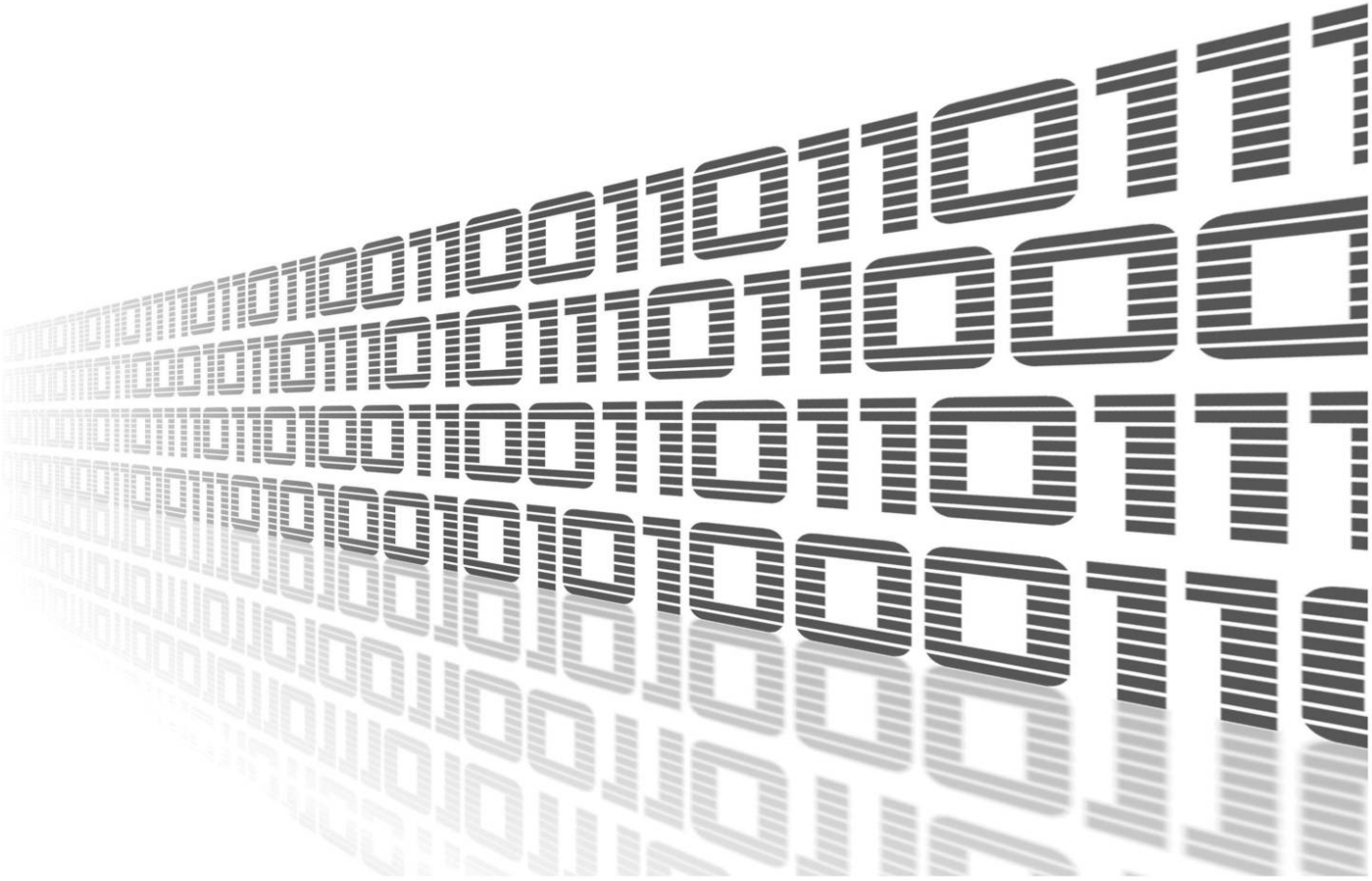
ADVANTECH

RouterApp

Protocol MODBUS-RTUMAP



Advantech Czech s.r.o., Sokolska 71, 562 04 Usti nad Orlici, Czech Republic
Document No. APP-0057-EN, revision from 26th October, 2023.

Used symbols

Danger – Information regarding user safety or potential damage to the router.

Attention – Problems that can arise in specific situations.

Information – Useful tips or information of special interest.

Example – Example of function, command or script.

Contents

List of Figures

List of Tables

1. Changelog

1.1 Protocol MODBUS-RTUMAP Changelog

v1.0.0 (2012-01-13)

- First release

v1.0.1 (2012-01-20)

- Allowed reading of register zero

v1.0.2 (2013-12-11)

- Added support of FW 4.0.0+

v1.0.3 (2015-08-21)

- Fixed bug in sorting of data in internal buffer

v1.0.4 (2018-09-27)

- Added expected ranges of values to JavaSript error messages

v1.0.5 (2019-02-13)

- Fixed reading of coils

2. Description of router app

Router App *Protocol MODBUS-RTUMAP* is not contained in the standard router firmware. Uploading of this router app is described in the Configuration manual (see [1, 2]).

The router app is not v4 platform compatible.

Using this module, it is possible to periodically read data from the buffer which stores values obtained from connected measuring devices (meters). To each measuring device can be assigned a certain number of registers (or coils). These ranges follow each other, so *RTUMAP* module reads data from a total number of assigned registers (or coils) starting from the specified start address. Well-arranged model diagram can be found in the following figure:

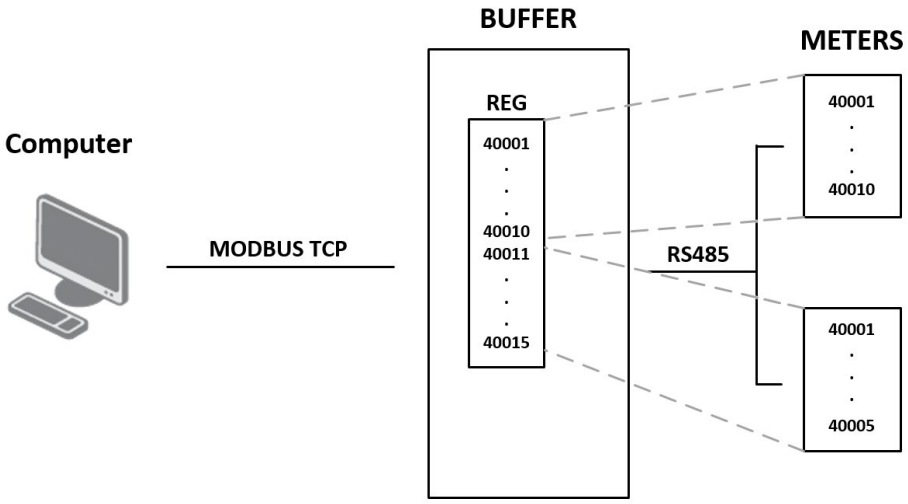


Figure 1: Model diagram

For configuration *RTUMAP* router app is available web interface, which is invoked by pressing the module name on the *Router apps* page of the router web interface. The left part of the web interface (ie. menu) contains only the *Return* item, which switches this web interface to the interface of the router.

3. Configuration of router app

The actual configuration of this router app is performed via the form on the right side. The first item in this form – *Enable RTUMAP on expansion port* – is used to activate these router app. Meaning of other items is described in the table below:

Položka	Význam
Expansion port	Corresponding expansion port (*PORT1* or *PORT2*)
Baudrate	Modulation rate (number of distinct symbol changes – signaling events – made to the transmission medium per second)
Data Bits	Number of data bits (*7* or *8*)
Parity	Parity (*none*, *even* or *odd*)
Stop Bits	Number of stop bits (*1* or *2*)
Split Timeout	The delay between readings (in miliseconds)
Read Period	Period of reading data from the buffer (in seconds)
TCP Port	TCP port number
Start Address	Start address of register

Table 1: Description of items in configuration form

At the bottom of the configuration form is also available a list of connected meters with information about their settings.

All changes will take effect after pressing the *Apply* button.

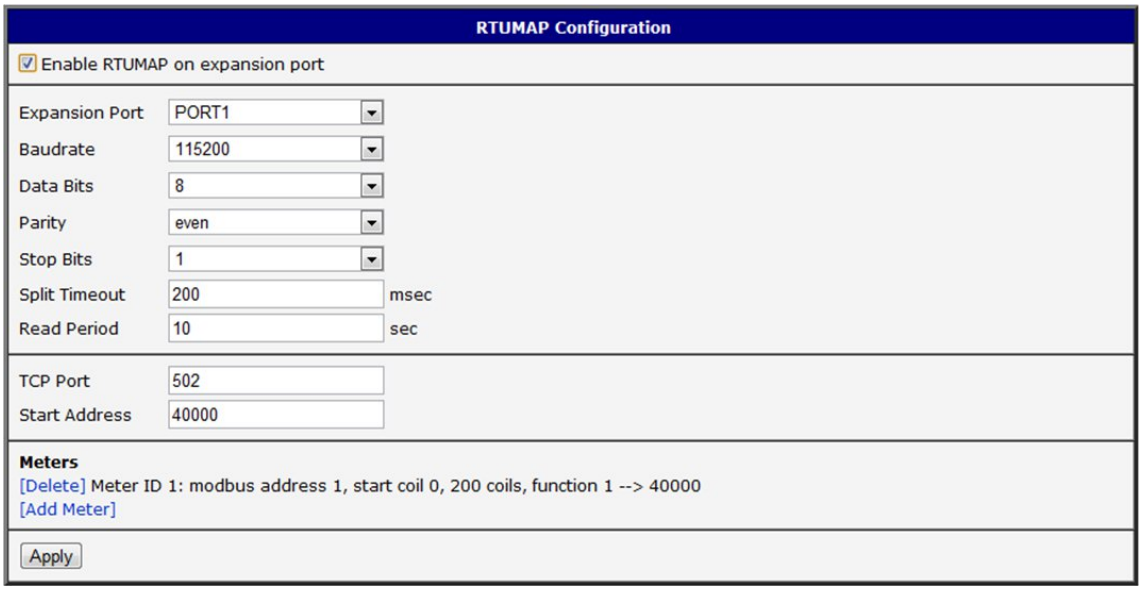


Figure 2: Configuration form

3.1 Adding and removing a measuring device

Individual meters (measuring devices) can be removed from the list by clicking *[Delete]* item which is situated in front of the meter description. To add meter click on the *[Add Meter]* item. Before adding a meter, it is neccessary to enter *Meter Address*, *Start Address*, number of registers or coils (*Number Of Values (Register or Coils)*) and select *Read Function* (see the figure below). This way it is possible to add up to 10 devices.

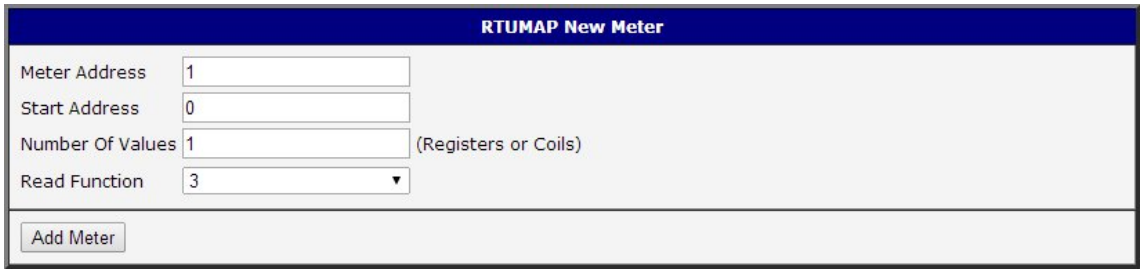


Figure 3: Adding a measuring device

3.2 Read and write functions

The following figure describes functions that are used for reading and writing between PC, *RTUMAP* router app and meter. Functions 0x01 (read) and 0x0F (write) are intended only for coils. To be able to write some values to coils on MODBUS RTU device (by function 0x0F), set the read function in a meter declaration to function number 1.

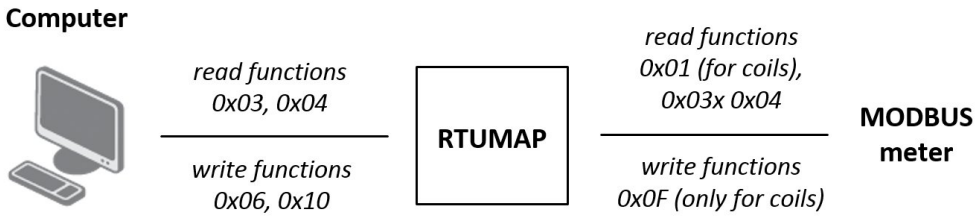


Figure 4: Read and write functions supported by the RTUMAP router app

4. Related Documents

You can obtain product-related documents on *Engineering Portal* at *icr.advantech.cz* address.

To get your router's *Quick Start Guide*, *User Manual*, *Configuration Manual*, or *Firmware* go to the *Router Models* page, find the required model, and switch to the *Manuals* or *Firmware* tab, respectively.

The *Router Apps* installation packages and manuals are available on the *Router Apps* page.

For the *Development Documents*, go to the *DevZone* page.