LAMPIRAN

1. Program pengukuran debit air sebelum kalibrasi

```
// Call Libary

#include <ESP8266WiFi.h>

#include <ESP8266WiFiMulti.h>


ESP8266WiFiMulti WiFiMulti; // deklarasi global variabel


byte indikator = 13;


byte sensorInt = 0;

byte flowsensor = 2;


float konstanta = 8; //konstanta flow meter


volatile byte pulseCount;


float debit;

unsigned int flowmlt;

unsigned long totalmlt;


unsigned long oldTime;

int linex = 0;


String kondisi;
```

```arduino
// declare server

const uint16_t port = 80;

const char * host = "192.168.43.200"; // ip laptop/server


// the setup function runs once when you press reset or power the board

void setup() {

  // Inisialisasi port serial

  Serial.begin(9600);

  pinMode(flowsensor, INPUT);

  digitalWrite(flowsensor, HIGH);


  pulseCount = 0;

  debit = 0.0;

  flowmlt = 0;

  totalmlt = 0;

  oldTime = 0;


  // We start by connecting to a WiFi network

  WiFi.mode(WIFI_STA);

  WiFiMulti.addAP("takicars", "04051990");


  Serial.println("Connecting to WiFi");

  while(WiFiMulti.run() != WL_CONNECTED) {

    Serial.print(".");
```

```
    delay(500);

  }

  Serial.println("\r");

  Serial.println("WiFi connected");

  Serial.println("IP address: ");

  Serial.println(WiFi.localIP());

  Serial.println("\r");

  delay(500);


  attachInterrupt(sensorInt, pulseCounter, FALLING);


}


// the loop function runs over and over again forever

void loop() {


  // ambil status recording

  WiFiClient client; // open koneksi client

  // connecting to servre, interupt jika disconnect

  if (!client.connect(host, port)) {

    Serial.println("connection web insert failed");

    Serial.println("wait 5 sec...");

    delay(5000);

    return;

  }
```

```
client.print("GET /skripsi/backend/getstatus.php");

client.println(" HTTP/1.1");

client.println("Host: 192.168.43.200 \r\n");

client.println("Connection: close");

client.println("");

client.stop();


String req = client.readStringUntil('zzz');

int bodystart = req.indexOf('<data>')+1;

int bodyfinish = req.length()-7;

String tmp = req.substring(bodystart,bodyfinish);

int x = tmp.indexOf('#');

String kondisi = tmp.substring(0,x);

String rst = tmp.substring(x+1,x+2);


if( kondisi == "start" ){


  readsensor();


 // kirim data ke server

 WiFiClient client; // open koneksi client

 // connecting to servre, interupt jika disconnect

 if (!client.connect(host, port)) {

   Serial.println("connection web insert failed");
```

```
    Serial.println("wait 5 sec...");

    delay(5000);

    return;

  }


  client.print("GET /skripsi/backend/insertdata.php");

  client.print("?debit=");

  client.print(debit, DEC);

  client.print("&total=");

  client.print(totalmlt, DEC);


  client.println(" HTTP/1.1");

  client.println("Host: 192.168.43.200 \r\n");

  client.println("Connection: close");

  client.println("");

  client.stop();


  if( rst == "1" ){

   totalmlt = 0;

  }


}else{

 //digitalWrite(13, LOW);

}
```

```arduino
}

void readsensor(){


  if((millis() - oldTime) > 1000) {


    detachInterrupt(sensorInt);

    debit = ((1000.0 / (millis() - oldTime)) * pulseCount) / konstanta;

    oldTime = millis();

    flowmlt = (debit / 60) * 1000;

    totalmlt += flowmlt;


    unsigned int frac;


    linex += 1;

    Serial.print(linex);

    Serial.print("\t");


    Serial.print("Debit air: ");

    Serial.print(int(debit));

    Serial.print("L/min");

    Serial.print("\t");


    Serial.print("Volume: ");
```

```
    Serial.print(totalmlt);

    Serial.println("mL");



    pulseCount = 0;



    attachInterrupt(sensorInt, pulseCounter, FALLING);



  }
}



void pulseCounter(){
  // Increment the pulse counter
  pulseCount++;
}
```

2.   Program pengukuran debit air setelah kalibrasi

```
// Call Libary

#include <ESP8266WiFi.h>

#include <ESP8266WiFiMulti.h>


ESP8266WiFiMulti WiFiMulti; // deklarasi global variabel


byte indikator = 13;


byte sensorInt = 0;

byte flowsensor = 2;



volatile byte pulseCount;


float debit;

unsigned int flowmlt;

unsigned long totalmlt;


unsigned long oldTime;

int linex = 0;


String kondisi;


// declare server
```

```cpp
const uint16_t port = 80;

const char * host = "192.168.43.200"; // ip laptop/server


// the setup function runs once when you press reset or power the board
void setup() {
 // Inisialisasi port serial
 Serial.begin(9600);

 pinMode(flowsensor, INPUT);

 digitalWrite(flowsensor, HIGH);


 pulseCount = 0;

 debit = 0.0;

 flowmlt = 0;

 totalmlt = 0;

 oldTime = 0;


 // We start by connecting to a WiFi network
 WiFi.mode(WIFI_STA);

 WiFiMulti.addAP("takicars", "04051990");


 Serial.println("Connecting to WiFi");

 while(WiFiMulti.run() != WL_CONNECTED) {

   Serial.print(".");

   delay(500);

 }
```

```
  Serial.println("\r");

  Serial.println("WiFi connected");

  Serial.println("IP address: ");

  Serial.println(WiFi.localIP());

  Serial.println("\r");

  delay(500);


  attachInterrupt(sensorInt, pulseCounter, FALLING);


}


// the loop function runs over and over again forever

void loop() {


  // ambil status recording

  WiFiClient client; // open koneksi client

  // connecting to servre, interupt jika disconnect

  if (!client.connect(host, port)) {

    Serial.println("connection web insert failed");

    Serial.println("wait 5 sec...");

    delay(5000);

    return;

  }


  client.print("GET /skripsi/backend/getstatus.php");
```

```
client.println(" HTTP/1.1");

client.println("Host: 192.168.43.200 \r\n");

client.println("Connection: close");

client.println("");

client.stop();


String req = client.readStringUntil('zzz');

int bodystart = req.indexOf('<data>')+1;

int bodyfinish = req.length()-7;

String tmp = req.substring(bodystart,bodyfinish);

int x = tmp.indexOf('#');

String kondisi = tmp.substring(0,x);

String rst = tmp.substring(x+1,x+2);


if( kondisi == "start" ){


  readsensor();


 // kirim data ke server
 WiFiClient client; // open koneksi client
 // connecting to servre, interupt jika disconnect
 if (!client.connect(host, port)) {
    Serial.println("connection web insert failed");
    Serial.println("wait 5 sec...");
    delay(5000);
```

```
      return;

    }


    client.print("GET /skripsi/backend/insertdata.php");

    client.print("?debit=");

    client.print(float(debit), DEC);

    client.print("&total=");

    client.print(totalmlt, DEC);


    client.println(" HTTP/1.1");

    client.println("Host: 192.168.43.200 \r\n");

    client.println("Connection: close");

    client.println("");

    client.stop();


    if( rst == "1" ){

      totalmlt = 0;

    }


  }else{

    //digitalWrite(13, LOW);

  }


}
```

```arduino
void readsensor(){


  if((millis() - oldTime) > 1000) {


    detachInterrupt(sensorInt);

    debit = ((1000.0 / (millis() - oldTime)) * pulseCount) / konstanta;

    oldTime = millis();

    flowmlt = (debit / 60) * 1000*0.831;

    totalmlt += flowmlt;


    unsigned int frac;


    linex += 1;

    Serial.print(linex);

    Serial.print("\t");


    Serial.print("Debit air: ");

    Serial.print(float(debit));

    Serial.print("L/min");

    Serial.print("\t");


    Serial.print("Volume: ");

    Serial.print(totalmlt);

    Serial.println("mL");
```

```
    pulseCount = 0;


    attachInterrupt(sensorInt, pulseCounter, FALLING);


  }
}



void pulseCounter(){
 // Increment the pulse counter
 pulseCount++;
}


int genap(int n) {
 if(n % 2 == 0) {
   return 1;
 }else {
   return 0;
 }
}
```
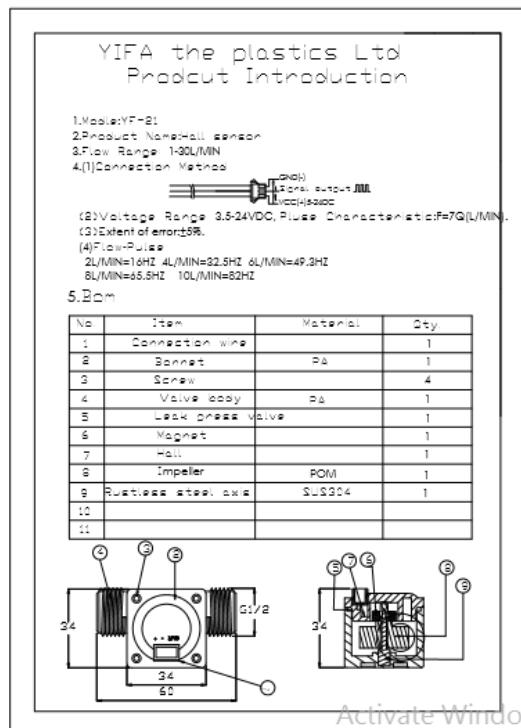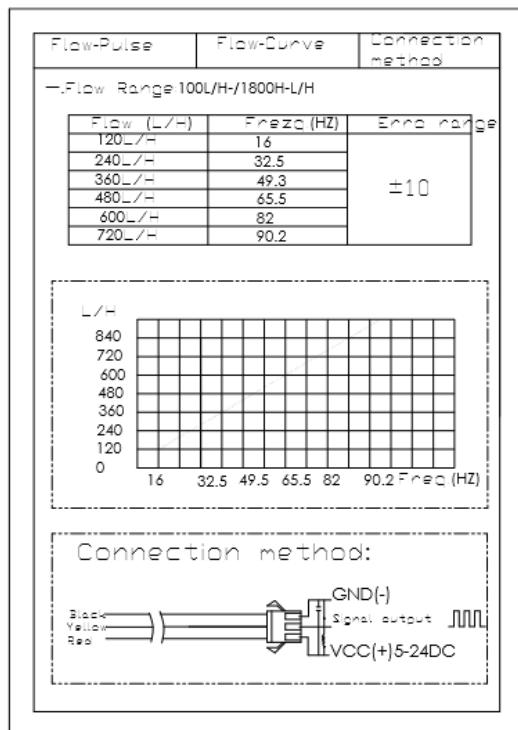
3. Datasheet waterflow sensor yf-s201

Flow-Pulse	Flow-Curve	Connection method

一.Flow Range 100L/H-/1800H-L/H

Flow (L/H)	Frezq (HZ)	Error range
120L/H	16	
240L/H	32.5	
360L/H	49.3	±10
480L/H	65.5	
600L/H	82	
720L/H	90.2	

L/H

840
720
600
480
360
240
120
0
        16 32.5 49.5 65.5 82 90.2 Freq (HZ)

Connection method:

GND(-)
Black
Yellow   Signal output
Red
VCC(+)5-24DC

YIFA the plastics Ltd
Prodcut Introduction

1.Mobile:YF-21
2.Product Name:Hall sensor
3.Flow Range 1-30L/MIN
4.(1)Connection Method

GND(-)
Signal output
VCC(+)5-24DC

(2)Voltage Range 3.5-24VDC, Pluse Characteristic:F=7Q(L/MIN).
(3)Extent of error:±5%.
(4)Flow-Pulse
  2L/MIN=16HZ 4L/MIN=32.5HZ 6L/MIN=49.3HZ
  8L/MIN=65.5HZ   10L/MIN=82HZ

5.Bom

No	Item	Material	Qty.
1	Connection wire		1
2	Bonnet	PA	1
3	Screw		4
4	Valve body	PA	1
5	Leak press valve		1
6	Magnet		1
7	Hall		1
8	Impeller	POM	1
9	Rustless steel axis	SUS304	1
10			
11			