Ethernet Module
EL-ETH

User manual

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1. Technical data

- Dimensions: 108 x 35 x 59 mm
- Power supply: 24 V AC
- Communication: Ethernet: 10 Base-T, RS 485
- Mounting: DIN rail

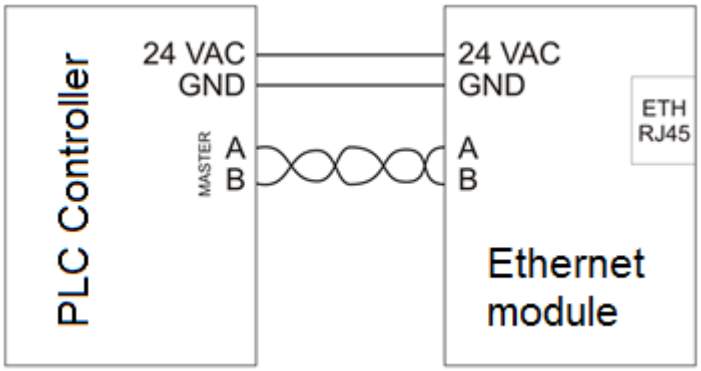
2. Terminals

24 VAC – power supply 24 VAC
GND – power supply ground
A, B – RS-485 communication lines
ETH – Ethernet connector RJ45

3. Interface elements

FACTORY RESET – restore factory settings
COM / ERR – communication and errors indication

4. Example of connecting the module to the PLC controller



Ethernet module allows communication of the devices equipped with RS-485 interface via LAN / WAN network. It supports network protocols: ARP, ICMP, IP, TCP, UDP and HTTP, so that enables remote configuration and administration of the module via a web server's embedded web page. In UDP mode, the module can transfer data at up to 10 IPv4 addresses.

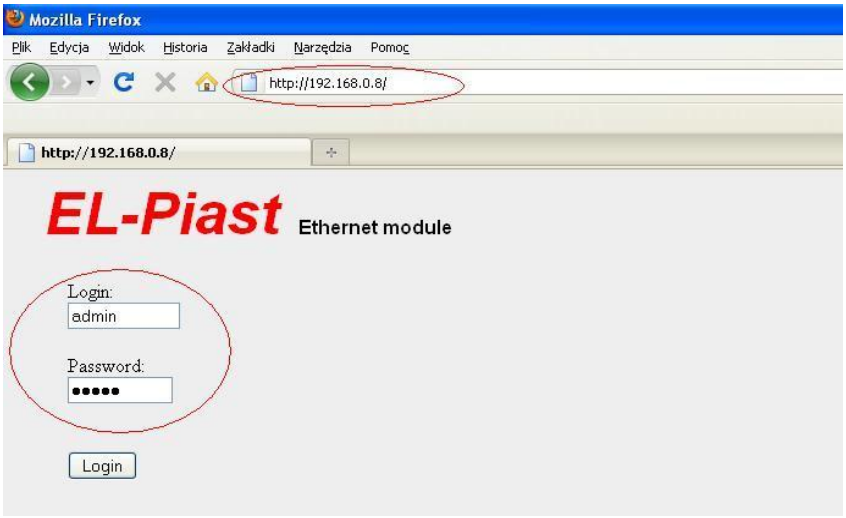
5. Factory settings

	Parameter	Parameter value
Authorisation	Login	admin
	Password	admin
IP setup	IP address	192.168.0.8
	Net mask	255.255.255.0
	Default Gateway	192.168.0.1
TCP setup	TCP mode	TCP serwer
	Server TCP port	56789
	TCP remote IP address	192.168.0.1
UDP setup	UDP mode	Disable
System info	MAC address	Unique
	Mapped MAC address	02-04-06-06-0A-0C
Serial setup	Baud rate	9600 bits/s
	Word length	8 bits
	Stop bits	2
	Parity	None
	Delimiter time	10ms

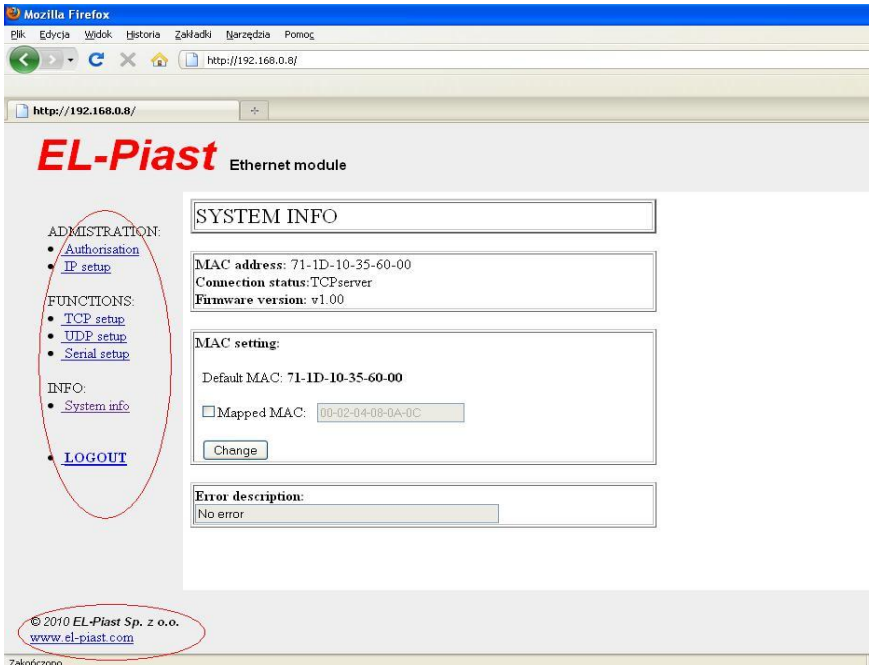
Table 1. Factory settings

6. Module configuration

The module must be connected to the network using the RJ45 socket in accordance with the Ethernet network building. The module can be configured remotely from a web browser. For this purpose in the browser address bar please enter the current IP address of the module (by default 192.168.0.8). After a moment you load the page where you can log in to the *Administration Panel* of the module.

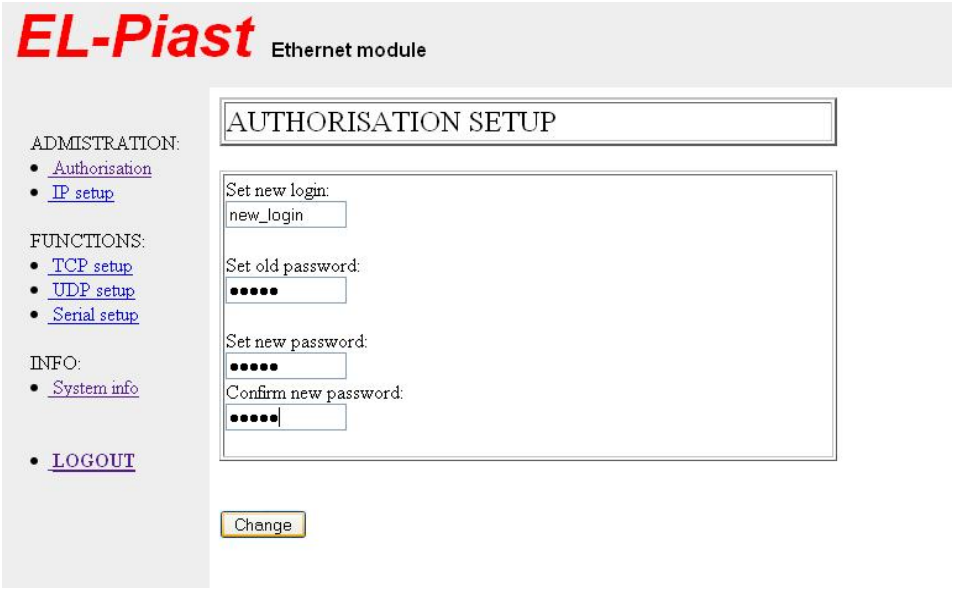


After you enter the correct username and password main website of the *Ethernet module* will be displayed. The site contains the menu on the left side, header, footer with a link to the website of EL-Piast company and the main window, located in the center of the screen, which displays the contents of the individual tabs.

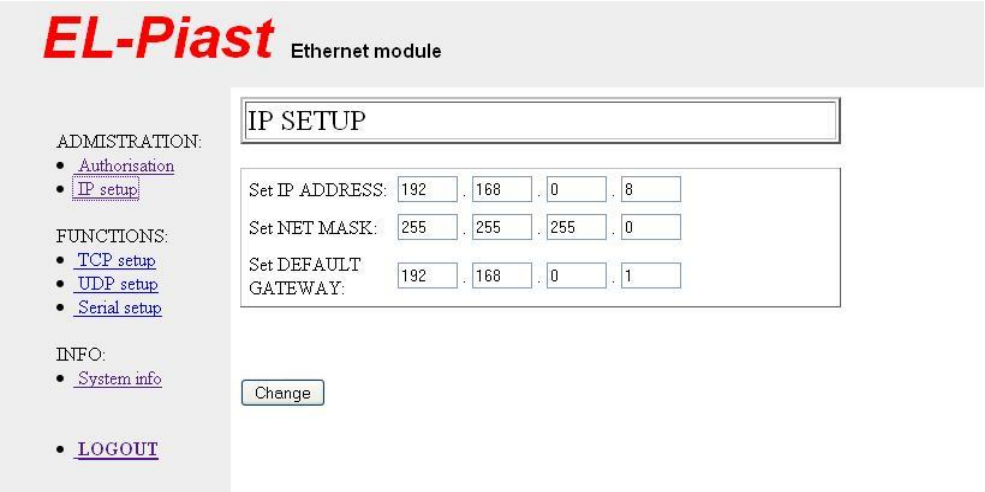


Configuration is possible using the following tabs:

- ***Authorisation*** – in this tab you can change your current login and password to the *Administrative Panel*. To do this, enter a new username and password and confirm the currently valid password. The settings will be accepted after you click *Change*.

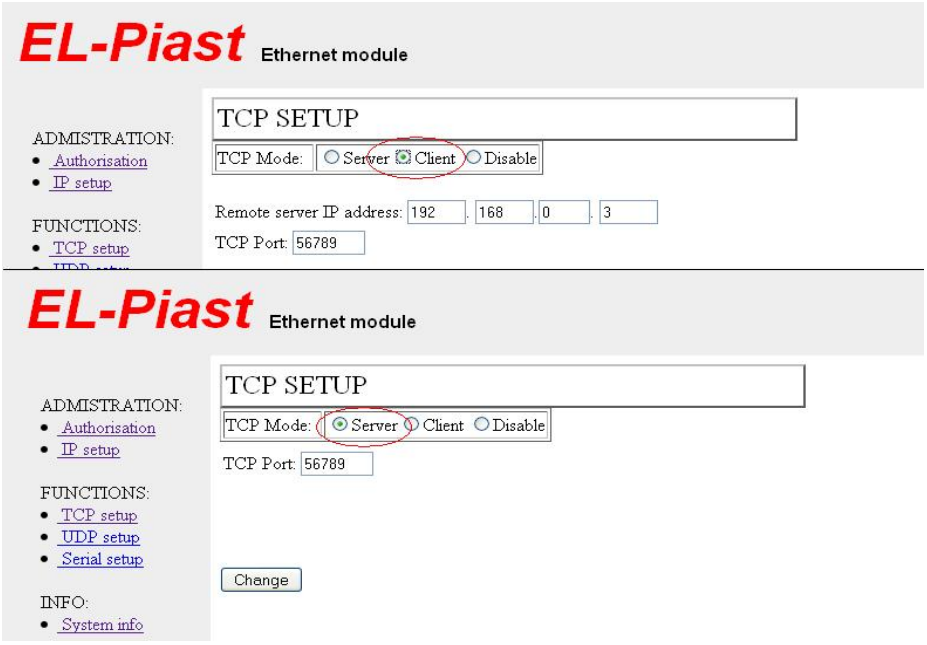


- ***IP setup*** – using this tab you can manage settings of the IPv4 *Ethernet Module's* protocol.



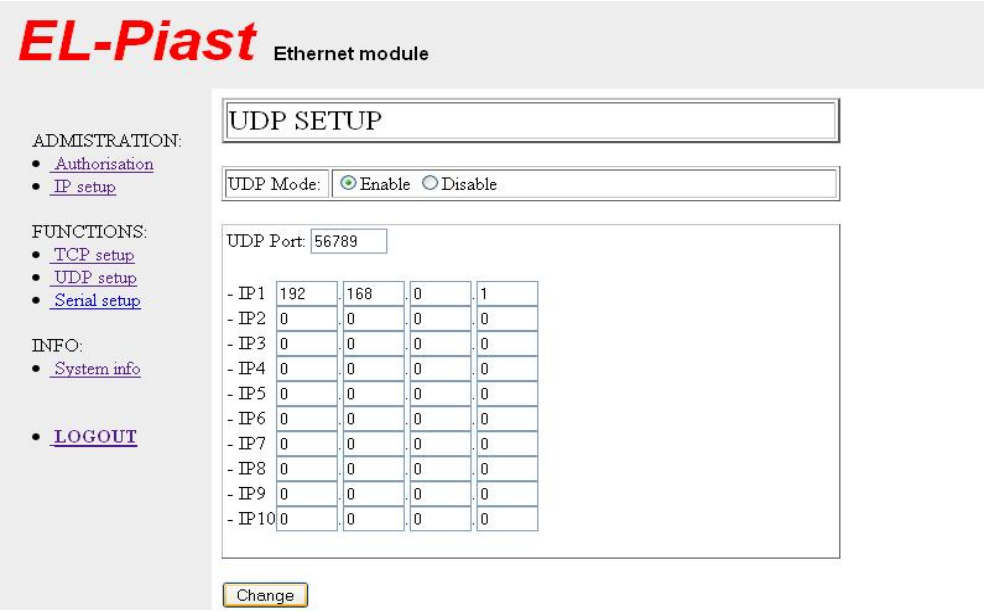
Attention! *After changing the IP address further configuration will be possible when you type in the address bar new IP address and log in again.*

- ***TCP setup –*** this tab provides the ability to manage the operation mode of the *Ethernet Module* and TCP parameters. Possible operation settings:
  - Server – *Ethernet Module* application is expecting on the selected port for incoming external calls.
  - Client – *Ethernet Module* application periodically tries to establish a connection with the remote host, whose address and port are set by the user.
  - Disable – TCP connection is inactive. This option is automatically set when the module works in UDP mode.



Working in client mode TCP module periodically attempts to connect to a remote host. Also, if the connection is broken, the module goes into active mode to connect.

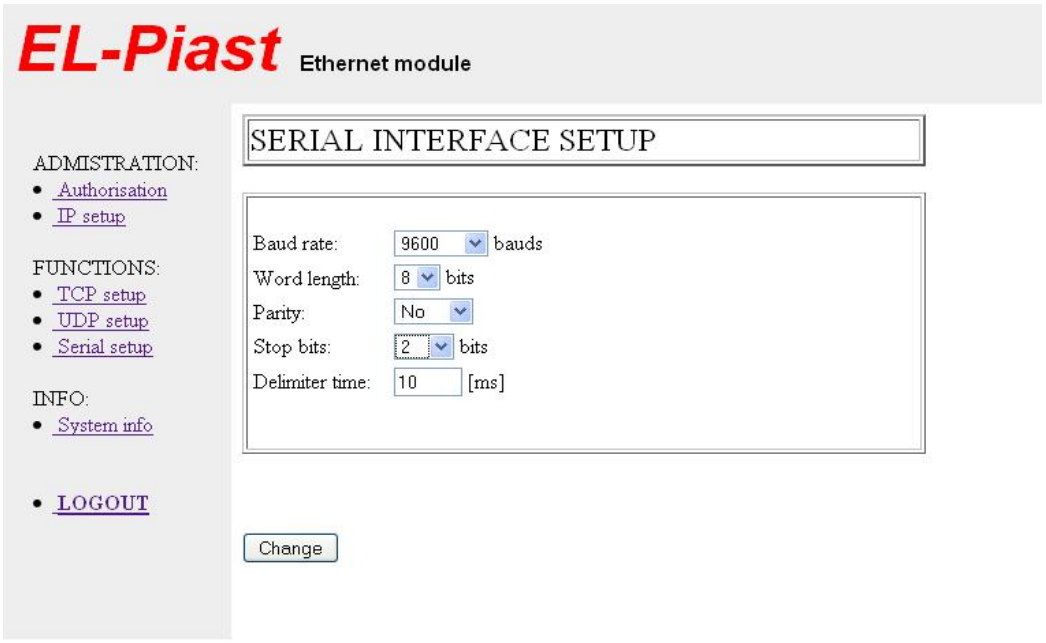
- ***UDP setup*** – it is used to manage operational parameters in UDP mode. You can set up to 10 IPv4 remote devices and one UDP port for all calls.



- ***Serial setup*** – in this tab you can manage the serial parameters. It is possible to set the following parameters:

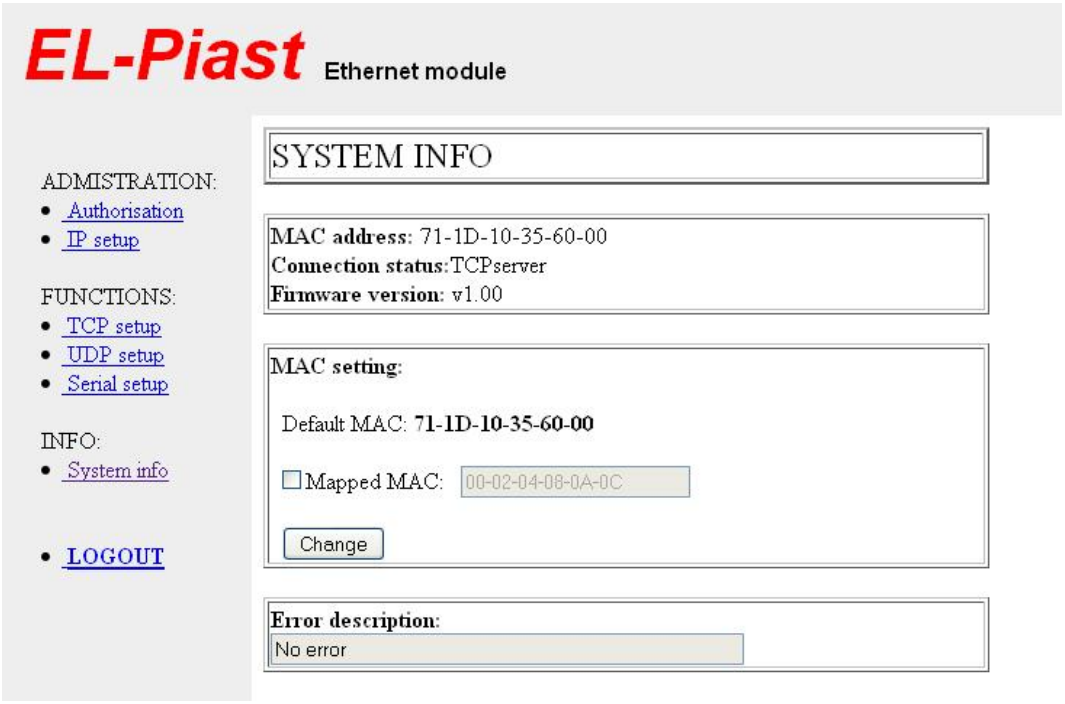
- **Baud rate:**
  - 115200 bits/s
  - 57600 bits/s
  - 38400 bits/s
  - 19200 bits/s
  - 9600 bits/s
  - 4800 bits/s
  - 2400 bits/s
- **Word length:**
  - 8 bits
  - 9 bits
- **Stop bits:**
  - 2 bits
  - 1,5 bits
  - 1 bit
  - 0,5 bit
- **Parity:**
  - None
  - Even
  - Odd

Timeout for frame (Delimiter time) - the time in milliseconds after which determines the end of transmitting the message. It is possible to set the value 0-255 ms.



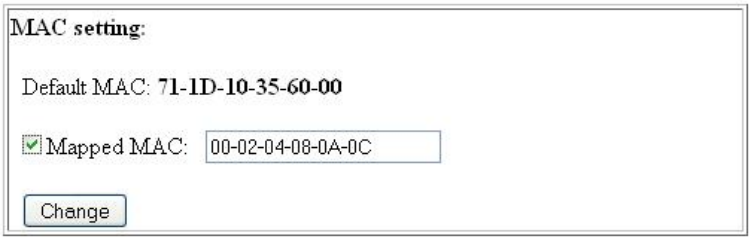
Attention! *Ethernet module is adapted to transmit frames having a maximum length of 512 bytes.*

- ***System info*** – this tab allows you to obtain the necessary information on the operating status, hardware address, firmware version, and a description of possible errors. The MAC address can be changed to any other chosen by the user. *Connection Status* field describes the current operating mode, and if the client TCP, connection status.



Attention! *When you change the MAC address further configuration will be possible after the next login.*

In case of damage of the memory chip which contains hard coded MAC address, the module will automatically change the address for the temporary **02-04-06-08-0A-0C** and in the field *Error description*, *MAC read error* will appear which is signaled by lighting up red LED on the front side of the module. In such a situation, it is recommended to change the temporary address by selecting *Mapped MAC* and entering another unique address.



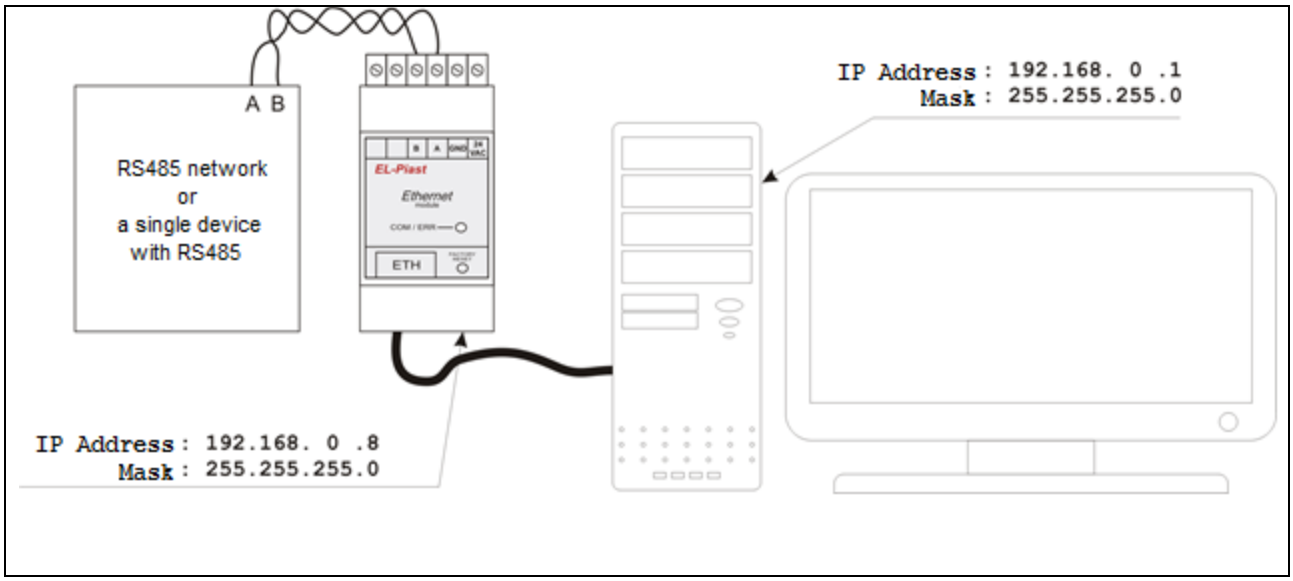
- ***LOGOUT*** – after selecting this link, logout of the *Administration Panel* will accure.

  Attention! *Leaving logged in Administration Panel for more than 10 min., without making it any actions will automatically log out.*

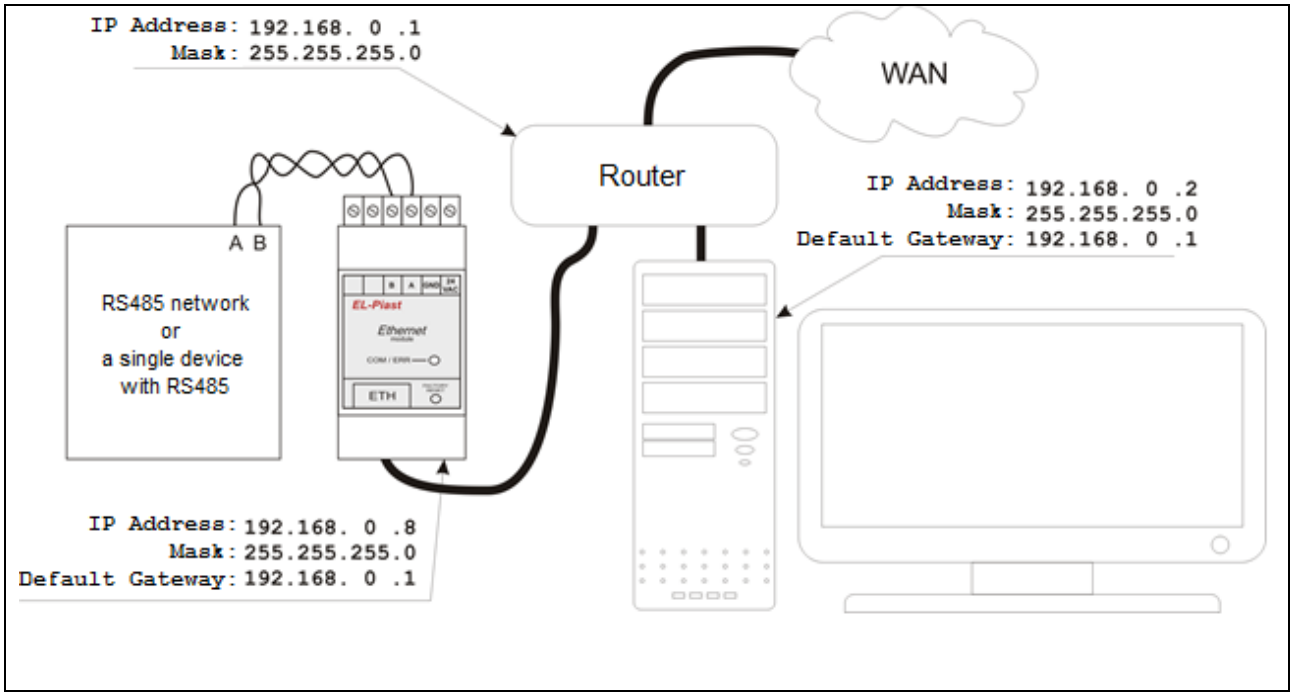
7. Connecting to the RS-485 and LAN/WAN

To connect a device equipped with RS-485 interface (eg. PLC controller of EL-Piast company), connect the two devices using wire twisted pair (UTP) taking into account the distribution of communication lines (A and B). The module can be plugged into an Ethernet network using twisted pair interlaced cable - if we are connecting directly to the network adapter of the PC computer, or non-interlaced cable - when we are connecting to a network via a *router* or *switch.*

The following is a sample configuration of Ethernet module and other network devices for direct connection and connection through the router.



Direct connection



Connection through the router

> **Attention!** *In both the direct connection and using connection through the router, computer's network adapter must be configured in the mode to manually set an IPv4 address. If you connect via a router, you set the default gateway address as it is the local address of the router.*

After a successful network connection, you must configure the data link layer protocols (TCP or UDP). When configuring *Ethernet module* as a TCP client at the other end of the link TCP server application working on the selected port must be provided.

8. Restoring factory settings

Restoring the factory settings after pressing the button FACTORY RESET inside the enclosure. Access to the button provides a removable cover housing. After pressing the button, module disconnects the current connection, and then starts again with the factory settings. List of the factory settings is contained in *Table 1* in Section *4*.