



# HANDS ON THE FLM03E

FIRST EXPERIENCES

MARKUS GEBHARD, KARLSRUHE, AUGUST 2016

[HTTP://GITHUB.COM/GEBHARDM](http://github.com/gebhardm)

# THE FLM03E IS...

- ... the newest generation of a community measurement appliance for energy, water, gas, environment
- ... a worthy successor of the FLM02
- ... designed and provided by Bart Van Der Meerssche@flukso.net



# BOXED



50A current clamps with smaller layout and attached wires; fast detection of current and phase

Base unit with seven ports, built-in WiFi and 868MHz communication

Power Supply, 9V AC also for voltage and phase measurement



# INSTALLATION – THE CURRENT CLAMPS

Clamping  
the Mains  
(mind your  
fingers)



# INSTALLATION – THE BASE UNIT



# STARTING-UP – BASE CONFIGURATION

- Hardware

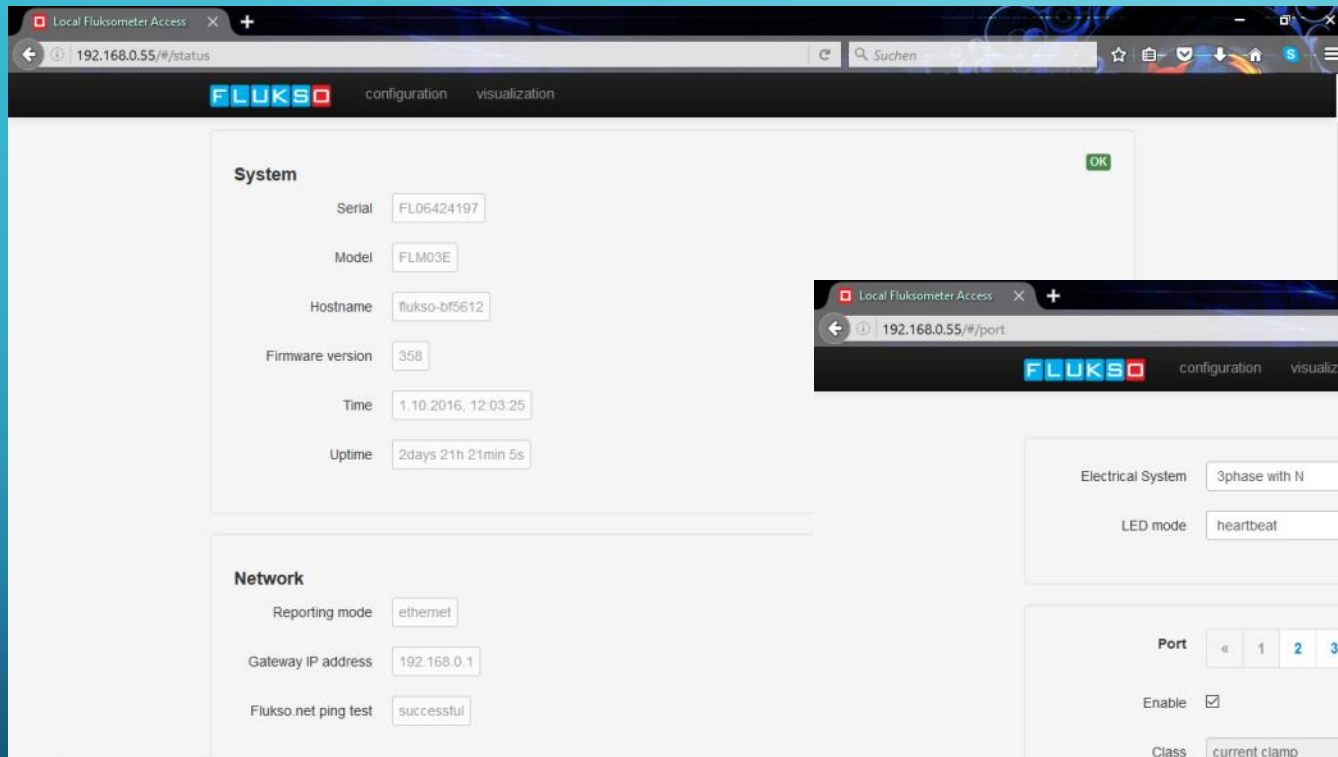
- Attach WAN port “to the internet” (modem/router side of your LAN)
- Attach LAN port to a PC/Mac you are about to use for configuration

- Software

- Browse <http://192.168.255.1> – your PC/Mac gets an IP-address from the FLM03E
- Login as user ‘root’ with default password ‘root’
- Configure your network and sensors (type and name)



# STATUS & SENSOR CONFIGURATION



Local Fluksometer Access

192.168.0.55/#/status

FLUKSO configuration visualization

**System**

Serial: FL06424197

Model: FLM03E

Hostname: flukso-bf5612

Firmware version: 358

Time: 1.10.2016, 12:03:25

Uptime: 2days 21h 21min 5s

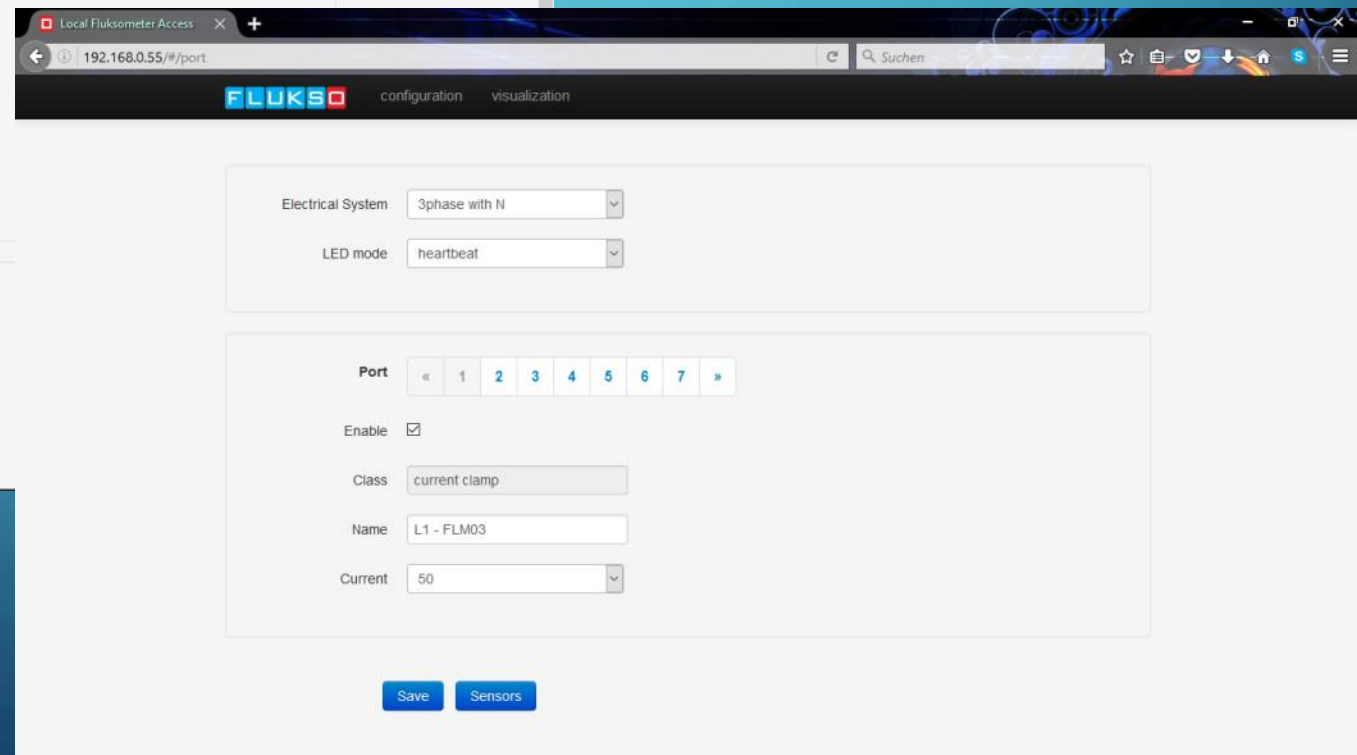
**Network**

Reporting mode: ethernet

Gateway IP address: 192.168.0.1

Flukso.net ping test: successful

OK



Local Fluksometer Access

192.168.0.55/#/port

FLUKSO configuration visualization

Electrical System: 3phase with N

LED mode: heartbeat

Port: 1 2 3 4 5 6 7

Enable: ☒

Class: current clamp

Name: L1 - FLM03

Current: 50

Save Sensors

# DONE – FOR THE EASY PART...

View

Edit

Orders

Subscriptions

Privacy

Devices

Sensors

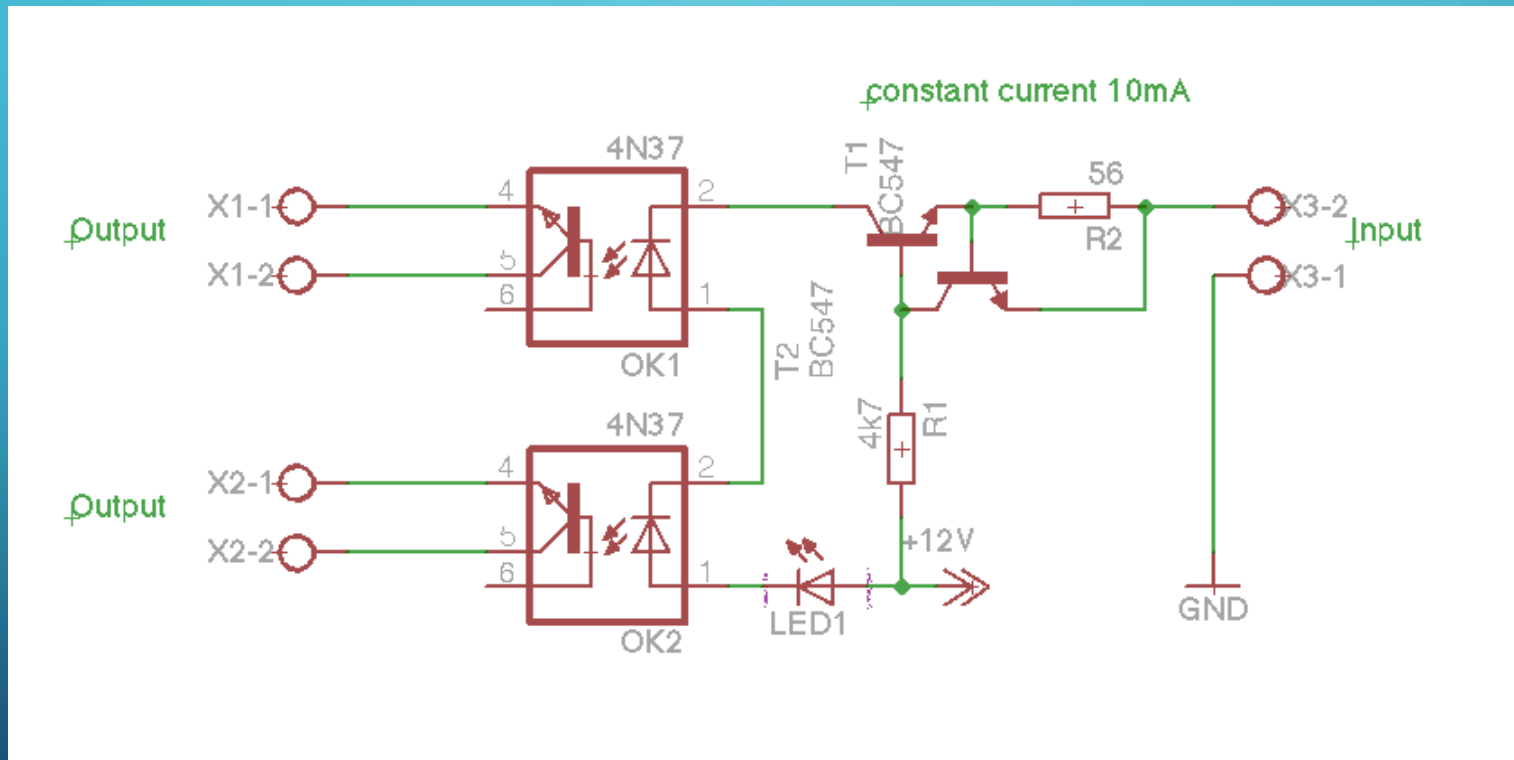
| Serial     | Version | Resets | Last heartbeat       | Uptime | Operations        |
|------------|---------|--------|----------------------|--------|-------------------|
| FL02000178 | 250     | 84     | 01 Oct 2016 11:01:06 | 2d 20h | <div>remove</div> |
| FL06424197 | 358     | 12     | 01 Oct 2016 11:00:02 | 2d 20h | <div>remove</div> |





# A LITTLE BIT OF ELECTRONICS...

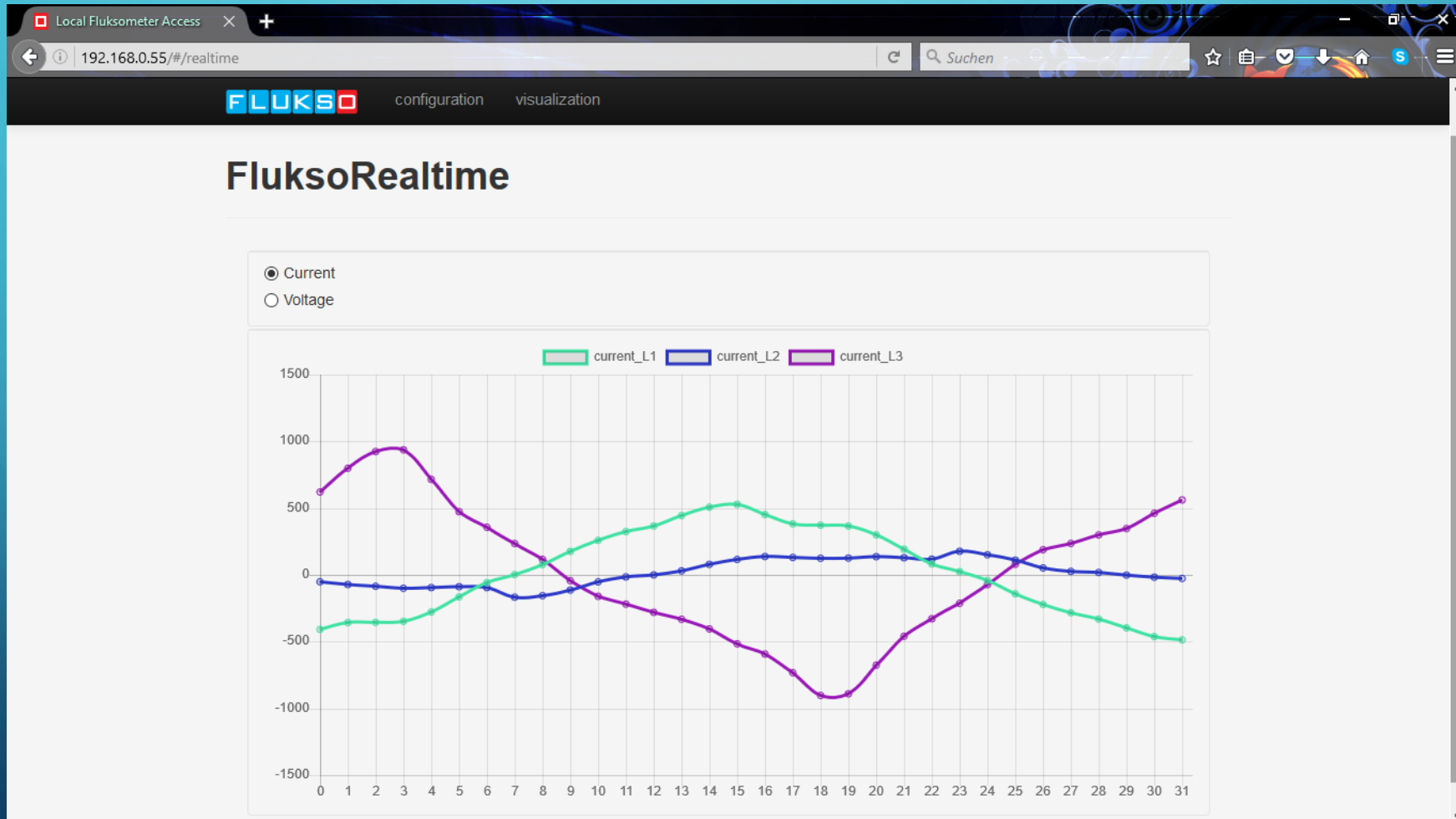
## How to interface one PV with two FLMs?



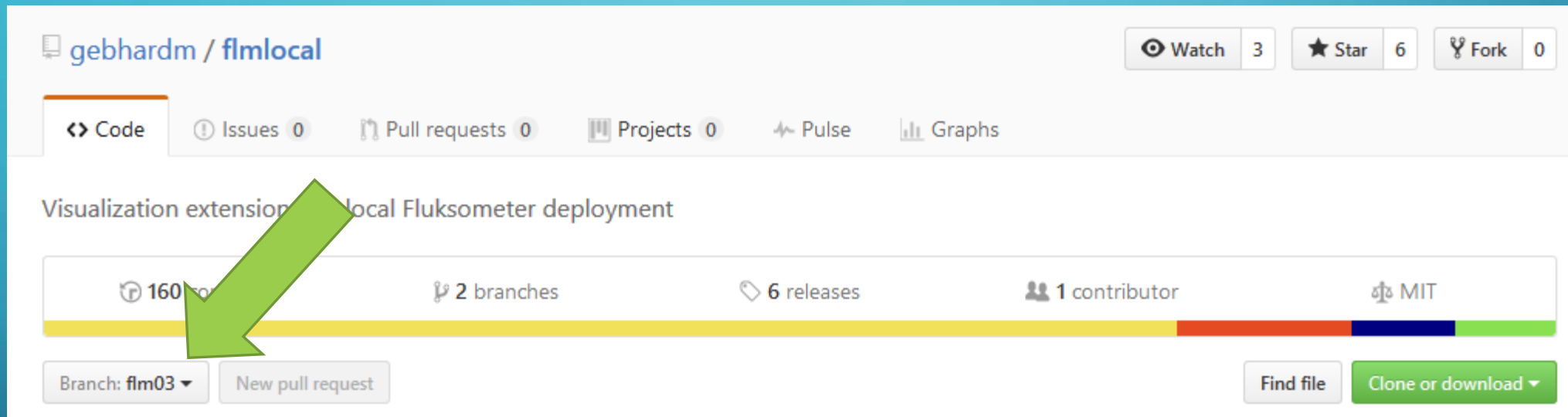
$S0 \rightarrow 2x S0$

## Pulse Splitter for a single pulse output to two inputs...

# NOW – HANDS ON THE NEW FEATURES

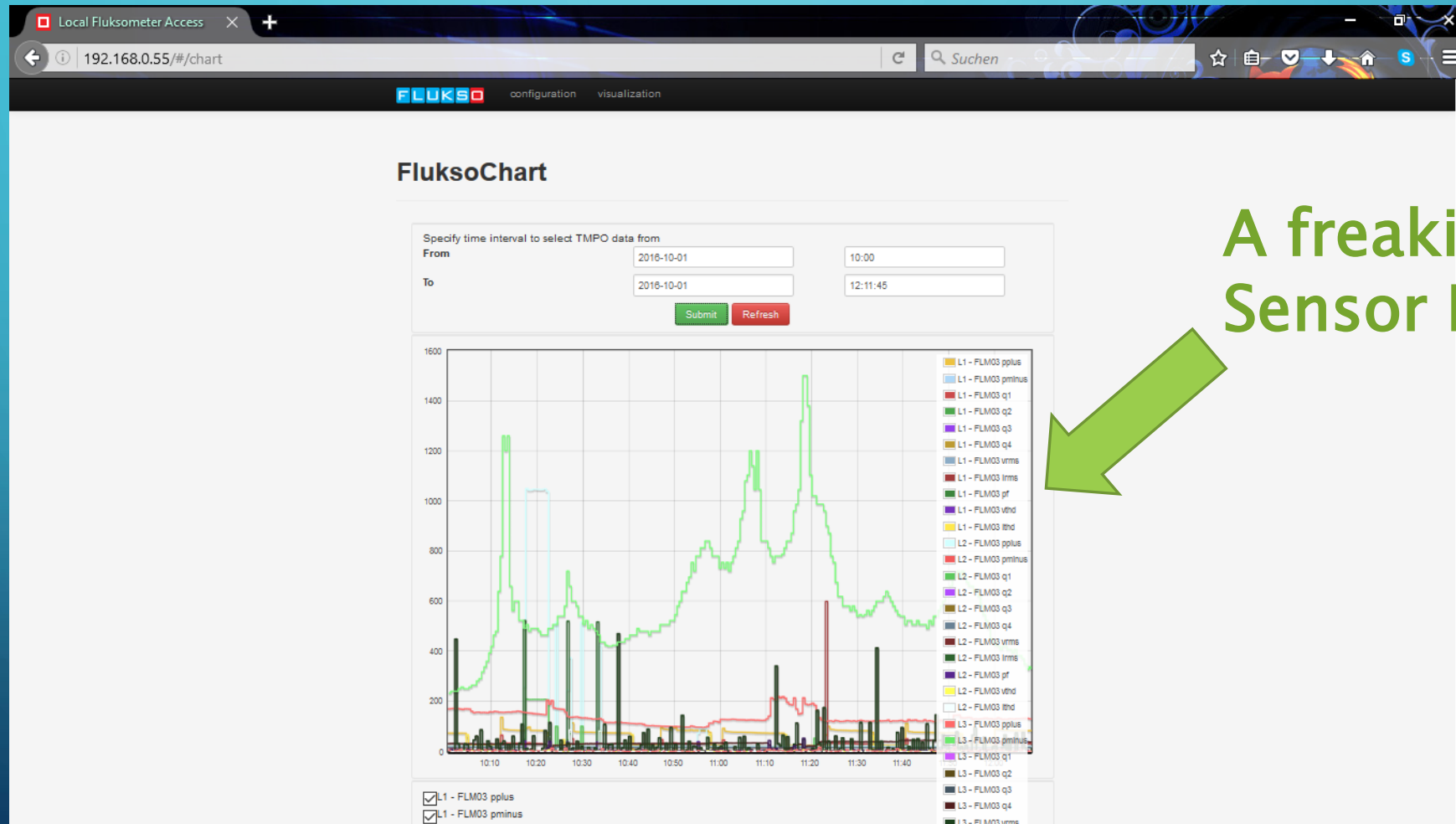


# FLM – THE LOCAL VISUALIZATIONS



<https://github.com/gebhardm/flmlocal/tree/flm03>

# FLUKSOCHART



A freaking lot of  
Sensor Data



# NOW YOU MAY HELP YOURSELVES

## All on Github

