

LoraWan UNO

mit MQ2 Sensor / bmp Sensor

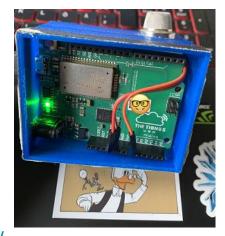
Grundlagen

https://github.com/TheThingsNetwork/workshops

https://www.thethingsindustries.com/docs/devices/the-things-uno/

https://docs.arduino.cc/learn/communication/lorawan-101

https://www.pololu.com/file/0J309/MQ2.pdf



Sensorwerte Kalibrieren

Mit dem Programm R0ermittel.ino den Wert ermitteln und aufschreiben

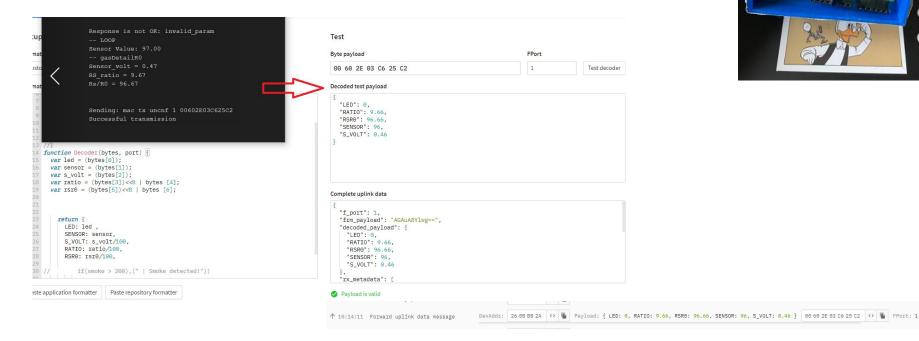
```
1 void setup() {
       Serial.begin(9600);
                                                                    /*-Replace the name "RO" with the value of RO in the demo of First Test -*/
 5 void loop() {
      float sensor volt;
      float RS air; // Get the value of RS via in a clear air
                                                            ratio = RS gas/0.10; // ratio = RS/R0
      float R0: // Get the value of R0 via in H2
      float sensorValue;
         sensorValue = sensorValue + analogRead(A0);
                                                                                Anschließend in das programm einfügen
Ausgabe Serieller Monitor X
                               R0 = -0.10
sensor volt = 4.62V
                               sensor volt = 74.72V
                               R0 = -0.10
sensor wolt = 5.55V
sensor wolt = 6.01V
                               sensor volt = 75.19V
sensor volt = 6.94V
                               R0 = -0.10
sensor volt = 7.41V
```

Payload im Programm einrichten

Im Code das Paylod format entsprechend anpassen

```
void gasdetailr0()
                                                                  int rgs = ((RS gas)*100);
    debugSerial.println("-- gasDetailR0");
                                                                  int rto = ((ratio)*100);
    float sensor volt;
                                                                 // Prepare payload of 7 byte of LED/Gas Dedektor
    float RS gas; // Get value of RS in a GAS
                                                                 byte payload[7];
    float ratio; // Get ratio RS GAS/RS air
                                                                 payload[0] = (digitalRead(LED BUILTIN) == HIGH) ? 1 : 0;
    int sensorValue = analogRead(A0);
                                                                  payload[1] = (sensorValue);
    sensor volt=(float)sensorValue/1024*5.0;
                                                                  payload[2] = ((sensor volt)*100);
    RS gas = (5.0-sensor volt)/sensor volt; // omit * RL
                                                                 // Umwandeln von int in einen Payload pro Sensor (rgs , rto) von je 2 byte
                                                                  payload[3] = rgs >> 8;
          /*-Replace the name "RO" with the value of RO in the
                                                                 payload[4] = rgs;
    ratio = RS gas/0.10; // ratio = RS/R0
                                                                                                                      Ausgabe Seriel:
                                                                  payload[5] = rto >> 8;
                                                                                                                   Response is not OK: invalid param
                                                                  payload[6] = rto;
                                                                                                                   -- TOOP
                                                                                                                   Sensor Value: 97.00
                                                                                                                   -- gasDetailR0
                                                                                                                   Sensor volt = 0.47
                                                                                                                   RS ratio = 9.67
                                                                                                                   Rs/R0 = 96.67
                                                                  ttn.sendBytes(payload, sizeof(payload));
                                                                                                                   Sending: mac tx uncnf 1 00602E03C625C2
                                                                                                                   Successful transmission
```

Payload auf TTN Dekodieren





Anschaltung bmp

der bmp wird an die vorhandenen SCL/SDA Kontakte Angeschaltet.

Spannung 3,3V / GND

der MQ2 an A0

Spannung 5V / GND

