

M036

Modbus RTU RS485 / Modbus TCP router



Summary

M036 is a Modbus RTU at RS485 to Modbus TCP at Ethernet router with PoE powering option.

Applications

- **remote Modbus RTU / RS485 devices to SCADA Modbus IP connection via Ethernet network**

Functions

The M036 module is able to connect a Modbus RTU RS485 device to a PC or PLC with Modbus TCP master via an Ethernet network. Maximum RS485 communication speed is 115 200 bps.

The module parameters and functions are configured over a web interface. Default IP address is 192.168.1.99/24. Power presence is indicated by a green LED close to the DIP switch. The Ethernet connector provides two LEDs: Link (yellow) and Network activity (green). The network switches automatically between 10 and 100 Mbit/s.

The Modbus RTU slave at RS485 device connects through 2-wire connector. It is possible to terminate the RS485 bus by setting the two jumpers below to ON. The RS485 bus is galvanically isolated (insulation voltage 1000 V).

Technical data

Supply voltage	10 V ÷ 35 V DC, 14 V ÷ 24 V AC, any polarity, or PoE
Consumption	1500 mVA
Working temperature of the device	-20 ÷ 70°C
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Communication	high speed RS485 optically separated, 300 ... 115 200 bit/s
Ethernet	automatic 10 or 100 Mbit/s
IP addressing	fixed or DHCP assigned IP address
Protocols	TCP, DHCP, Modbus, HTTP

Modbus port	TCP port 502
Processor	Stellaris LM3S6938
TCP buffer	1024 bytes
RS485 buffer	1024 bytes
TCP close timeout	120 s
Maximum open TCP connections	5
RS485 timeout	5
RS485 timeout	1 s
Dimensions	see below

Terminals



Terminals

1, 2	power supply, any polarity – G, G0
ETH - PoE	Ethernet network, RJ45 8 pin connector
K1+, K1-	RS485, Modbus RTU
BUS END	SW1, SW2 - RS485 termination
INIT	SW4 – default IP configuration
TX	RS485 transmit LED, red
RX	RS485 receive LED, green
PWR	power supply OK LED, green
Gr	green solid, network interface 10/100 Mbit

Commissioning Connect the M036 to the Ethernet network, and configure your PC to have IP address in the 192.168.1.x/24 network, e.g.

IP address	192.168.1.44
Subnet mask	255.255.255.0
Gateway	192.168.1.1

Enter the M036 default IP address, which is 192.168.1.99, in the browser address line.

If the device is not available in the network, proceed as follows:

- switch the power off
- set the INIT switch (SW4) to ON
- switch the power on

The M036 is set to its default settings now.

The Modbus router listens at the default Modbus TCP port 502, and the packets are translated to Modbus RTU and sent to the RS485 port. The answers from the RS485 slaves are sent back to the Ethernet master. The RS485 communication is indicated by the red (transmit) and green (receive) LEDs.

In case of problems:

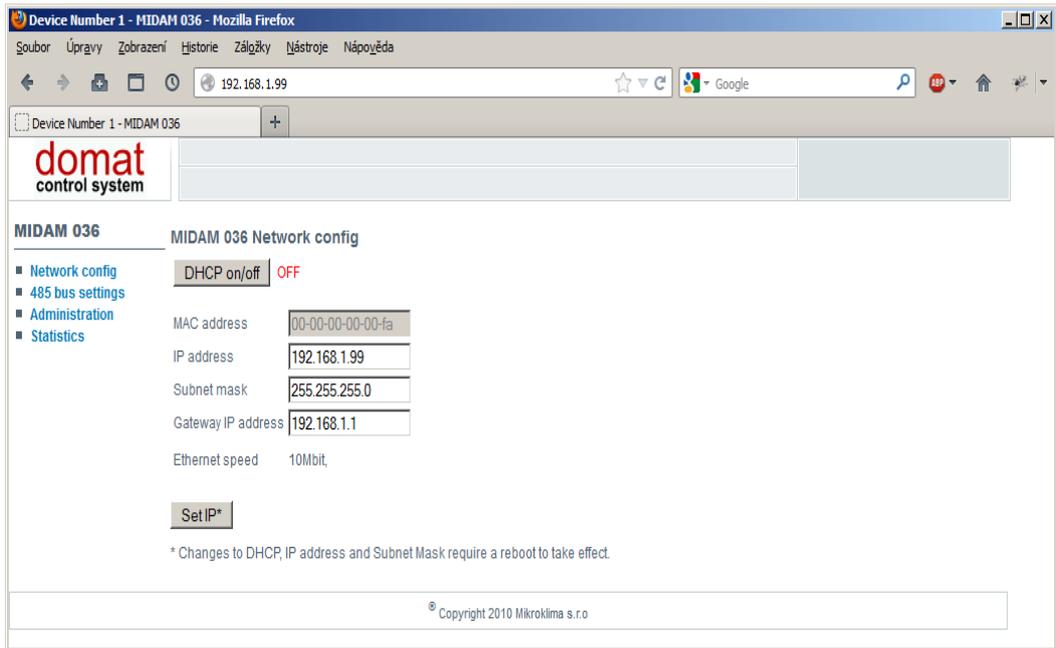
1. Try to ping the M036's IP address
If the device does not respond, bring it to the INIT status
2. Open the web page and check the serial settings
3. Try to communicate over a Modbus TCP client and check if the red LED is flashing (transmitting Modbus RTU requests to the RS485)
4. Check the RS485 line using a Modbus RS485 client to be sure that the serial communication is OK

The new IP parameters are to be set in the main page (Network config).
Confirm the new settings by clicking the **Set IP** button.

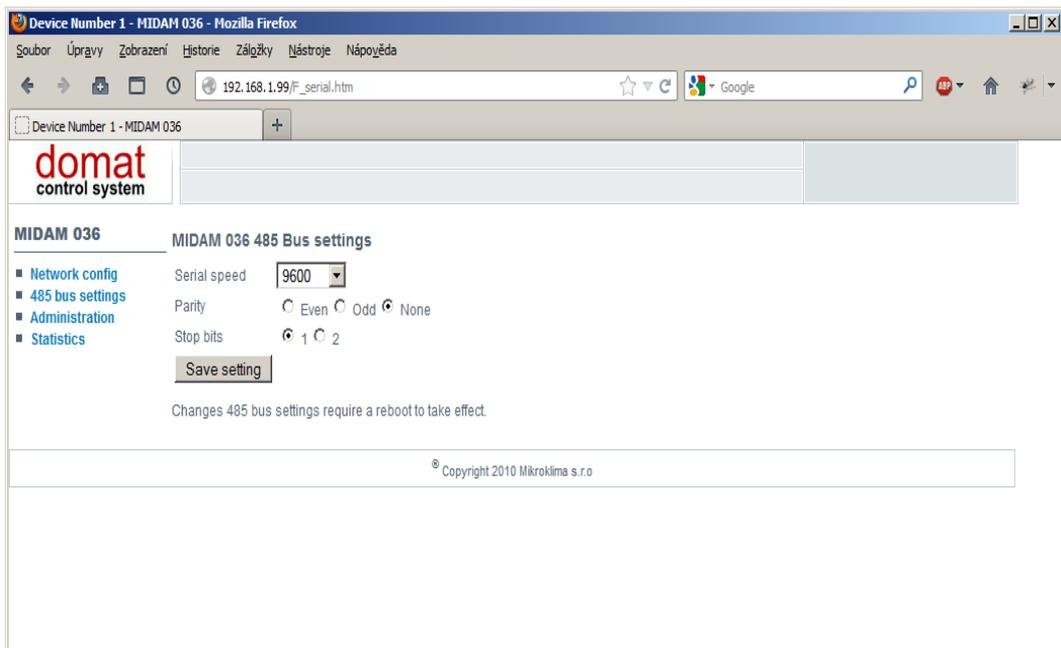
Power supply

Alternative power supply (G/G0 terminals vs. PoE):

1. If the G/G0 power is applied first, the M036 is powered from this G/G0 external source. At power dropout the power is switched over to PoE with a short dropout (device reset).
2. If the PoE power is applied first, the M036 is powered from the PoE. The switchover to G/G0 follows only if the G/G0 voltage is 27 V DC (19 V AC) and above.
3. If both G/G0 and PoE are applied at the same time, the M036 is powered from G/G0 terminals. The device will not be damaged.



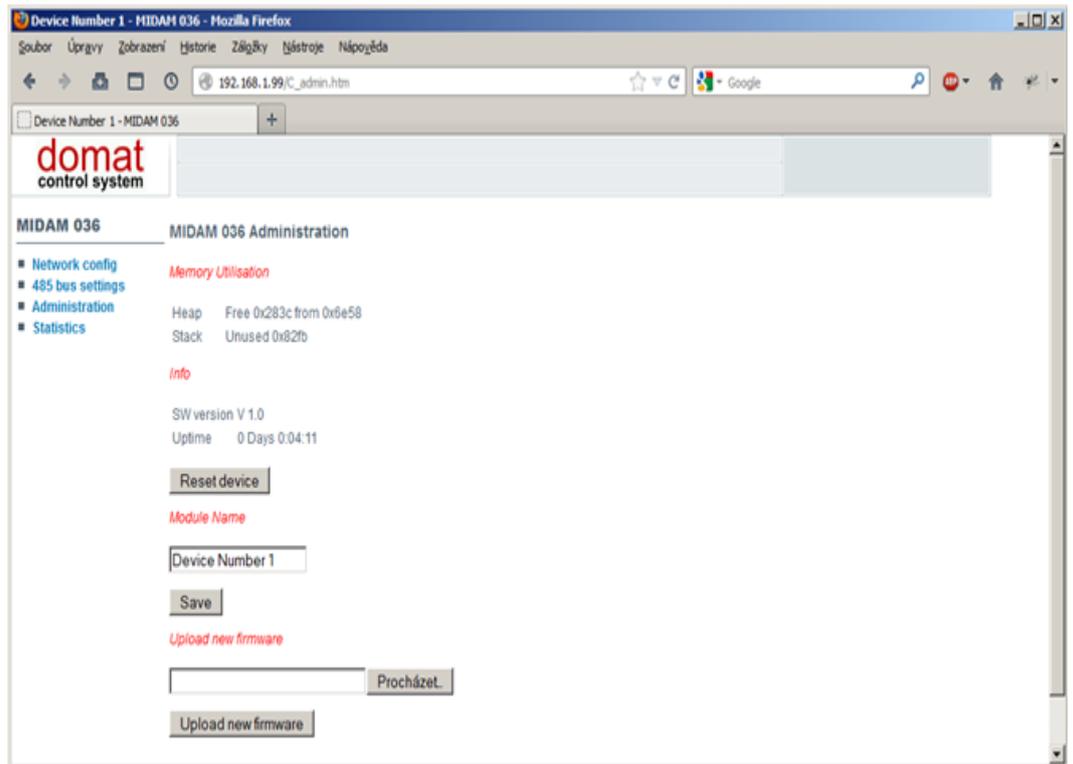
485 bus settings: this is where the serial port parameters are configured.



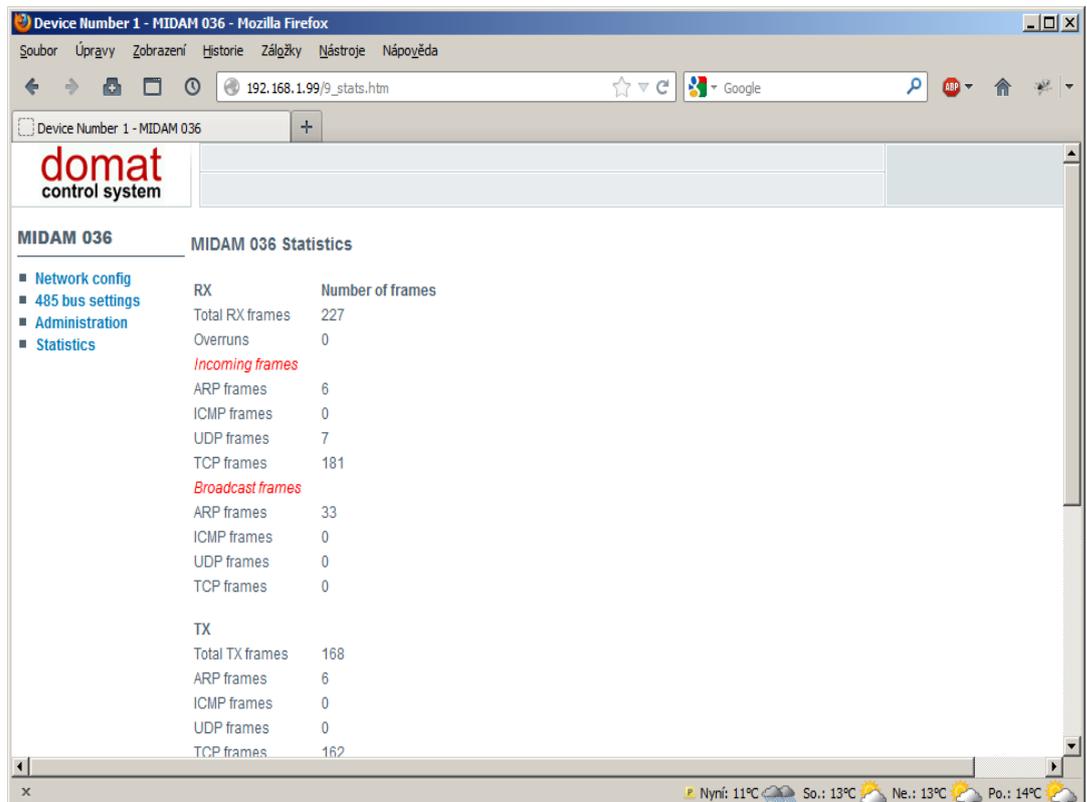
Administration: Internal settings and configuration.

Module name: this is where a location or system name can be set

Upload new firmware: in case of firmware update, use this dialog.



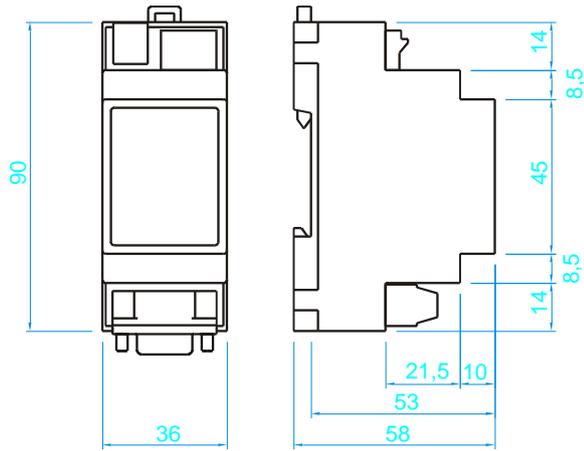
Statistics: Use for system diagnostics and bug reporting.



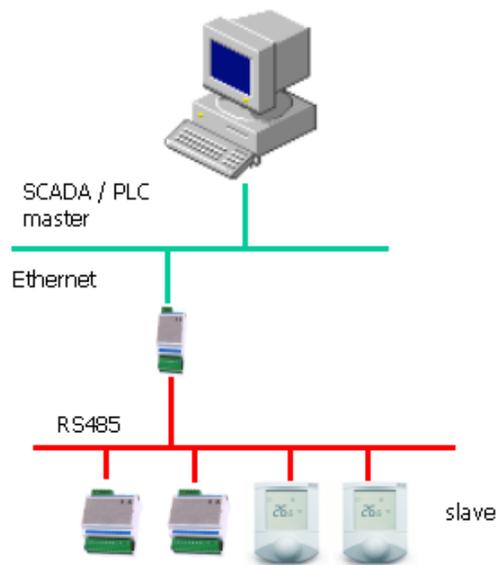
RTU Master

The Modbus RTU devices at RS485 are connected over a 2-pole removable connector. The RS485 bus may be terminated by a pair of BUS END switches set to ON.

Dimensions



Application example



**Changes in
versions**

12/2016 – Linguistic corrections.