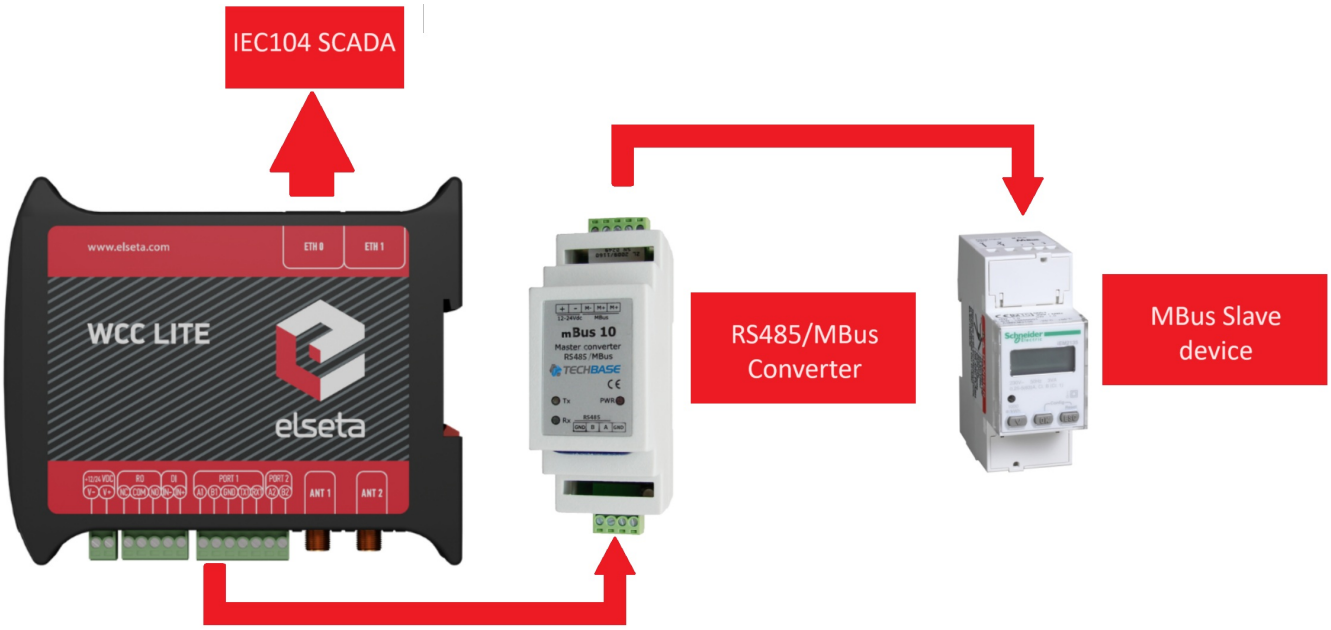
M-Bus Serial Communication Setup Guide

Description

This article describes how to establish communication between WCC Lite and a meter using the Meter-Bus protocol.

Physical Link Setup: WCC Lite to Meter Connection

Set up your computer and connect Ethernet cable to WCC Lite ETH0 port. Login with default credentials and setup basic required settings (name, network, users, etc.). You can find configuration tutorials in How to articles.



The WCC Lite lacks a built-in hardware interface for M-Bus connectivity, requiring the use of an RS485 or RS232 to M-Bus Master Converter for establishing a connection.

In the illustrated example, a Schneider IEM2135 meter was used alongside the M-Bus 10 RS485/M-Bus Master Converter for data exchange.

Example

When the meter configuration parameters match the ones in the Excel sheet, communication can be established. In the example, we also set up IEC104_SCADA communication along with M-Bus for smooth integration with the IEM2135 meter.

Configuration for the example showed in the illustration ->Download

The guidelines for creating your own configuration will be presented in the following segment.

Configuration

M-Bus parameters for *Device* tab

Parameter	Type	Description	Required	Default value (when not specified)	Range	
					Min	Max
name	string	User-friendly device name	Yes			
description	string	Description of a device	No			

device_alias	string	Alphanumeric string to identify a device	Yes			
enable	boolean	Enabling/disabling a device	No	1	0	1
protocol	string	Protocol to be used.	Yes		mbus serial	
scan_rate_ms	integer	All reads and writes will be executed within the timeframe in milliseconds.	No	10000		
poll_delay_ms	integer	Minimum time delay in milliseconds to wait before sending any data on port.	No	200		
timeout_ms	integer	Timeout of waiting for an incoming response in milliseconds	Yes		0	60000
address	integer	Device address	Yes			
device	string	Communication port	Yes		PORT1	PORT2
baudrate	integer	Communication speed, baud/s	Yes	9600	300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200	
databits	integer	Data bit count for communication	Yes	8	6	9
stopbits	integer	Stop bit count for communication	Yes	1	1	2
parity	string	Communication parity option	Yes	none	none, even, odd	

M-Bus parameters for the *Signals* tab

Parameter	**Type**	**Description**	**Required**	**Default value** (when not specified)	**Range**	
					Min	Max
signal_name	string	User-friendly signal name	Yes			
device_alias	string	Device alias from a Devices tab	Yes			
signal_alias	string	Unique alphanumeric name of the signal to be used	Yes			
enable	boolean	Enabling/disabling of an individual signal	No	1	0	1
log	integer	Enable logging in the event log	No	0		
number_type	string	Type of a number (FLOAT, DOUBLE, DIGITAL, etc.)	Yes			
job_todo	string	Tag job as single or multiple comma-separated OBIS codes	Yes			
tag_job_todo	string	Tag sub job	Yes			

Optional parameters for signals are available on this page ->Optional parameters for signals.

If you wish to include mathematical expressions in your signals, the guidelines can be found on this page -> Mathematical functions.

Debugging

If M-Bus does not work properly (e.g. no communication between devices, data is corrupted, etc.), a user can launch a debug session from command-line interface and find out why the link is not functioning properly.

> ⚠ On the web interface's protocol connections page, M-bus devices will not be displayed. If the connection is established correctly, it can be observed on the imported signals page.

To launch a debugging session, a user should stop the *pooler* process and run the *pooler* command with respective flags.

- Step 1: Open the command terminal on your computer.
- Step 2: Connect via SSH, example of the command **ssh root@192.168.1.1** and then enter your designated password.
- Step 3: Service must be stopped by entering the following command into the wcclite: **/etc/init.d/pooler stop**
- Step 4: After service is stopped it must be started with the preferred configuration file (JSON files found in /etc) and a debug level 7: **pooler -c /etc/pooler/pooler.json -d7**
- Step 5: Once the problem is diagnosed normal operations can be resumed with the following command: **/etc/init.d/pooler start**

POOLER command line debugging options

```
-h [ ——help ] Display help information
-V [ ——version ] Show version
-d<debug level> Set debugging level
-c [ ——config ] Config path
-s [ ——serial ] Show serial port data
-r [ ——raw ] Show raw telegram data
-B [ ——mbus ] Show M-Bus driver output
```

One example of debugging involves using the following command ->**pooler -c /etc/pooler/pooler.json -B -d7 -s**.

In this mode, both request packets and received packets are visible, along with the M-Bus driver output showing translated signal values received. This information can be instrumental in determining the correct configuration for the signal sheet. Additionally, messages regarding incorrect M-Bus frames can be observed, aiding in identifying potential wiring mistakes.

Revision #10
★Created 27 December 2023 14:04:10 by Tautvydas Gritė
Updated 27 May 2025 12:06:55 by Tomas