

Jan '25

We plan to install in the barn two fixed stations to continuously measure environmental parameters (Temperature, barometric Pressure, Humidity) and Methane and Carbon dioxide concentrations.

The data is sent to a server and recorded into a database for analysis.

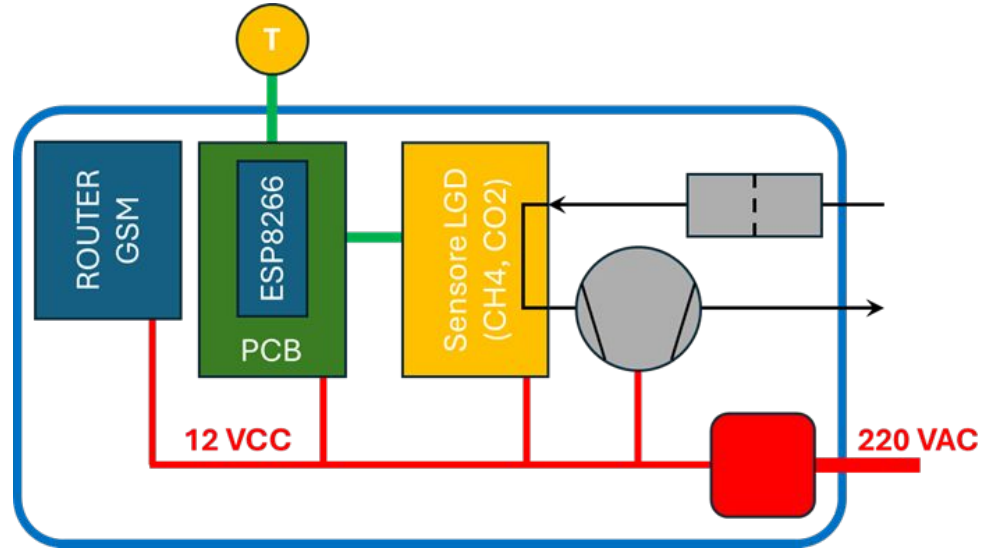
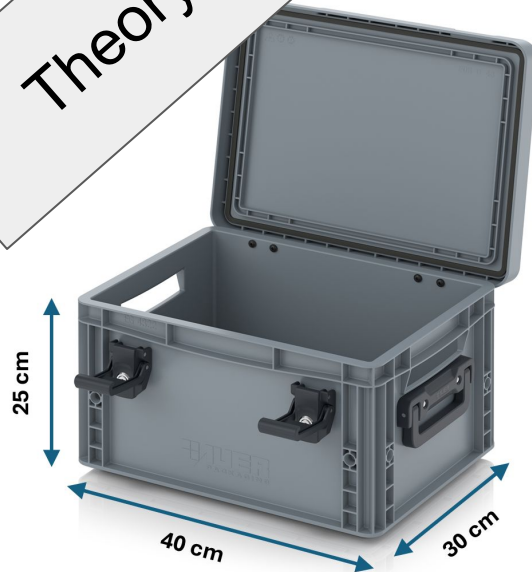
### Main components of a station

- a board to measure T,P,H that implements a BME280 sensor (MIKROE 5761)
- a Laser Gas Detector to measure the concentration of CH<sub>4</sub> and CO<sub>2</sub> (LGD Compact-A by Axetris)
- a vacuum pump and a filter to flow air into the cell detector
- a Wi-Fi ESP8266 microcontroller (Adafruit Feather HUZZAH)
- a GSM router for internet connection (QUARTZ-LITE-GW21-LTE by Siretta)

**STILL  
MISSING**

The components must be housed in a closed box with high degree of protection

Theory



# CH4rlie

## The monitoring station

The components must be housed in a closed box with high degree of protection

Practice!

We are waiting for tubes and GSM router. Than components have to be assembled in the box.  
The DAQ software is ready.



# CH4rlie

## The monitoring station

### Plan ahead

- Calibration of the LGD sensor (CH<sub>4</sub> and CO<sub>2</sub>) (2 weeks)
- Installation could be scheduled by the end of May