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LAMPIRAN A

Program Mikrokontroler Arduino Uno

```
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
int encoder_pin = 2; // The pin the encoder is connected
unsigned int rpm; // rpm reading
volatile byte pulses; // number of pulses
unsigned long timeold;
unsigned int pulsesperturn = 1;
int analogPin= A0; //pin arduino yang terhubung
float Vmodul = 0.0;
float R1 = 30000.0; // Resistor 30k
float R2 = 7500.0; // Resistor 7500 ohm
int value = 0;
float HasilTegangan = 0.0;
const int pinADC =A1;
int sensitivitas = 100;
int nilaiadc= 00;
int teganganoffset = 2500;
double tegangan = 00;
double HasilArus = 00;
float HasilDaya = 0.0;
LiquidCrystal_I2C lcd(0x27,16,2); //

void counter()
{
    pulses++;
}
void setup()
{
    lcd.init();
    lcd.backlight();
    lcd.setCursor(3,0);
    lcd.print("PROJECT TA");
    lcd.setCursor(5,1);
```

```

lcd.print("ISMAIL");
delay (1000);
Serial.begin(9600);
pinMode(encoder_pin, INPUT);
pinMode(analogPin, INPUT);
attachInterrupt(0, counter, FALLING);
pulses = 0;
rpm = 0;
timeold = 0;
}
void data_Cahaya() {
}
void data_Tegangan() {
value = analogRead (analogPin);
Vmodul= (value*5.0)/1024.0;
HasilTegangan = Vmodul/ (R2/(R1+R2));
}
void data_Arus(){
nilaiadc = analogRead(pinADC);
tegangan= (nilaiadc/1024.0) * 5000;
HasilArus =((tegangan-teganganoffset) / sensitivitas);
}
void data_Daya () {
HasilDaya = HasilTegangan*HasilArus;
}
void loop()
{
if (millis() - timeold >= 1000){
detachInterrupt(0);
rpm = (32 * 10000 / pulsesperturn )/ (millis() - timeold)* pulses;
timeold = millis();
pulses = 0;
Serial.print("RPM=");
Serial.println(rpm,DEC);
lcd.clear();
lcd.setCursor(8,0);
}
}

```

```

lcd.print("RPM=");
lcd.print(rpm,DEC);
lcd.setCursor(0,1);
attachInterrupt(0, counter, FALLING);

data_Tegangan();
//lcd.print ("V= ");
//lcd.print (Vmodul,2);
//lcd.print(" Volt");
lcd.setCursor(0, 0);
lcd.print ("V=");
lcd.print(HasilTegangan,1);
lcd.print ("V");

data_Arus();
//Serial.print ("Nilai ADC yang terbaca+ ");
//Serial.print(nilaiadc);
//Serial.print("\t tegangan (mV)= ");
//Serial.print (tegangan,3);
Serial.print("I=");
Serial.println (HasilArus,2);
lcd.setCursor(0, 1 );
lcd.print("I=");
lcd.print (HasilArus,2);
lcd.print ("A");

data_Daya();
Serial.print("\t W=");
Serial.println (HasilDaya,3);
Serial.print ("W");
lcd.setCursor(8, 1);
lcd.print ("W=");
lcd.print (HasilDaya,3);
lcd.print ( "W");
}
}

```


LAMPIRAN B
Gambar Mekanik Mini Turbin Jenis Pelton



LAMPIRAN C
Gambar Proses Pengambilan Data

