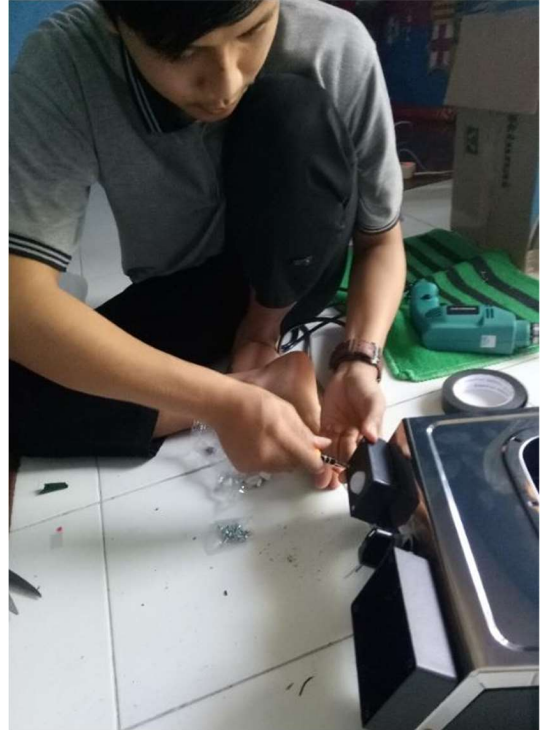


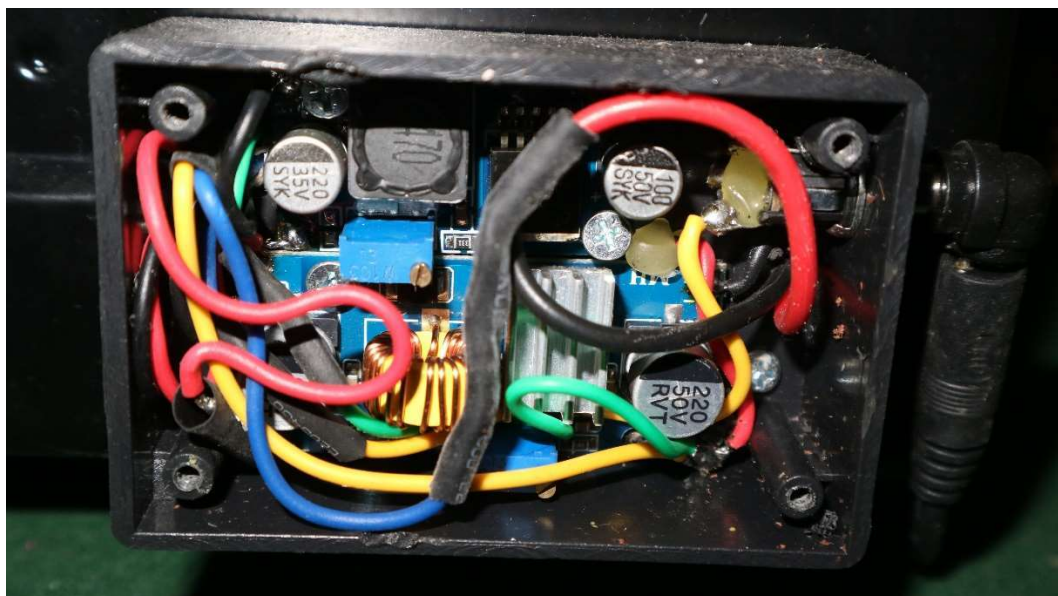
LAMPIRAN



Gambar 1. Perakitan kompor dan uji coba sementara



Gambar 2. Pemasangan komponen bagian depan



Gambar 3. Modul Power supply



Gambar 4. Uji coba sensor gas



Gambar 5. Uji coba kompor untuk memasak

Kode Program Utama

```
#include <Wire.h>
#include <Adafruit_GFX.h>
#include <Adafruit_SSD1306.h>
#include <SoftwareSerial.h>
SoftwareSerial SIM800L(8,9);
#define OLED_RESET 12
Adafruit_SSD1306 display(OLED_RESET);
const int sensorPin = 5;
const int outputPin = 13;
const int sensorPir = 6;
const int selenoid = 7;
const int led1 = 11;
const int led2 = 12;
const int knop = 10;
char data = 0;
int bacasensor = 0;
int bacasensornpir = 0;
int knop_1 = 0;
int waktu_pergi;
int waktu_otomatis;
int oto;
int alert;
volatile int i;
volatile int k;
float sensorLPG;
volatile int j;
int A = 1;
int M = 1;
int G = 1;
int E=1;
int E_1=1;
```

```

char c = ' ';
int encoder_Pin1 = 2;
int encoder_Pin2 = 3;
int encoderSwitchPin = 4;
int lastMSB = 0;
int lastLSB = 0;
volatile int last_Encoded = 0;
volatile long encoder_Value = 1;
long lastencoderValue = 0;

void setup() {

    SIM800L.begin(19200);
    Serial.begin (9600);

    pinMode(outputPin, OUTPUT);
    pinMode(sensorPin, INPUT);
    pinMode(sensorPir, INPUT);
    pinMode(solenoid, OUTPUT);
    pinMode(led1, OUTPUT);
    pinMode(led2, OUTPUT);
    pinMode(knop, INPUT);
    pinMode(encoder_Pin1, INPUT);
    pinMode(encoder_Pin2, INPUT);
    pinMode(encoderSwitchPin, INPUT);
    digitalWrite(encoder_Pin1, HIGH);
    digitalWrite(encoder_Pin2, HIGH);
    digitalWrite(encoderSwitchPin, HIGH);
    attachInterrupt(0, updateEncoder, CHANGE);
    attachInterrupt(1, updateEncoder, CHANGE);
    display.begin(SSD1306_SWITCHCAPVCC, 0x3C);
    display.clearDisplay();
    display.setTextSize(1);

```

```

display.setTextColor(WHITE);
display.setCursor(21,10);
display.println("--KOMPOR ALAI--");
display.display();
delay(3000);
display.clearDisplay();
knop_1 = digitalRead(knop);
    if(knop_1 == 0)
    {
        while(A)
        {
            knop_1 = digitalRead(knop);
            if(knop_1 == 1)
            {
                display.clearDisplay();
                A = 0;
            }

            display.setTextSize(1);
            display.setTextColor(WHITE);
            display.setCursor(28,5);
            display.println("PUTAR KNOP");
            display.setTextSize(1.3);
            display.setCursor(20,15);
            display.println(" KE POSISI OFF");
            display.display();

        }
    }

ALERT();
OTO();

```

```

digitalWrite(solenoid,HIGH);
display.setTextSize(1);
display.setTextColor(WHITE);
display.setCursor(28,5);
display.println("KOMPOR ALAI");
display.setTextSize(1.3);
display.setCursor(20,15);
display.println("SIAP DIGUNAKAN");
display.display();
delay(3000);
display.clearDisplay();
}

```

```

void loop()
{
  sensorLPG = analogRead(A0);
  Serial.print("Data gas yang terbaca :");
  Serial.println(sensorLPG);
  if(sensorLPG>349)
  {
    KebocoranLPG();
  }
  if(sensorLPG<348)
  {G=0;}
  display.setTextSize(1);
  display.setTextColor(WHITE);
  display.setCursor(1,1);
  display.println("OTO:");
  display.setTextSize(1);
  display.setTextColor(WHITE);
  display.setCursor(32,1);
  display.println(oto);
  display.display();
}

```

```

delay(100);

display.setTextSize(1);
display.setTextColor(WHITE);
display.setCursor(60,1);
display.println("|");
display.display();
delay(100);

display.setTextSize(1);
display.setTextColor(WHITE);
display.setCursor(78,1);
display.println("Alert:");
display.setTextSize(1);
display.setTextColor(WHITE);
display.setCursor(120,1);
display.println( alert);
display.display();
delay(100);
bacasensor = digitalRead(sensorPin);
bacasensorpir = digitalRead(sensorPir);
if (bacasensor == HIGH)
{
  digitalWrite(solenoid, HIGH);
  digitalWrite(led1,LOW);
M = 1 ;
G = 1 ;
display.clearDisplay();
display.setTextSize(1);
display.setTextColor(WHITE);
display.setCursor(0,15);
display.println("Silahkan Nyalakan Api Kompor");
display.display();

```



```

delay(100);

}
else
{
  if (bacasensor == LOW && bacasensorpir == LOW )
  {
    digitalWrite(led1,LOW);
    waktu_pergi = (alert * 60);
    display.clearDisplay();
    while(i<waktu_pergi)
    {
      bacasensorpir = digitalRead(sensorPir);
      if (bacasensorpir == 1)
      {
        i = waktu_pergi+1;
      }
      i++;
      delay(1000);
      display.setCursor(64,10);
      display.println(i);
      display.display();
      display.clearDisplay();
      if(bacasensorpir == 1)
      {
        display.setCursor(64,15); //PIRRRRRRRRRRRRRRRRRRRRRRRR
        display.println("OK");
        display.display();
        delay(100);
        display.clearDisplay();
      }
      if (i==waktu_pergi)
      {

```

```

        SendMessageOto();
        digitalWrite(outputPin, HIGH);
        buzzer();
    }
}
}
if (bacasensor == LOW && bacasensorpir == HIGH )

{
    i=0;
    j=0;
    k=0;
    display.clearDisplay();
    digitalWrite(outputPin, LOW);
    digitalWrite(solenoid, HIGH);
    digitalWrite(led1,HIGH);
    display.setTextSize(1);
    display.setTextColor(WHITE);
    display.setCursor(0,15);
    display.println("Kompur aman");
    display.display();
    delay(100);
}
}
}

void updateEncoder()
{
    int MIN = 1;
    int MAX = 30;
    int MSB = digitalRead(encoder_Pin1);
    int LSB = digitalRead(encoder_Pin2);
    int encoded = (MSB << 1) |LSB;

```

```

int sum = (last_Encoded << 2) | encoded;
if(sum == 0b1101 || sum == 0b0100 || sum == 0b0010 || sum == 0b1011)
encoder_Value++;
if(encoder_Value > MAX ) encoder_Value = MAX;
if(sum == 0b1110 || sum == 0b0111 || sum == 0b0001 || sum == 0b1000)
encoder_Value--;
if (encoder_Value < MIN) encoder_Value = MIN;
last_Encoded = encoded;
}
void ALERT()
{
while(E_1)
{
if(digitalRead(encoderSwitchPin)){
}
else{
E_1=0;
}
alert=encoder_Value;
delay(100);
display.setTextSize(1);
display.setTextColor(WHITE);
display.setCursor(1,1);
display.println("SET WAKTU PERGI:");
display.setTextSize(1);
display.setTextColor(WHITE);
display.setCursor(32,15);
display.println(alert);
display.setTextSize(1);
display.setTextColor(WHITE);
display.setCursor(50,15);
display.println("MENIT");
display.display();
}
}

```

```

    delay(100);
    display.clearDisplay();

}
}

void OTO()
{
while(E)
{
    if(digitalRead(encoderSwitchPin)){
    }
    else{
E=0;
    }
    oto=encoder_Value;
    delay(100);
    display.setTextSize(1);
    display.setTextColor(WHITE);
    display.setCursor(1,1);
    display.println("SET WAKTU OTOMATIS");
    display.setTextSize(1);
    display.setTextColor(WHITE);
    display.setCursor(32,15);
    display.println(oto);
    display.setTextSize(1);
    display.setTextColor(WHITE);
    display.setCursor(50,15);
    display.println("MENIT");
    display.display();
    delay(100);
    display.clearDisplay();
}
}

```

```

}
}
void buzzer(){
waktu_otomatis = (oto * 60);
while(j<waktu_otomatis)
{
    bacasensorpir = digitalRead(sensorPir);
    if (bacasensorpir == 1)
    {
        j = waktu_otomatis+1;
    }
    j++;
    delay(500);
    digitalWrite(outputPin, HIGH);
    delay(500);
    digitalWrite(outputPin, LOW);

    display.setCursor(64,15);
    display.println(j);
    display.display();
    display.clearDisplay();
    if (j==waktu_otomatis)
    {
        SendMessage15a();
        while(M)
        { knop_1 = digitalRead(knop);
          if(knop_1 == 1)
          {
              M=0;
          }
        }
        display.clearDisplay();
        digitalWrite(solenoid, LOW);
        digitalWrite(outputPin, LOW);
    }
}
}

```

```

        display.setTextSize(1);
        display.setTextColor(WHITE);
        display.setCursor(0,15);
        display.println("kompor tidak diawasi");
        display.display();
        delay(100);
    }
}
}
}

void SendMessage15a()
{
digitalWrite(led1,HIGH);
SIM800L.println("AT+CMGF=1");
delay(1000);
SIM800L.println("AT+CMGS=\"081234912439\"");
delay(1000);
SIM800L.print("KOMPOR TELAH DIMATIKAN KARENA TIDAK
DIAWASI, PUTAR KNOP UNTUK MENYALAKAN KOMPOR KEMBALI");
delay(100);
SIM800L.println((char)26);
delay(1000);
digitalWrite(led1,LOW);
}

void SendMessageOto()
{
digitalWrite(led1,HIGH);
SIM800L.println("AT+CMGF=1");
delay(1000); SIM800L.println("AT+CMGS=\"081234912439\"");
delay(1000);
SIM800L.print("Kompor Tidak Diawasi Harap Kembali, Agar Kompor Tetap
Aman");
}

```

```

delay(100);
SIM800L.println((char)26);
delay(1000);
digitalWrite(led1,LOW);
}
void KebocoranLPG()
{
while(G)
    { float sensorLPG;
      sensorLPG = analogRead(A0);
      if(sensorLPG<348)
        G=0;
      digitalWrite(outputPin, HIGH);
      delay(200);
      digitalWrite(outputPin, LOW);
      delay(100);
      display.clearDisplay();
      digitalWrite(solenoid, LOW);
      display.setTextSize(1);
      display.setTextColor(WHITE);
      display.setCursor(0,2);
      display.println("TERJADI KEBOCORAN GAS");
      display.display();
      delay(100);
      display.setTextSize(1);
      display.setTextColor(WHITE);
      display.setCursor(0,15);
      display.println("JANGAN MENYALAKAN API");
      display.display();
      delay(100);
    }
}

```