Weather Station for our Friends in Africa

Current partners: Uganda, Benin, Ghana

Idea

We build our own data loggers based on ESP32. Data transmission is done via Wifi, Cellular Network or LoRaWAN.

Sensors

An initial set of sensors:

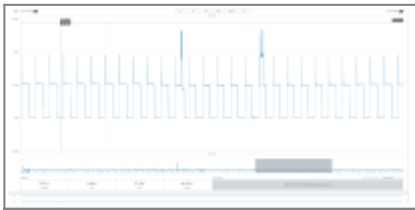
Tipping Bucket Rain Gauge

UICPAL Sensors

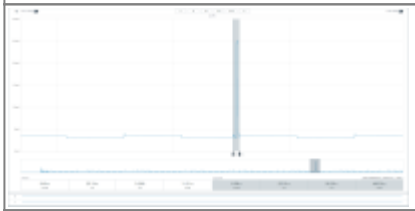
Data Sheet: rs-yl-n01-5.pdf


Inside of the Rain Gauge and PCB

Current Consumption



The current consumption of the rain gauge with 5V supply voltage is around 3.5mA on average. The two spikes in the screenshot are caused by the bucket tipping. The oscillation in the voltage is caused by a blinking LED on the PCB.



Reading data from it increases the current to around 25mA for 60ms.

Wind Velocity (Anemometer)

UICPAL Sensors

Data Sheet: pr-3000-fsjt-n01.pdf

Wind Direction

UICPAL Sensors

Data Sheet: pr-3000-fxjt-n01.pdf

Air Temperature

- PT100 (best)
- DS18B20

Air Humidity

Air Pressure