

LAMPIRAN A

Program Arduino

(Program main)

```
#include "Nexction.h"

bool counter = 0;

int trig = 8;

int echo = 9;

long durasi, jarak;

#define turbi_pin A0

#define turbi_pin2 A1

int relay1 = 2; //VALV1

int relay2 = 3; //VALV2

int relay3 = 4; //VALV3

int relay4 = 5; //POMPA

int level;

long perkalian, perkalian2;

int data_turbi, data_turbi2;

double voltTurbi, voltTurbi2;

float hasilKeruh, hasilKeruh2; // double

float turbiVal, turbiVal2;

unsigned long waktu_terakhir = 0;

int waktu_delay = 1000;
```

```
unsigned long waktu_terakhir2 = 0;
int waktu_delay2 = 2000;
void setup() {
  Serial.begin(115200);
  Serial2.begin(115200);
  Serial3.begin(115200);
  pinMode(trig, OUTPUT);
  pinMode(echo, INPUT);
  pinMode(relay1, OUTPUT);
  pinMode(relay2, OUTPUT);
  pinMode(relay3, OUTPUT);
  pinMode(relay4, OUTPUT);
  pinMode(turbi_pin, INPUT);
  pinMode(turbi_pin2, INPUT);
}
void loop() {
  if (Serial3.available()) {
    char Data = Serial3.read();
    Serial.println(Data);
    switch (Data) {
      case 'A':
        counter = 0;
    }
  }
}
```

```

        break;
case'B':
    counter = 1;
    break;
}
if (counter == 0)
{
    Serial2.print("t0.txt=");
    Serial2.print("\n");
    Serial2.print("filter");
    Serial2.write(0xff);
    Serial2.write(0xff);
    Serial2.write(0xff);

    Serial2.print("t0.txt=\n");
    Serial2.print("otomatis");
    Serial2.write(0xff);
    Serial2.write(0xff);
    Serial2.write(0xff);
    Serial.println("mode otomatis");
    digitalWrite(relay1, HIGH);
    digitalWrite(relay2, LOW);

```

```
digitalWrite(relay3, LOW);  
    }  
}  
else if (counter == 1)  
{  
    Serial.println("mode manual");  
  
    Serial2.print("p1.pic=\");  
    Serial2.print("\");  
    Serial2.write(0xff);  
    Serial2.write(0xff);  
    Serial2.write(0xff);  
  
    Serial2.print("p3.pic=\");  
    Serial2.print("\");  
    Serial2.write(0xff);  
    Serial2.write(0xff);  
    Serial2.write(0xff);  
  
    Serial2.print("p9.pic=\");  
    Serial2.print("\");  
    Serial2.write(0xff);
```

```
Serial2.write(0xff);  
Serial2.write(0xff);  
Serial2.print("p10.pic=\");  
Serial2.print("\");  
Serial2.write(0xff);  
Serial2.write(0xff);  
Serial2.write(0xff);
```

```
Serial2.print("p11.pic=\");  
Serial2.print("\");  
Serial2.write(0xff);  
Serial2.write(0xff);  
Serial2.write(0xff);
```

```
Serial2.print("p12.pic=\");  
Serial2.print("\");  
Serial2.write(0xff);  
Serial2.write(0xff);  
Serial2.write(0xff);
```

```
Serial2.print("p13.pic=\");  
Serial2.print("\");
```

```
Serial2.write(0xff);
```

```
Serial2.write(0xff);
```

```
Serial2.write(0xff);
```

```
Serial2.print("p15.pic=\");
```

```
Serial2.print("\");
```

```
Serial2.write(0xff);
```

```
Serial2.write(0xff);
```

```
Serial2.write(0xff);
```

```
Serial2.print("p18.pic=\");
```

```
Serial2.print("\");
```

```
Serial2.write(0xff);
```

```
Serial2.write(0xff);
```

```
Serial2.write(0xff);
```

```
Serial2.print("t6.txt=\");
```

```
Serial2.print("manual");
```

```
Serial2.write(0xff);
```

```
Serial2.write(0xff);
```

```
Serial2.write(0xff);
```

```
if (Data == 'C') {  
    Serial.println("VALVE 1 ON");  
    digitalWrite(relay1, HIGH);  
}  
else if (Data == 'D') {  
    Serial.println("VALVE 1 OFF");  
    digitalWrite(relay1, LOW);  
}  
else if (Data == 'E') {  
    digitalWrite(relay2, HIGH);  
}  
else if (Data == 'F') {  
    digitalWrite(relay2, LOW);  
}  
else if (Data == 'G') {  
    digitalWrite(relay3, HIGH);  
}  
else if (Data == 'H') {  
    digitalWrite(relay3, LOW);  
}  
else if (Data == 'I') {  
    digitalWrite(relay4, HIGH);
```

```

}
else if (Data == 'J') {
    digitalWrite(relay4, LOW);
}
else if (Data == 'K') {
    digitalWrite(relay1, LOW);
    digitalWrite(relay2, HIGH);
    digitalWrite(relay3, HIGH);
}
else if (Data == 'L') {
    digitalWrite(relay1, HIGH);
    digitalWrite(relay2, LOW);
    digitalWrite(relay3, LOW);
}
}
}
}
}

```

Program Sensor Turbidity 1

```

void turbidity()
{
    data_turbi = analogRead(turbi_pin);//baca data turbi dari pin analog
    voltTurbi = data_turbi * (5.0 / 1023);//rubah data adc ke tegangan 0-
5volt

```



```
    hasilKeruh = 100.00 - (voltTurbi / 4.25) * 100.00;//kalukulasi tegangan  
menjadi ntu
```

```
    perkalian = hasilKeruh * 100;
```

```
    //Serial.println(hasilKeruh);
```

```
    Serial2.print("x1.val=");
```

```
    Serial2.print(perkalian);
```

```
    Serial2.write(0xff);
```

```
    Serial2.write(0xff);
```

```
    Serial2.write(0xff);
```

```
}
```

(Program Sensor Turbidity 2)

```
void turbidity2()
```

```
{
```

```
    data_turbi2 = analogRead(turbi_pin2);//baca data turbi dari pin analog
```

```
    voltTurbi2 = data_turbi2 * (5.0 / 1023);//rubah data adc ke tegangan 0-  
5volt
```

```
    hasilKeruh2 = 100.00 - (voltTurbi2 / 4.25) * 100.00;//kalukulasi  
tegangan menjadi ntu
```

```
    perkalian2 = hasilKeruh2 * 100;
```

```
    Serial.println(hasilKeruh2);
```

```
    Serial2.print("x2.val=");
```

```
    Serial2.print(perkalian2);
```

```
    Serial2.write(0xff);
```

```

Serial2.write(0xff);
Serial2.write(0xff);
}
(Program Sensor Ultrasonik)
void ultrasonik()
{
  digitalWrite(trig, LOW);
  delayMicroseconds(10);
  digitalWrite(trig, HIGH);
  delayMicroseconds(10);
  digitalWrite(trig, LOW);
  delayMicroseconds(10);
  durasi = pulseIn(echo, HIGH); // menerima suara ultrasonic
  jarak = (durasi / 2) / 29.1; // mengubah durasi menjadi jarak (cm)
  level = map(jarak, 0, 31, 100, 0);
  Serial.print("jarak=");
  Serial.println(jarak);
  Serial2.print("n0.val=");
  Serial2.print(level);
  Serial2.write(0xff);
  Serial2.write(0xff);
  Serial2.write(0xff)

```

```
Serial2.print("j0.val=");  
Serial2.print(level);  
Serial2.write(0xff);  
Serial2.write(0xff);  
Serial2.write(0xff);  
}
```

LAMPIRAN B

Gambar Hasil Alat :



Gambar Alat tampak Depan



Gambar Alat tampak Atas

BIODATA PENULIS



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Riwayat Pendidikan

- SD Negeri 03 Kedungwringin Tahun 2007-2014
- SMP Negeri 2 Sempor Tahun 2014-2017
- SMK Wongsorejo Gombong Tahun 2017-2020
Jurusan Teknik Instalasi Tenaga Listrik
- Politeknik Negeri Cilacap Tahun 2019-2022
Prodi D3 Teknik Elektronika

Penulis telah mengikuti seminar proposal pada tanggal 17 Juni 2022 sebagai salah satu persyaratan untuk memperoleh gelar Ahli Madya (A.Md)