Inveo Sp. z o.o.

Media Converter

Instruction Manual

Overview

> **Warning**
>
> **This manual applies only to the firmware version v1.32 onwards. Inveo does not guarantee that the information contained in this document applies to previous firmware revisions.**



Purpose of the device

The Media Converter is designed to convert RS485 ↔ LAN.

Changelog

1.0 19th of May 2025

- Firmware revision v1.32

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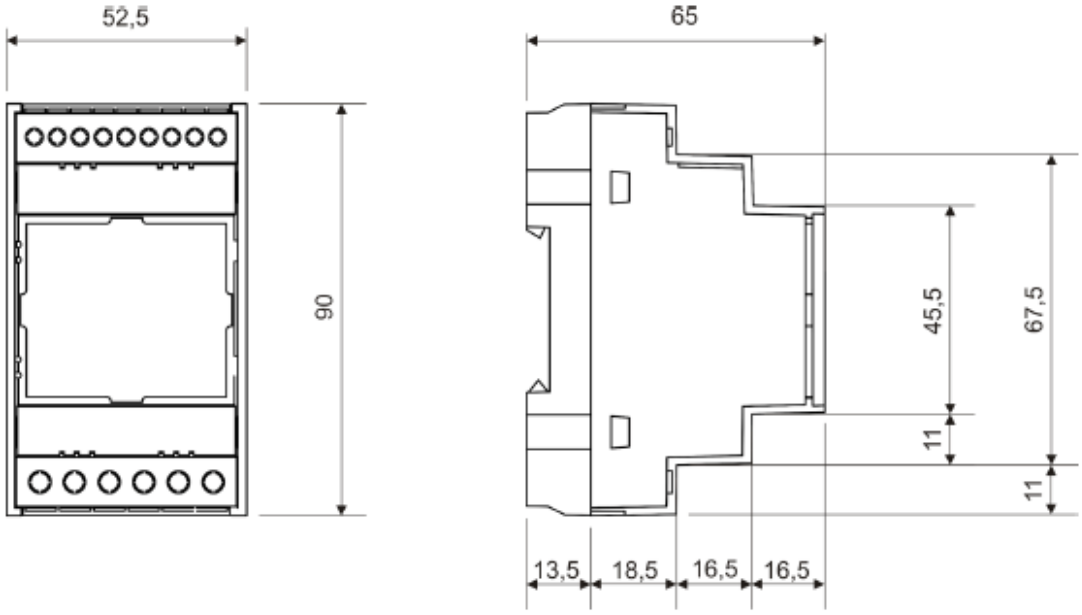
Device construction

Technical characteristics

Parameter	Description
Power supply	**10–24V DC** via a screw terminal
Power consumption	2W
Communication	RS–485 (screw terminal) Ethernet 10Mbps Half Duplex, RJ45 port
Enclosure ingress protection	IP30

Dimensions



Information

All dimensions are in millimeters.

LED indicators

The module is equipped with several LED's that indicate:

- **POWER**,
- **Link** – Connection with another module via TCP,

- **TX/RX** – RS485 lines activity,
- **LINK** – Active LAN connection,
- **ACT** – Active LAN connection.

Module connectors description

The module is equipped with screw terminals that are used to connect input/output circuits and power.

- **GND**,
- **Data + (B)** – RS485 communication line,
- **Data – (A)** – RS485 communication line,
- **Reset** button,
- **LAN**,
- **Power** – 10–24V DC power input.

Network configuration

After the initial power-up, it's needed to configure the device.

Changing the computer's subnet address for configuration

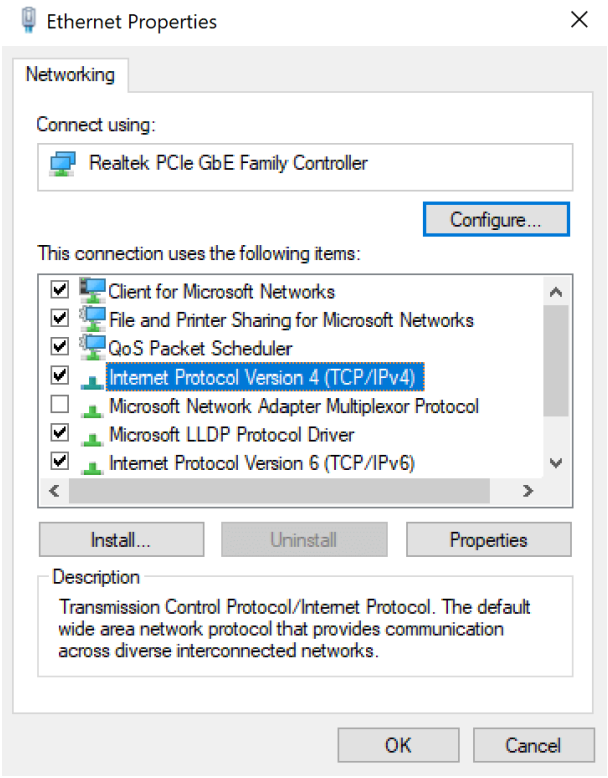
During configuration without **Discoverer** programme, it's needed to change the subnet address of the computer on the same network.

To access the computer's network configuration, do one of the following:

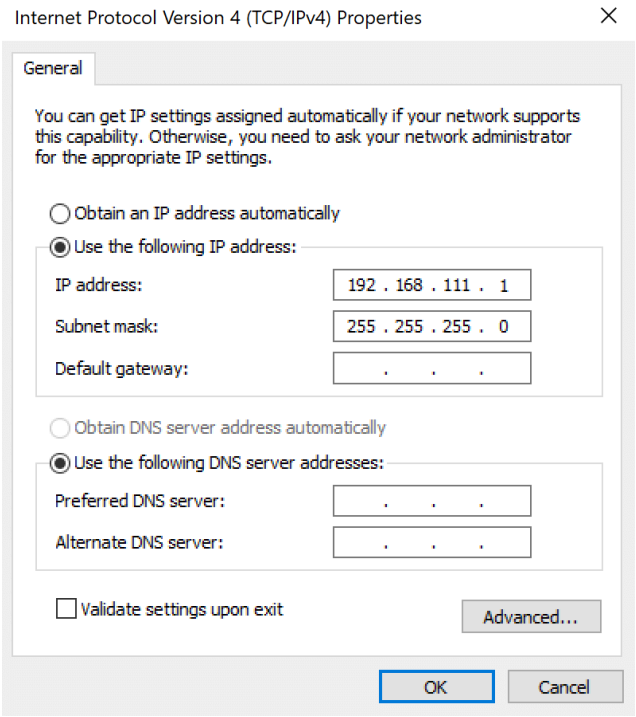
- Press **Win + R**, type in `ncpa.cpl`, and then press **Enter**.
- Alternatively, go to: **Start** → **Control Panel** → **Network and Internet** → **Network and sharing center** → **Change adapter settings**.

Then:

1. Select the network connection.
2. Right-click it and select **Properties**.
3. After selecting this option, network connection configuration screen will appear.



Select **Internet protocol version 4 (TCP/IPv4)** and type in the following parameters:



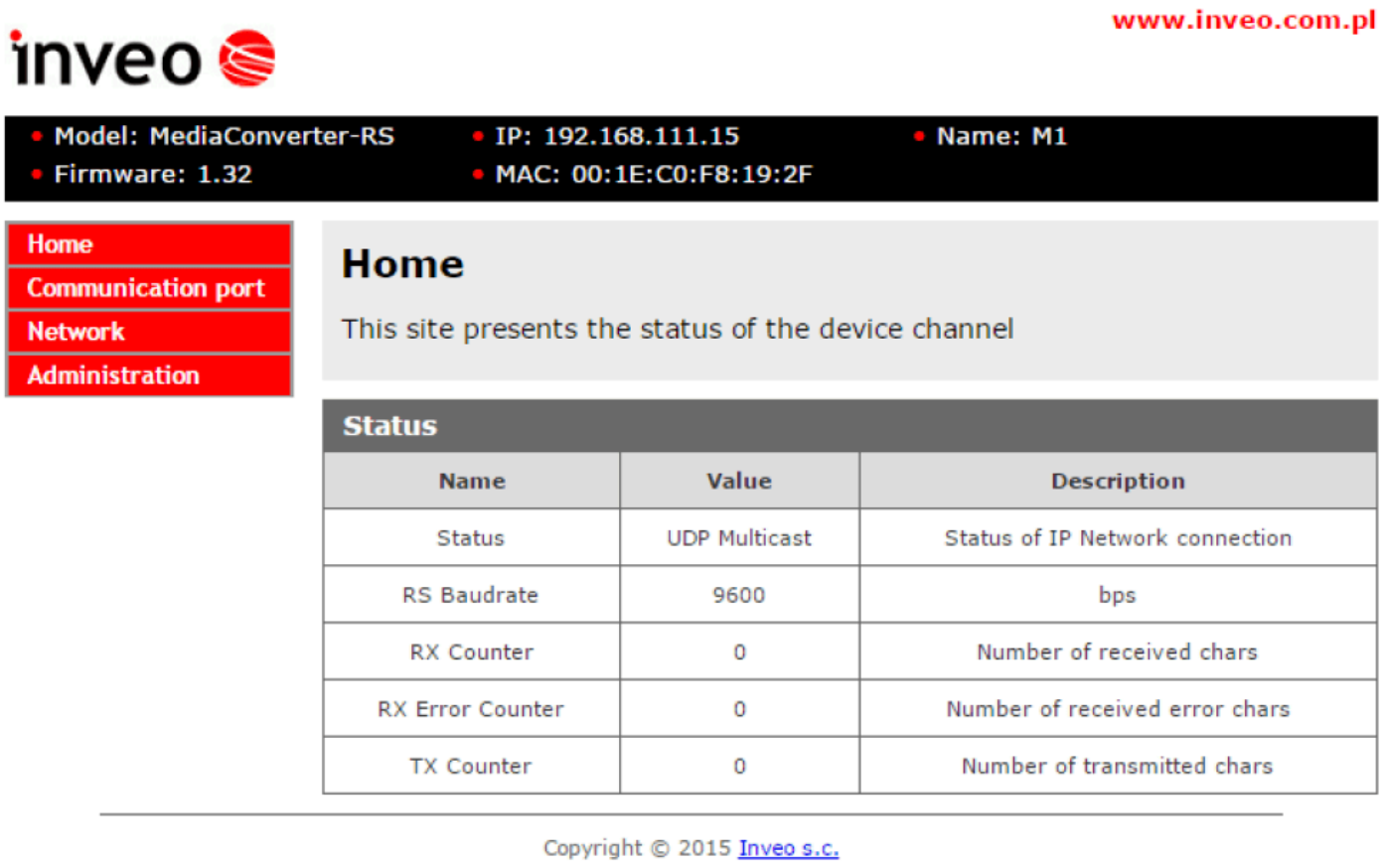
Note

After applying the configuration with OK, start a web browser and type in the following address: 192.168.111.15. (Default user and password: admin/admin00)

Device configuration

Home tab

After correct module log-in, the following basic parameters are visible on the home page:



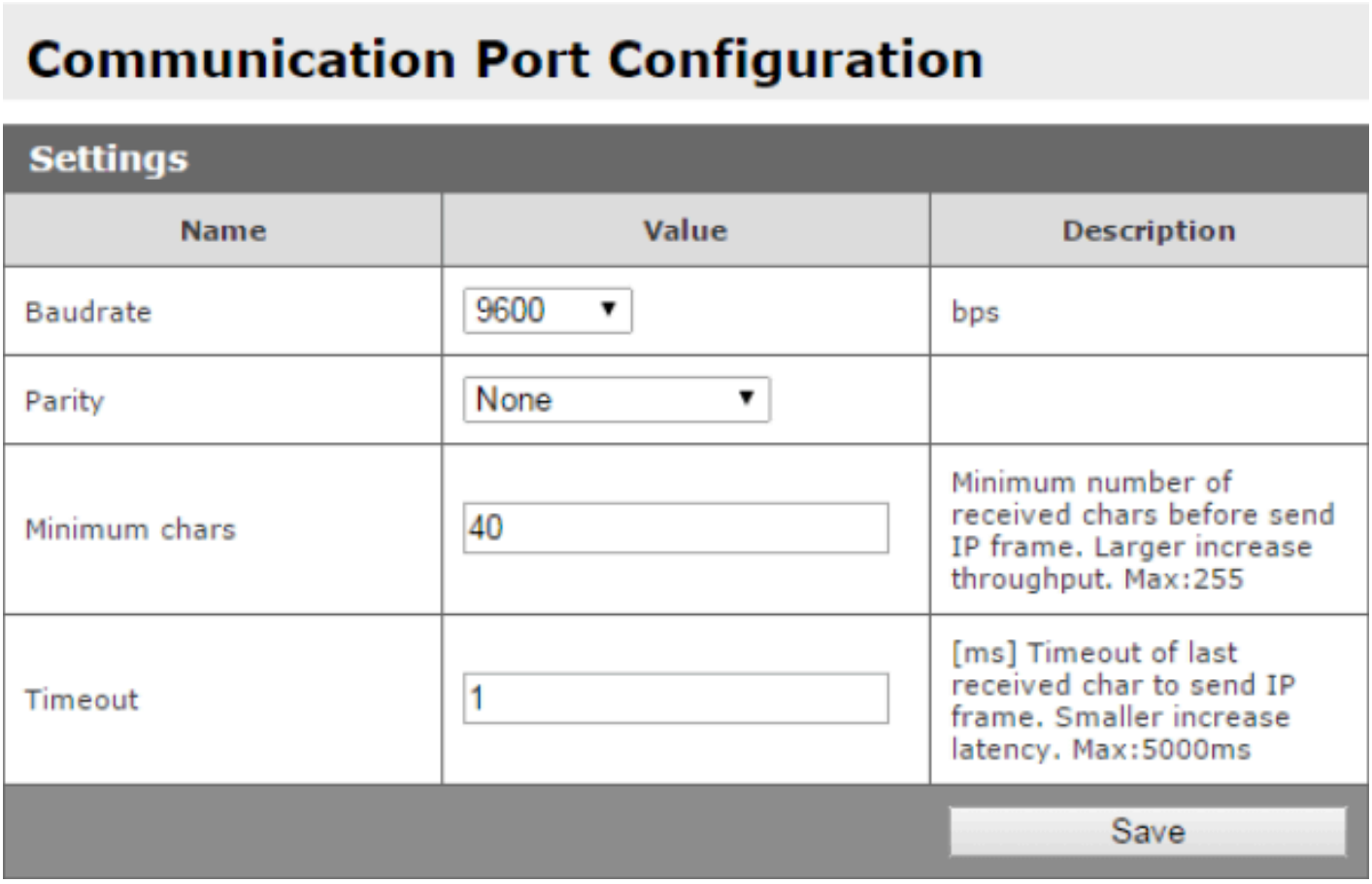
- **Model** – Device model,
- **Firmware** – Module's firmware version,
- **IP** – Module's IP address,
- **MAC** – Module's IP address,
- **Name** – Module name assigned by the user.

Status table

- **Status** – Current communication mode,
- **RS Baudrate** – RS485 baudrate,
- **RX Counter** – Received characters counter,
- **RX Error Counter** – Erroneously received characters counter,
- **TX Counter** – Sent characters counter.

Communication Port tab

In this tab, the RS485 port communication settings can be changed.



- **Baudrate** – Transmission speed (1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400bps),
- **Parity** – Parity bits setting (none, none and 2 stop, Even, Odd, Mark, Space),
- **Minimum chars** – Minimum number of received characters that cause an IP frame to be sent,
- **Timeout** – Time that will have to pass since the last character is received until an IP frame is sent.

Network tab

In the **Network** tab, LAN parameters and module operation settings are located.

Network Configuration

This page allows the configuration of the device's network settings.

IP Configuration

Name	Value	Description
Host Name	ETH2COM	0..15 characters
DHCP	☐	Enable DHCP Client
IP Address	192.168.111.15	A.B.C.D
IP Mask	255.255.255.0	A.B.C.D
Gateway	0.0.0.0	A.B.C.D
Communication Mode	UDP Multicast ▾	TCP Server works with TCP Client set on other module (1 to 1 connection). UDP Multicast works with any other modules which is also set to UDP Multicast mode (multipoint connection). UDP Server works with UDP Client set on other module (1 to 1 connection).
Communication IP Address	224.0.23.12	Address of other device to communicate (1 to 1 TCP connection) or Multicast (224.B.C.D)
Communication IP Port	9761	Port to communicate
Reset to default		To reset the device type in this field 'reset'

Save

- **Host Name** – NetBios name,
- **DHCP** – Enable DHCP. Selection of this field will force the use of an IP address assigned by the DHCP server,

- **IP Address**,
- **IP Mask**,
- **Gateway**,
- **Communication Mode**:
  - **TCP Server**,
  - **TCP Client**,
  - **UDP Multicast**,
  - **UDP Server**,
  - **UDP Client**.
- **Communication IP Address** – Module's address in 1:1 or multicast mode,
- **Communication IP Port** – Port in 1:1 or multicast mode,
- **Reset to default**.

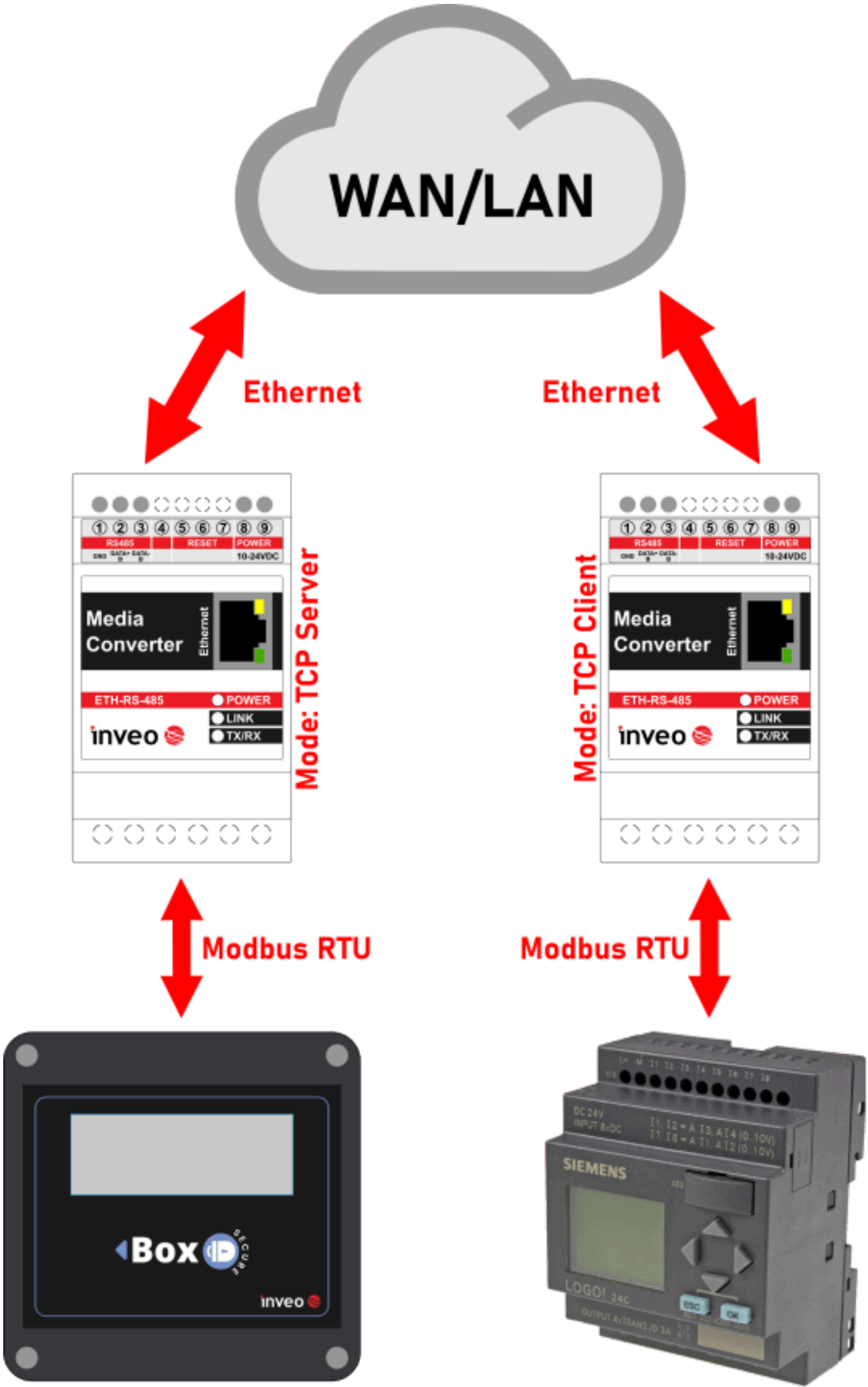
> **Tip**
>
> **Apply all changes using the Save button.**

LAN connection modes

Client TCP → Server TCP connection

Module operating in **Server TCP** mode, awaits connection from the module operating in **Client TCP** mode.

After a connection is established, RS485 port data from the first module is sent to the second one and vice versa.
Only a single client module can be connected to the server module.
This connection can be made both in local networks and the Internet.
It does not matter which module is connected to the MASTER/SLAVE device.


WAN/LAN
Ethernet
Ethernet
Mode: TCP Server
Mode: TCP Client
Media Converter
Ethernet
ETH-RS-485
POWER
LINK
TX/RX
inveo
RS485
RESET
POWER
10-24VDC
Modbus RTU
Modbus RTU
Box
inveo
SIEMENS
LOGO! 24C

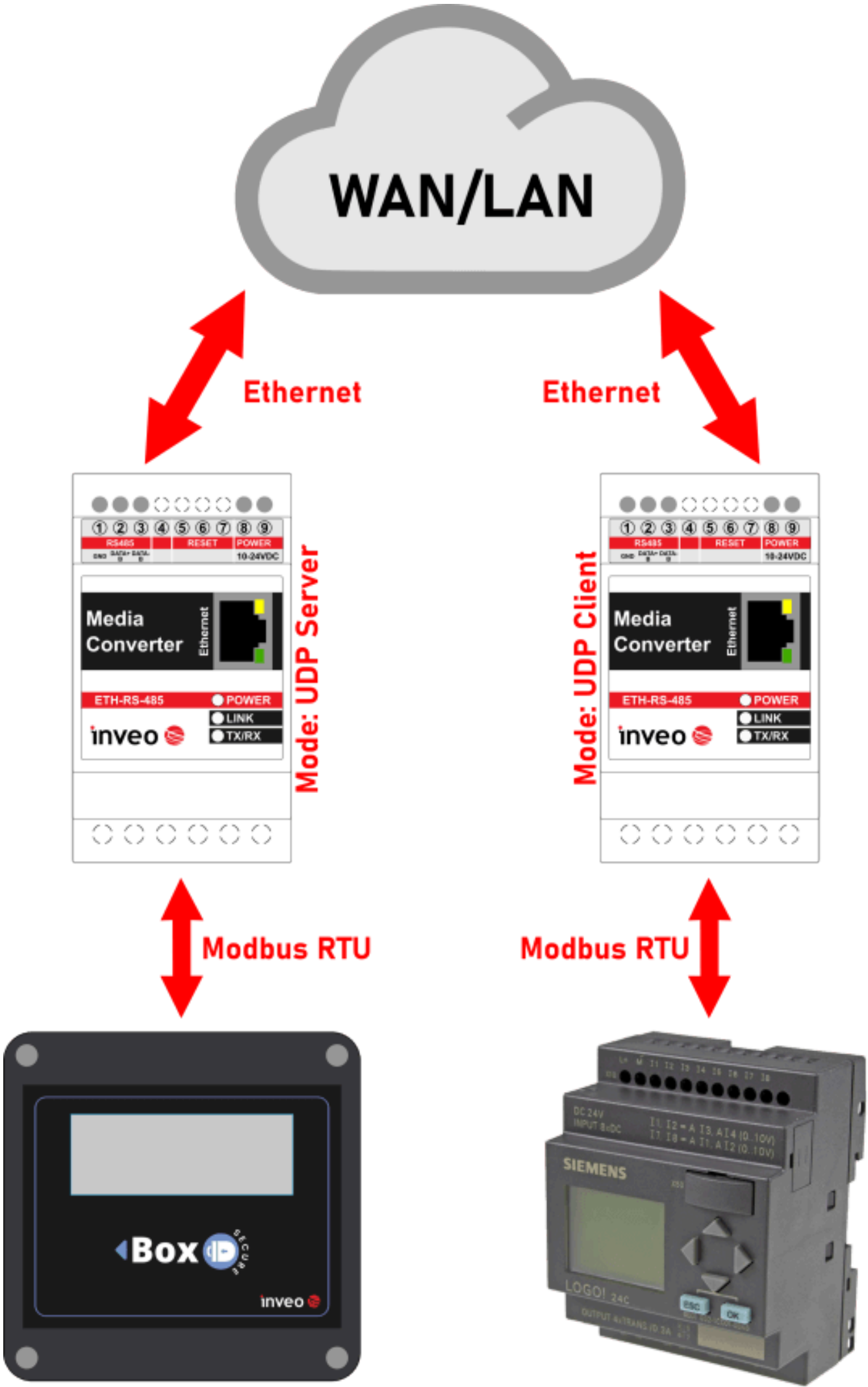
Example configuration

	Module A	**Module B**
IP Address	192.168.111.15	192.168.111.16
IP Mask	255.255.255.0	255.255.255.0
Communication Mode	TCP Server	TCP Client
Communication IP Address		192.168.111.16
Communication IP Port	10000	10000

Client UDP → Server UDP connection

All data received by the RS485 port in the client module is sent to the server module and vice versa. Higher data throughputs can be achieved by using the UDP/IP (connection-less) protocol.

Only a single client module can be connected to the server module.
This connection can be made both in local networks and the Internet.
It is important that the MASTER device is connected to the Media Converter operating in **UDP Client** mode (as shown below). This is because the client sets the network connection parameters by sending the first data packet to the server. If the server does not receive any packet, it will send its data to the broadcast address.


WAN/LAN
Ethernet
Ethernet
Mode: UDP Server
Mode: UDP Client
Media Converter
Ethernet
ETH-RS-485
POWER
LINK
TX/RX
inveo
RS485
RESET
POWER
10-24VDC
Modbus RTU
Modbus RTU
Box
inveo
SIEMENS
LOGO! 24C
ESC
OK

Example configuration

	Module A	**Module B**
IP Address	192.168.111.15	192.168.111.16
IP Mask	255.255.255.0	255.255.255.0
Communication Mode	UDP Server	UDP Client
Communication IP Address		192.168.111.16
Communication IP Port	10000	10000

UDP Multicast connection

All data received by the RS485 port is sent to the network's multicast address and is received by all modules operating in multicast mode.
This connection can only be made in a local network.

Connection in **UDP / Multicast**:

SLAVE

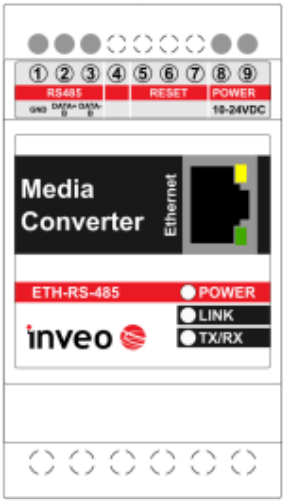
SLAVE

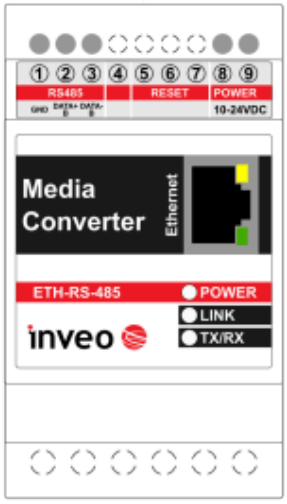




Modbus RTU

Modbus RTU





Ethernet

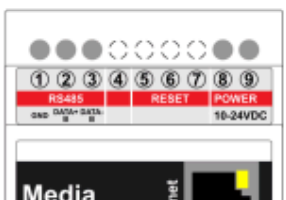
Ethernet



Ethernet



Modbus RTU



Example configuration

	Module A	**Module B**
IP Address	192.168.111.15	192.168.111.16
IP Mask	255.255.255.0	255.255.255.0
Communication Mode	UDP Multicast	UDP Multicast
Communication IP Address	224.0.23.55	224.0.23.55
Communication IP Port	10000	10000

Administration tab

The **Administration** menu allows the user to configure the services that should be active in the device and enables him to change the access passwords.

Administration

This page allows the configuration of the device's access settings.

Module name		
Name	**Value**	**Description**
Module name	M1	0..15 characters

User Password		
Name	**Value**	**Description**
New Password		0..15 characters
Re-type Password		0..15 characters

Admin Password		
Name	**Value**	**Description**
Current Password		0..15 characters
New Password		0..15 characters
Re-type password		0..15 characters

Services		
Name	**Value**	**Description**
Enable User Password	☑	
Enable Admin Password	☑	
Enable TFTP Bootloader	☑	Allow remote upgrade firmware by TFTP. For safety reasons, the option should be disabled.

Save

- **Module name** – Module name assigned by the user,

- **User Password** – Change the user's password (**Home** tab access only):
  - **New Password**,
  - **Re-type Password**.
- **Admin Password** – Change the administrator's password (access to all settings):
  - **Current Password**,
  - **New Password**,
  - **Re-type Password**.
- **Services** – Active services:
  - **Enable User Password**,
  - **Enable Admin Password**,
  - **Enable TFTP Bootloader**.

> **Warning**
>
> **The TFTP Bootloader should be disabled during normal operation. It should only be turned on right before a firmware update.**

> **Tip**
>
> **Apply all changes using the Save button.**

Changing the user password

To change the user password, enter the current password into the **User Password** → **Current Password** field. Enter the **New Password** and apply the change using **Save**. The user only has access to the **Home** tab.

Changing the administrator (admin) password

To change the administrator password, enter the **Current Password** into the **Admin Password** table. Enter the **New Password** and **Re-type** it. Apply the new password using **Save**.

Factory settings

To restore the factory settings, press and hold the **Reset** button for 8 seconds.

Once the above steps have been completed, the device will be set to the following parameters:

- **IP address:** 192.168.111.15
- **IP mask:** 255.255.255.0
- **User:** admin
- **Password:** admin00

Warranty and manufacturer's liability

> **Warning**
>
> **The manufacturer provides a two-year warranty for the device and post-warranty service for a period of 10 years from the date of introduction of the device to the market. The warranty covers all material and production defects.**

The manufacturer undertakes to respect the warranty agreement, if the following conditions are met:

- All repairs, changes, expansions and device calibrations are carried out by the manufacturer or an authorized service center,
- The power supply system meets the applicable standards,
- The device is operated in accordance with the suggestions presented in this manual,
- The device is operated in accordance with its intended purpose.

The manufacturer assumes no responsibility for consequences resulting from improper installation, improper use of the device, failure to comply with the instruction manual, and repairs made by unauthorized personnel.

> **Warning**
>
> **The device contains no user serviceable parts inside.**

Storage, operation and transport conditions

The device should be stored in enclosed rooms, where the atmosphere is free from vapours and corrosive substances:

- Environment temperature from -30°C to +60°C (-22°F - 140°F),
- Humidity from 25% to 90% (condensation unacceptable),
- Atmospheric pressure from 700 to 1060 hPa.

The device is intended to operate in the following conditions:

- Environment temperature from -10°C do +55°C (14°F - 131°F),
- Humidity from 30% to 75%,
- Atmospheric pressure from 700 to 1060 hPa.

Recommended transport conditions:

- Environment temperature from -40°C do +85°C (-40°F - 185°F),
- Humidity from 5% to 95%,
- Atmospheric pressure from 700 to 1060 hPa.

Installation and device operation:

- The module should be operated in accordance with recommendations provided later in this manual.

Disposal and decommissioning

In an event the device needs to be decommissioned (eg. after its intended life period is surpassed), it is recommended to contact the manufacturer or his representative, who are responsible to respond appropriately, i.e., to collect the device from the user. The user can alternatively contact companies specializing in electronic device or computer equipment disposal and/or decommissioning. Under no condition should the device be placed with other waste.