2023-04-24
WMBUSMETERS – How I did it

Got a new Kamstrup FlowIQ2200 installed with wireless mbus support
First try beginning of 2021 with an RTL-SDR radio receiver. Got connection and succeeded go get some of the data. How ever, I didn't have the SHA256 encrypted key to read the data. I failed to get the decryption key. Last autumn (2023-11) I went to the water provider again to see if anything new has happened.

Wm-bus dongle from kamstrup can feed seven different id which mean it requires seven loads (power) to start. One load is equal to 1,5mA.
This time they offered me a Kamstrup wmbus to mbus converter. There was not so much information given to me at that stage. I received the dongle and ordered an mbus-master. I couldn't read any data through that master. I checked with Kamstrup support and learned that Kamstrup dongle is made for handling up to seven different devices, which means that it always need power for handling seven even if they are not configured. The master I bought could just handle three.
Ordered a new master from Aliexpress (it's available on other sites as well) It's an USB MBUS slave to Master converter (approximately just below 400SEK)

It arrived, and I tested. It worked to get contact with the water meter but still no real data. It didn't seem like the water company were used to handle these kinds of dongles. At the third try I could finally get data out of my water meter. (they changed some setting from KAM to KAW to make it work.)

WMBUSMETERS Technical installation

I tried some different approaches when come to the installation part. I ended up with:
https://github.com/weetmuts/wmbusmeters. I have got a lot of tips and support from the founder of that repository. Since I visited the site the first time in 2021, it has evolved to a better site, with a much better installation.
Since I'm running home assistant, my goal was to get the data into sensors and dashboards. I tried to use the mbus master direct into my Home assistant but I got in conflict with some USB-ports so I had to give up on that one. Instead, I Used one of my RPI and installed a std Raspberry PI OS on it. Tried to install with snapd as recommended, but i ended up with a local compilation instead. But if you have less trouble with conflicting USB devices, it could save you some time (and a RPI) to use the https://github.com/wmbusmeters/wmbusmeters-ha-addon instead. Follow the instruction and use you master dongle into you Home Assistant instead. It also offers you a configuration user interface. Really nice!

On a fresh PI:

Sudo apt install librtlsdr-dev
Sudo apt install libncurses-dev

These two are reported missing if you try to get the wmbusmeters compiled direct.
Sudo git clone https://github.com/wmbusmeters/wmbusmeters
cd wmbusmeters
./configure
make
make install

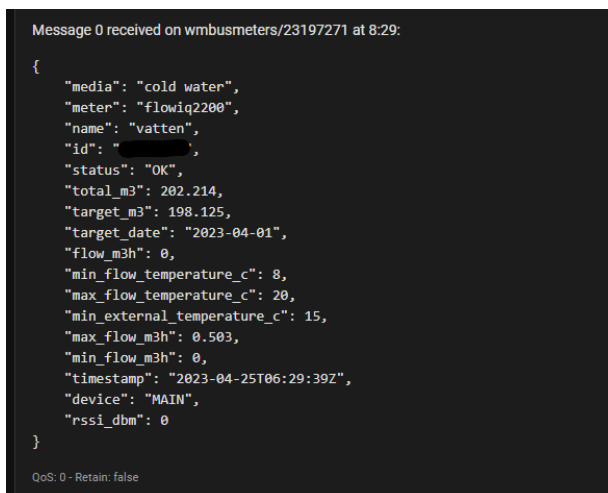You also need to install mosquito and mosquito-clients.
sudo apt install mosquitto
sudo apt install mosquitto-clients

when i tried to run mosquito I got an error "file not found" because of that it was installed in /sbin instead of me/sbin. Instead of solving that i put /sbin in PATH (not good from a security perspective, but my RPI cannot talk to internet.) (**sudo nano /home/me/.bashrc** <enter>, put the line "export PATH=$PATH:/sbin" as the last line without "". Press Ctrl-X for save.)

I have my MQTT brooker installed on Home Assistant. It has a user and a password to protect it. To test you MQTT:
mosquitto_pub -h YOUR.IP.ADRESS -u Username -P Password -t "TEST" -m "Message"
If this works you will see a message pop-up in Home Assistant. For the ones not so familiar with Home Assistant you can do like this:

Message 0 received on wmbusmeters/23197271 at 8:29:

{
    "media": "cold water",
    "meter": "flowiq2200",
    "name": "vatten",
    "id": "   ",
    "status": "OK",
    "total_m3": 202.214,
    "target_m3": 198.125,
    "target_date": "2023-04-01",
    "flow_m3h": 0,
    "min_flow_temperature_c": 8,
    "max_flow_temperature_c": 20,
    "min_external_temperature_c": 15,
    "max_flow_m3h": 0.503,
    "min_flow_m3h": 0,
    "timestamp": "2023-04-25T06:29:39Z",
    "device": "MAIN",
    "rssi_dbm": 0
}

QoS: 0 - Retain: false

In HASS. Go to Devices and Services. Find Mosquitto brooker and press configure. In the "listen to a topic" field. Write: # Press Start Listening. Now you will see all messages sent to that mosquitto brooker. When the rest has been configured you can replace the # to wmbusmeters/# to only see messages from wmbusmeters.

If you can write wmbusmeters and press enter, and you will see other things than a "file not found" error, you are ready to go.

If you haven't done it already, plug in the USB from the master into RPI. Normally it will appear on /dev/ttyUSB0 but could also appear on /dev/ttyUSB1 if you have other USB things connected.

To test the wmbusmeter connection use the following command:
(Be aware! that this setup is for an mbus master dongle for Kamstrup and the command is as well)
wmbusmeters –pollinterval=60s MAIN=/dev/ttyUSB0:mbus:2400 MyTapWater _
flowiq2200:MAIN:mbus 12345678 NOKEY

```
@vatten:~ $ wmbusmeters --pollinterval=60 MAIN=/dev/ttyUSB0:mbus:2400 vatten flowiq2200:MAIN:mbus        ▲ NOKEY
Started config MAIN=mbus on /dev/ttyUSB0
vatten                OK      202.084 m³       198.125 m³      2023-04-24 15:20.11
```

wmbusmeters shell='mosquitto_pub -h 192.168.20.51 -u uname -P pw -t wmbusmeters/"$METER_ID" -m "$METER_JSON"' --pollinterval=60s MAIN=/dev/ttyUSB0:mbus:2400 vatten flowiq2200:MAIN:mbus 12345678 NOKEY

Since I have limited knowledge in how to get the config files to work, as a temporarily solution, I have added the long command string to crontab (scheduled tasks)

Sudo crontab -e

Go to last line, write: @reboot xxxxx, where xxxxx is the command above. Press Ctrl-X and save. Reboot and the data will come.

It can take some packages before the full information comes from the meter. One time I had 7-8 packages with status info before the real measure showed up.

I will continue to work with my wmbusmeters.d (daemon) settings so it will be more clean on a startup.

This is how it looks when it's integrated with the energy tab in home assistant.
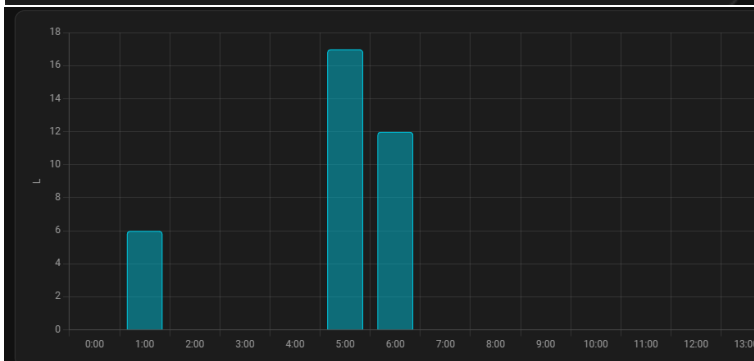
This the per hour view from the same energy tab.