

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



Rain Sensor

Comply with National Standard
GB/T 21978.2-2014

Precise Measurement

304 Stainless Steel

Strong Anti-interference

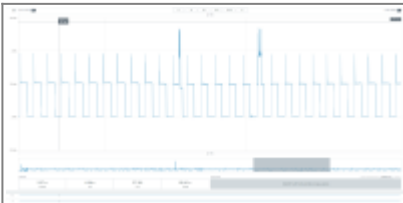
UICPAL Sensors

Data Sheet: [rs-yl-n01-5.pdf](#)

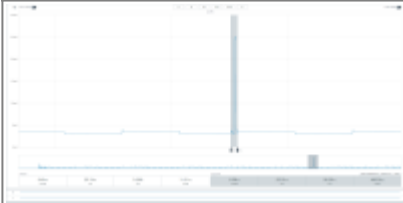


Inside of the Rain Gauge and PCB

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)

Wind Speed Transmitter

Output → RS485
4-20mA
0-5V
0-10V

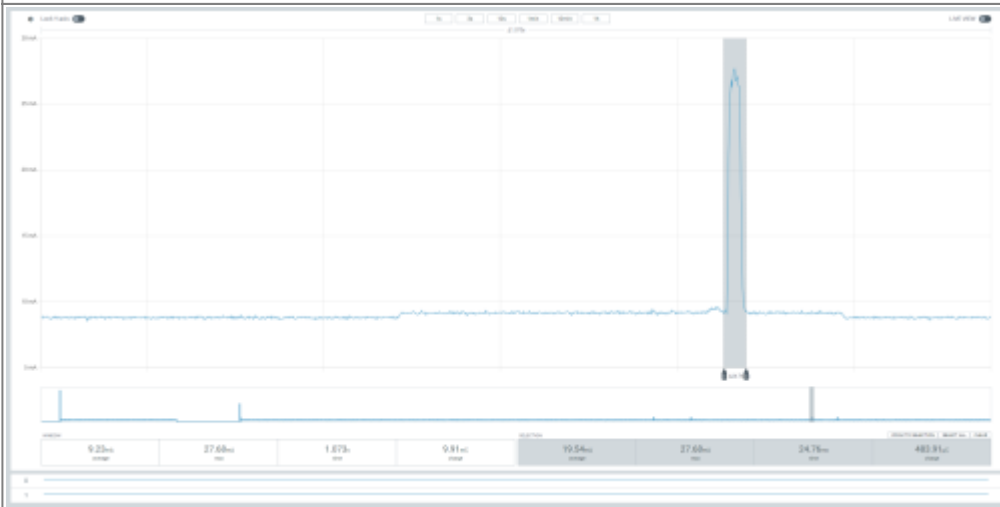
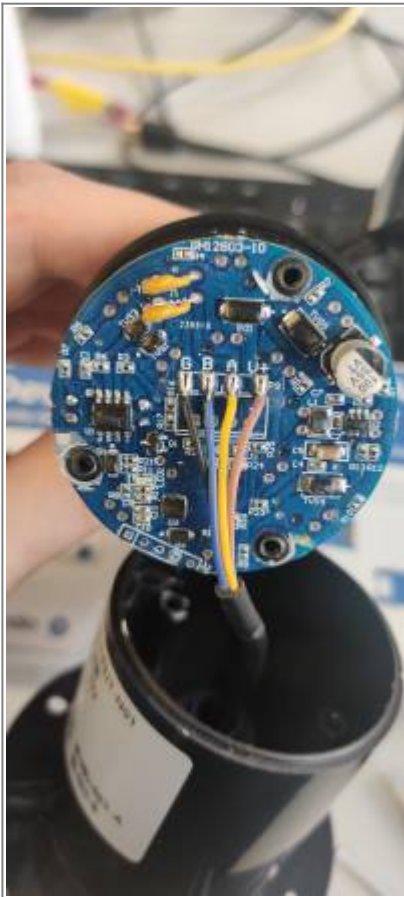
- Small Rotational Resistance
- Highly Sensitive
- Waterproof and Anti-corrosion
- Resolution: 0.1 m/s
- Range: 0-30m/s



UICPAL Sensors

Data Sheet: [pr-3000-fsjt-n01.pdf](https://www.uicpal.com/pr-3000-fsjt-n01.pdf)





Wind Direction

Wind Direction Sensor
Output RS485 / 4-20mA / 0-5V / 0-10V



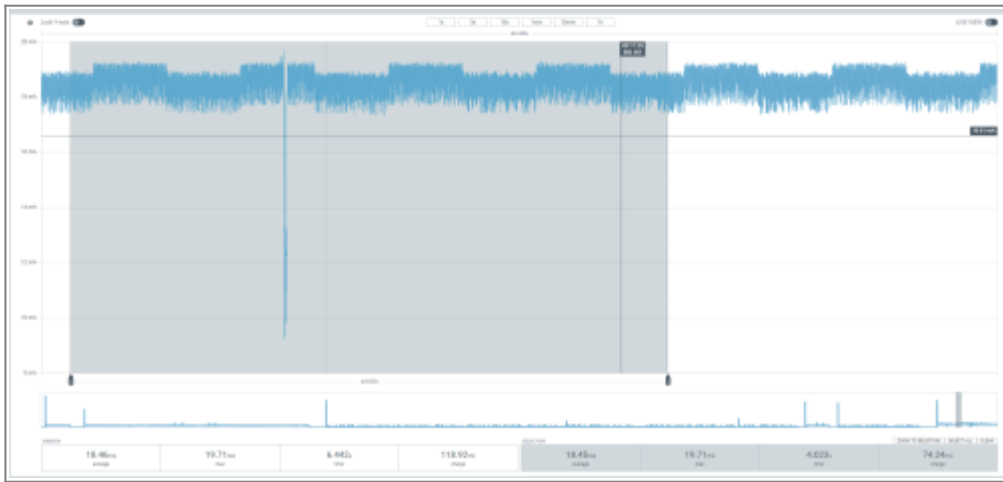
UICPAL
Sensors, PCBs, Software Development

- Anti-corrosion and rust prevention
- Accurate measurement
- Strong anti-interference ability
- The range is wide
- Range: 8 directions

UICPAL Sensors

Data Sheet: [pr-3000-fxjt-n01.pdf](#)





Air Temperature

- PT100 (best)
- DS18B20

Air Humidity

Air Pressure

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