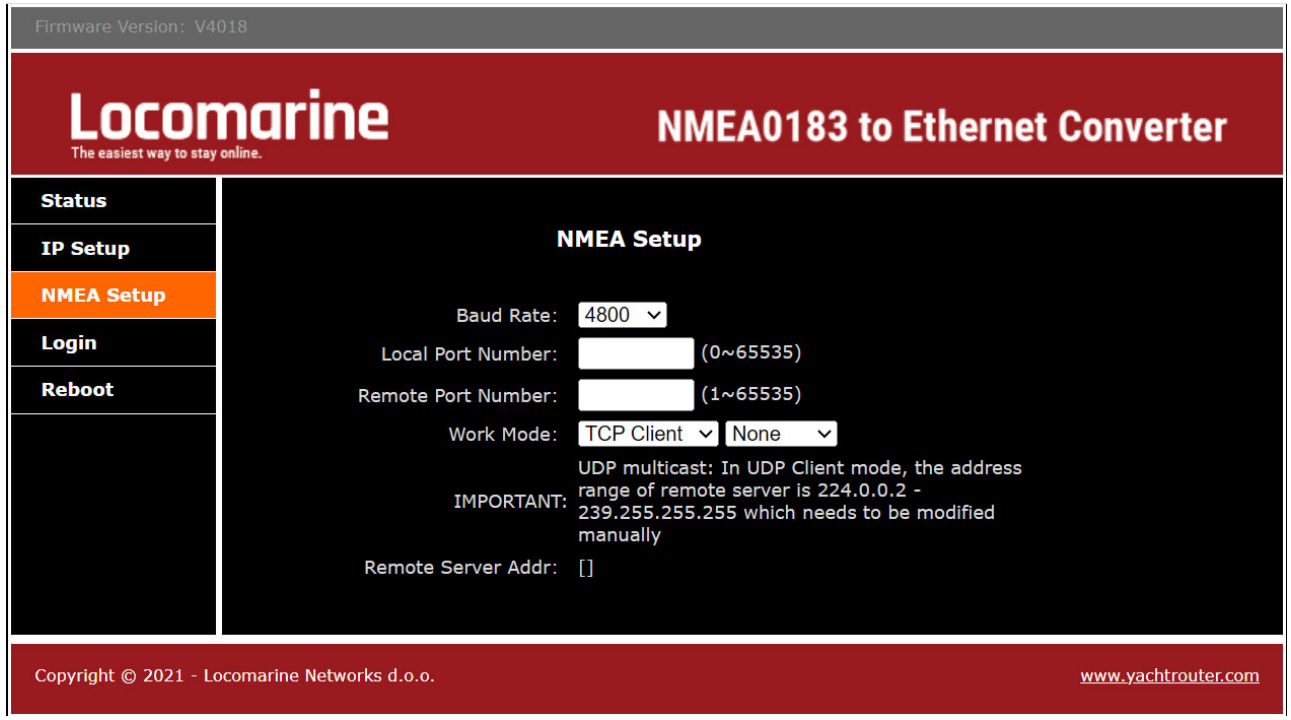
3.3. IP SETUP

On this page you can set Converter to work with DHCP or set Static IP address.



3.4. NMEA SETUP

On this page you can set parameters for NMEA and RS232 port.



Baud Rate

Port communication speed. Default parameter for most NMEA0183 based device is 4800. Heading sensors, AIS and few other usually use 38400.

Local/Remote Port Number

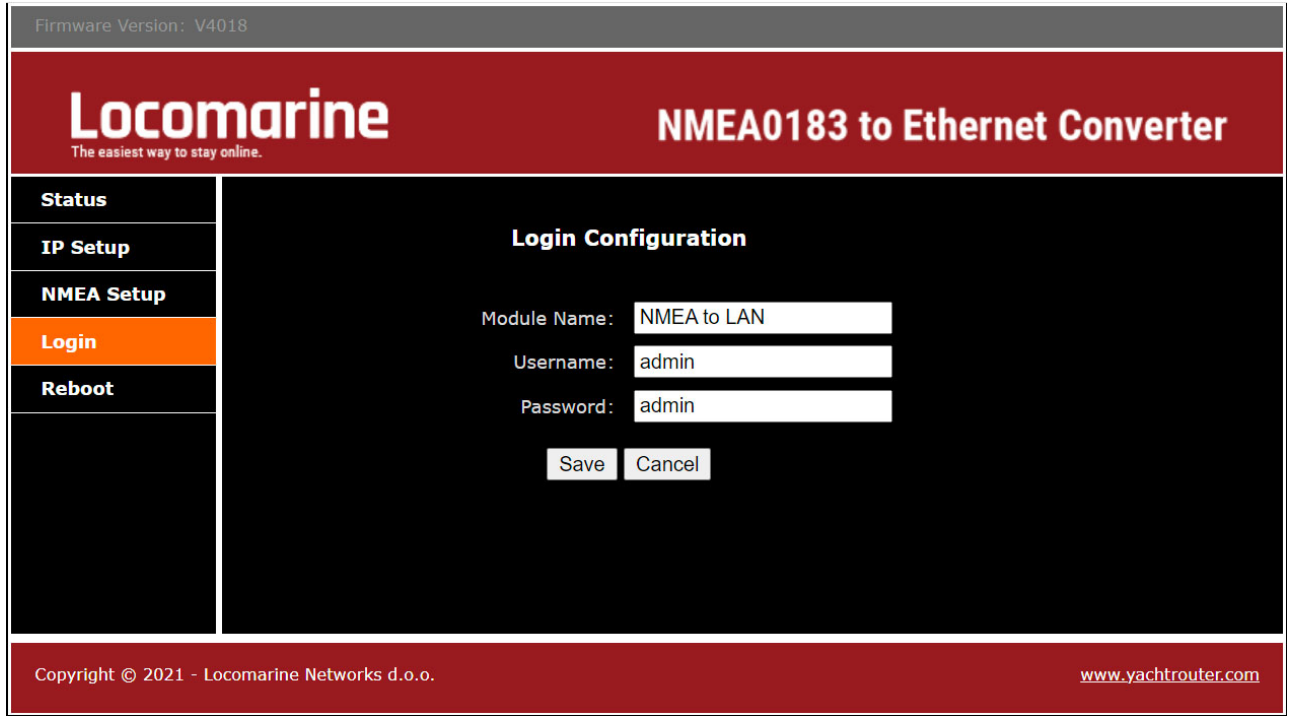
Default Port Number is 1000. You will use this Port number when you want to access NMEA data stream from NMEA or RS232 port over IP (e.g. 10.81.0.91:1000). You can change it according your needs.

Work Mode

Choose between UDP Client, TCP Client, UDP Server, TCP Server depending on your requirements. Default value is TCP Server. In a second menu you can choose Multicast, default value is None.

3.5. LOGIN SETUP

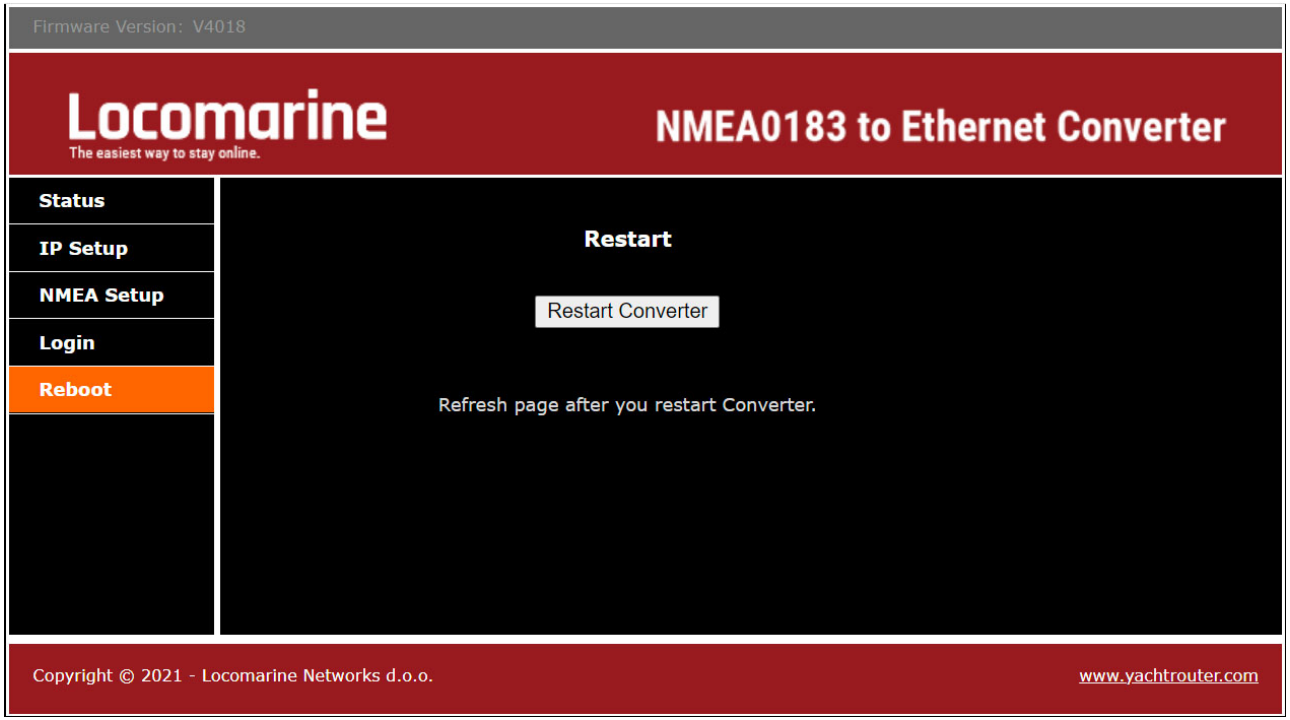
On this page you can change name of the Converter and login details.



Both User name and Password can have maximum 5 characters.

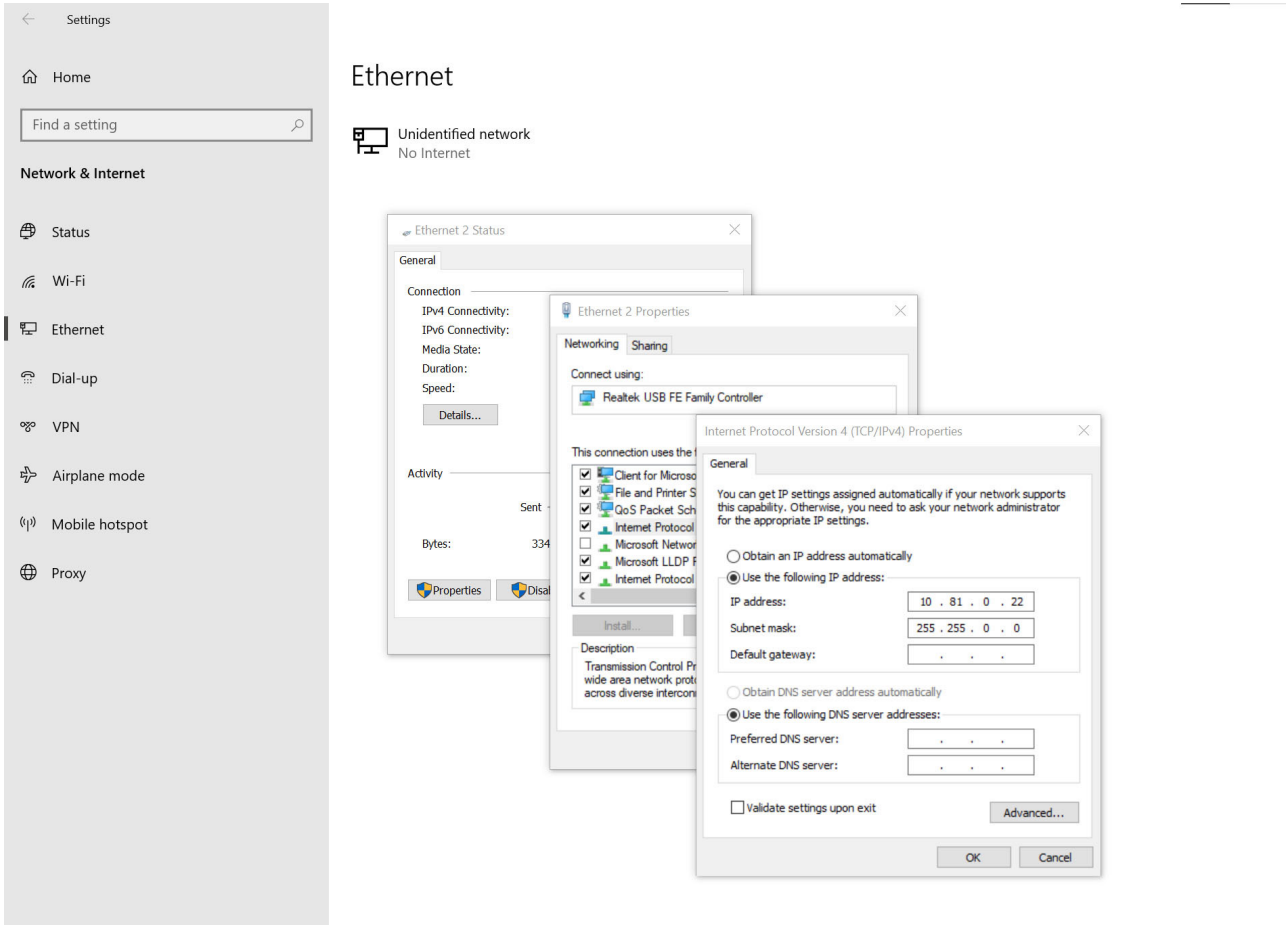
3.6. REBOOT

On a Reboot page you can find Reboot button that you have to press to upload changes to Converter.



3.7. ACCESSING CONVERTER DIRECTLY VIA COMPUTER

If you want to connect comptuer directly to Convert you will have to set fixed IP address of your computer to match IP range of Converter.
We suggest you to use following IP address: 10.81.0.100 and Subnet mask: 255.255.0.0



Once you change IP address on your computer you will be access Converter using web browser as described in Chapter 3.1

4.1. HARDWARE SPECIFICATIONS

Ethernet

Rate: 10/100 Mbps auto switch between cross and direct connection
IP Mode: Static IP, DHCP

Serial and NMEA

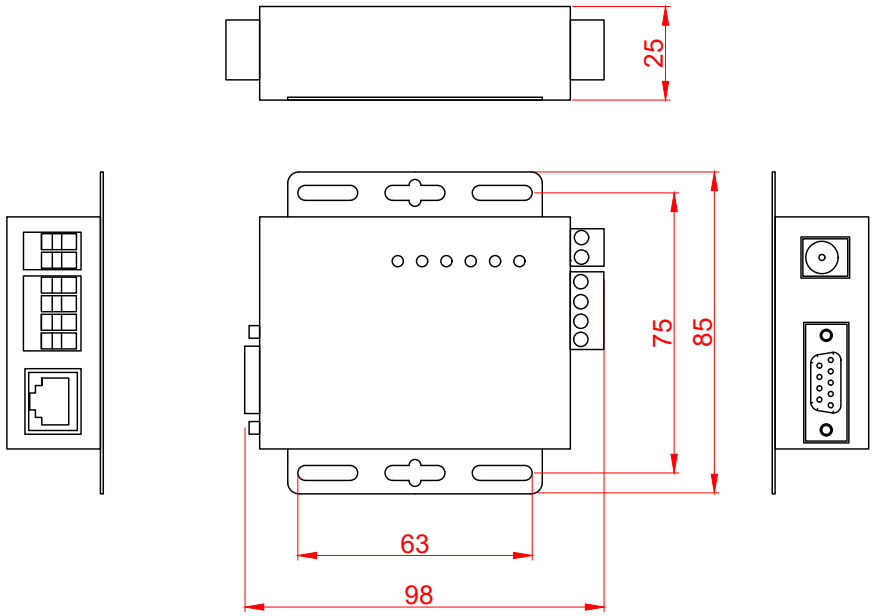
Port number: 1x RS232, 1x NMEA (cannot be used at the same time)
Interface standard: RS-232: DB9 pin type, NMEA: 4 wire (RS422 level)
Baud rate: 4800, 9600, 19200, 38400
Reliability level: 2KV electromagnetic isolation

Basic parameters

DC power supply input range: 5-36 V
Max. power consumption: 53 mA
Operating temperature range: -25 to +75 °C
Operating humidity range: 5-95 % non-condensing
IP Protection: IP50
Dimension (WxDxH, including connectors): 98 x 85 x 25 mm

4.2. OUTLINE DRAWING

All dimensions in mm.



NMEA0183 to Ethernet converter