BelgianSmartMeter2Domoticz

Goal

- Integrate Belgian Sagemcom S211 smart meter in domoticz
- Understand P1 port
- Limited budget
  - Hardware cost only
  - No subscription cost

Credits

Code from: https://github.com/jantenhove/P1-Meter-ESP8266

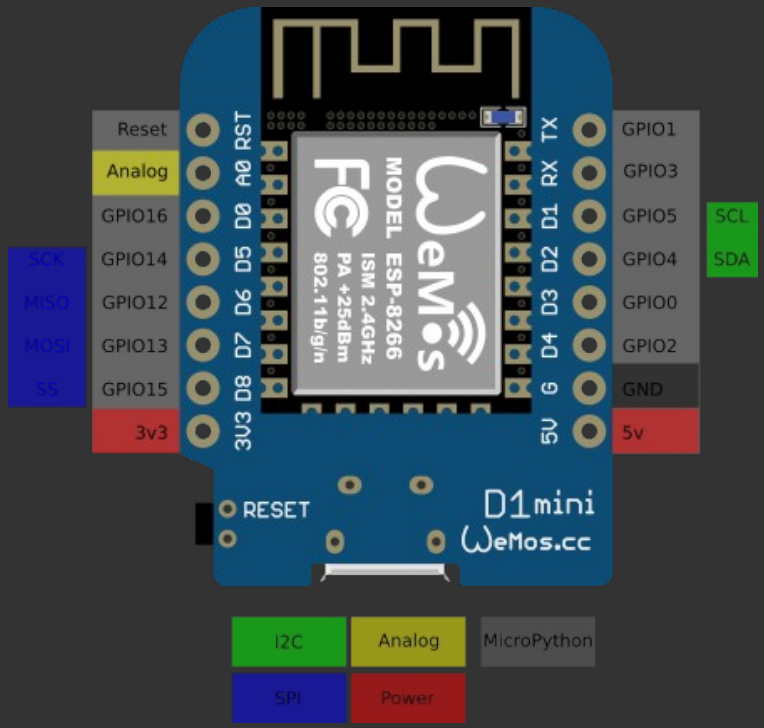
Instructions from:

http://domoticx.com/p1-poort-slimme-meter-data-naar-domoticz-esp8266/
https://www.fluvius.be/sites/fluvius/files/2020-01/dmk-demo-v2.1-rtc.pdf

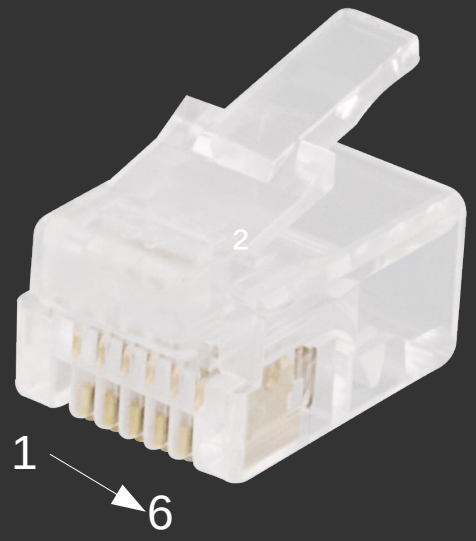
Hardware

LOLIN Wemos D1 Mini

- 5V
- Wireless
- ESP8266 architecture
- Cheap



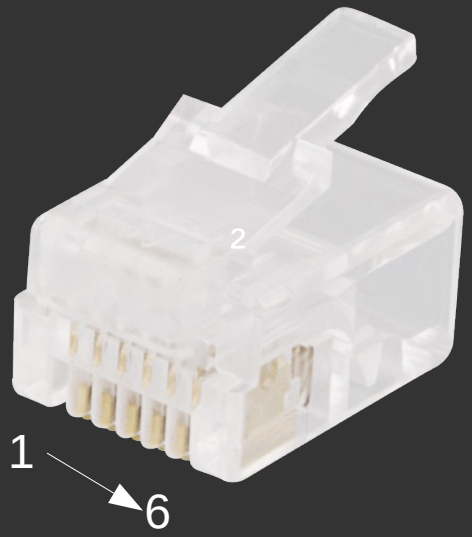
Connecting to the P1 port over RJ12



1. 5V***
2. 5V**
3. Ground**
4. Not Connected
5. RxD*
6. Ground***

* I used GPIO 2 on the D1 Mini
** When closing this circuit with 5V, this signals the smart meter to start sending data over the RxD pin
*** The Fluvius smart meter provides power over these pins, so you don’t have to power the D1 Mini over a separate USB/power cable

Connecting to the P1 port over RJ12



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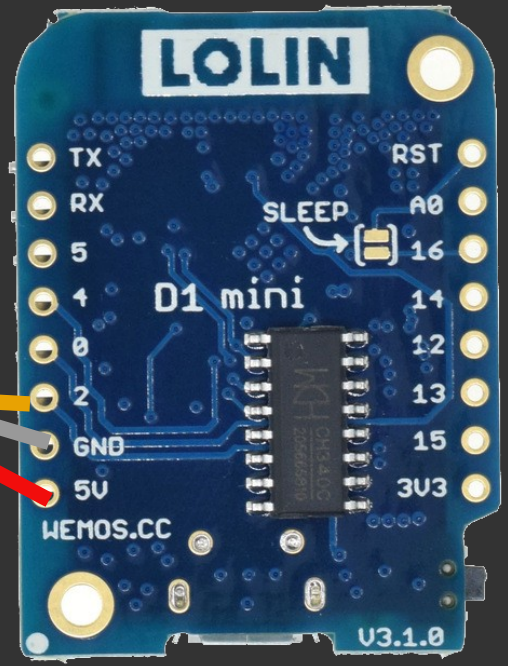

Example Serial console output

```
/FLU5\632470339_T
0-0:96.1.4(50213)
0-0:96.1.1(3153414731313030303838303136)
0-0:1.0.0(200912060615S)
1-0:1.8.1(001210.105*kWh)
1-0:1.8.2(002703.013*kWh)
1-0:2.8.1(001750.611*kWh)
1-0:2.8.2(000507.828*kWh)
0-0:96.14.0(0002)
1-0:1.7.0(01.850*kW)
1-0:2.7.0(00.000*kW)
1-0:32.7.0(232.3*V)
1-0:31.7.0(008*A)
0-0:96.3.10(1)
0-0:17.0.0(999.9*kW)
1-0:31.4.0(999*A)
0-0:96.13.0()
0-1:24.1.0(003)
0-1:96.1.1(37464C4F323131393131343739 32)
0-1:24.4.0(1)
0-1:24.2.3(200912060501S)(00866.794*m3)
!8CA4

VALID CRC FOUND!
[HTTP] GET... URL: http://192.168.1.4:8080/json.htm?type=command&param=udevice&idx=183&nvalue=0&svalue=1210105;2703013;1750611;507828;1850;0
[HTTP] GET... code: 200
```

Example Serial console output

```
/FLU5\632470339_T
0-0:96.1.4(50213)
0-0:96.1.1(3153414731313030303838303136)
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[HTTP] GET... code: 200
```
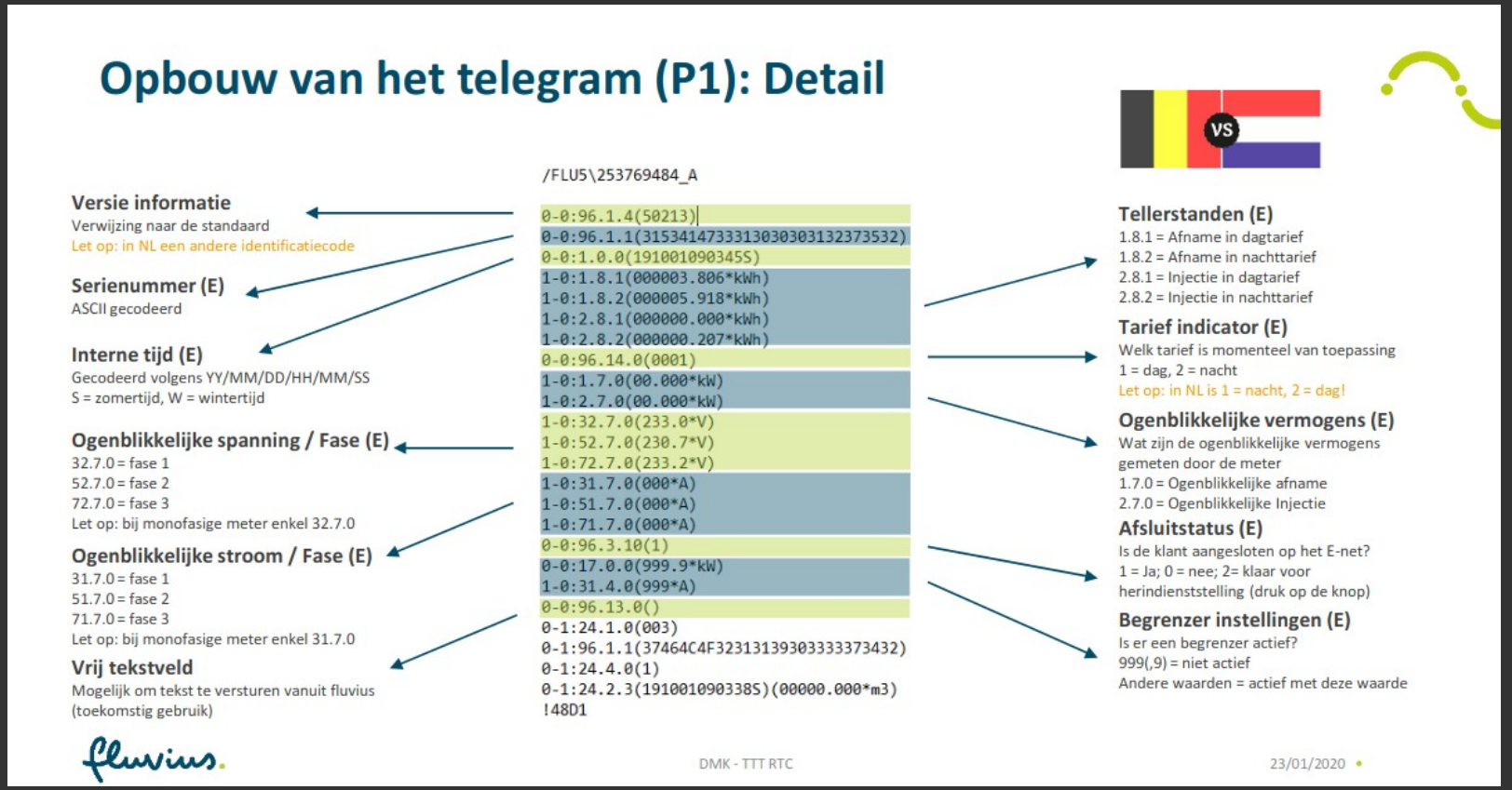

Example telegram

Always starts with a /
Always ends with line starting with !

Cyclic redundancy check done on the message
Not all information sent to Domoticz

Message labels and values



Source: https://www.fluvius.be/sites/fluvius/files/2020-01/dmk-demo-v2.1-rtc.pdf

The arduino code

- Based on Jan Ten Hove’s Github project
- Altered for belgian implementation of DSMR P1 V5.0.2
  - HI/LO production/consumption identification in the telegram is inverted BE vs NL
  - Gas identification is different BE vs NL
  - WH to kWH conversion needed
  - MAXLINELENGTH extended

Get up and running 1 of 2

- Download & install arduino IDE
- Add ESP8266 boards support to Arduino IDE
  - File > Preferences > Additional Boards Manager URL:
    http://arduino.esp8266.com/stable/package_esp8266com_index.json
- Install the ESP8266 SoftSerial library
  - Sketch > Include Library > Manage Libraries
    I installed AltSoftSerial *library from Paul Stoffregen*
- Add CRC16.h to a new folder you call CRC16 in your Arduino/Libraries folder.
  E.g. for Linux in /*home/yourusername/*Arduino/libraries/CRC16/CRC16.h

Get up and running 2 of 2

- Configure the sketch to connect to your network