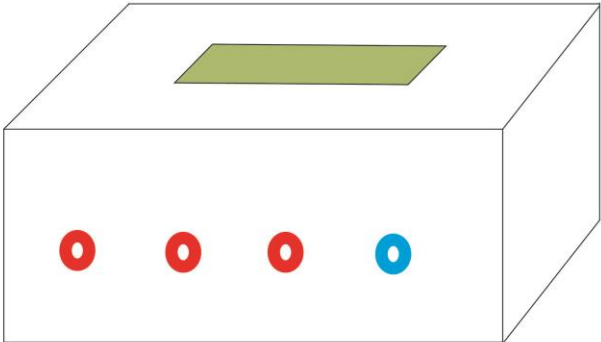
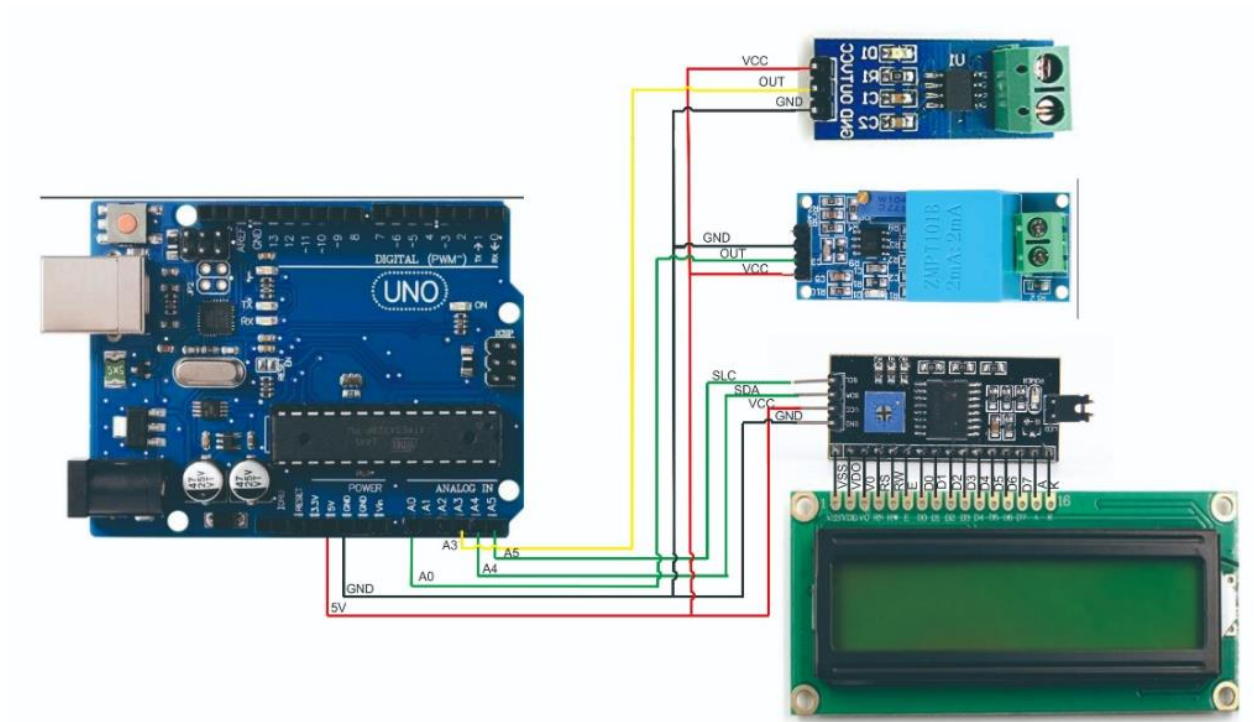


Lampiran 1. Desain Sistem Monitoring *Picohydro Portable* Berbasis Arduino

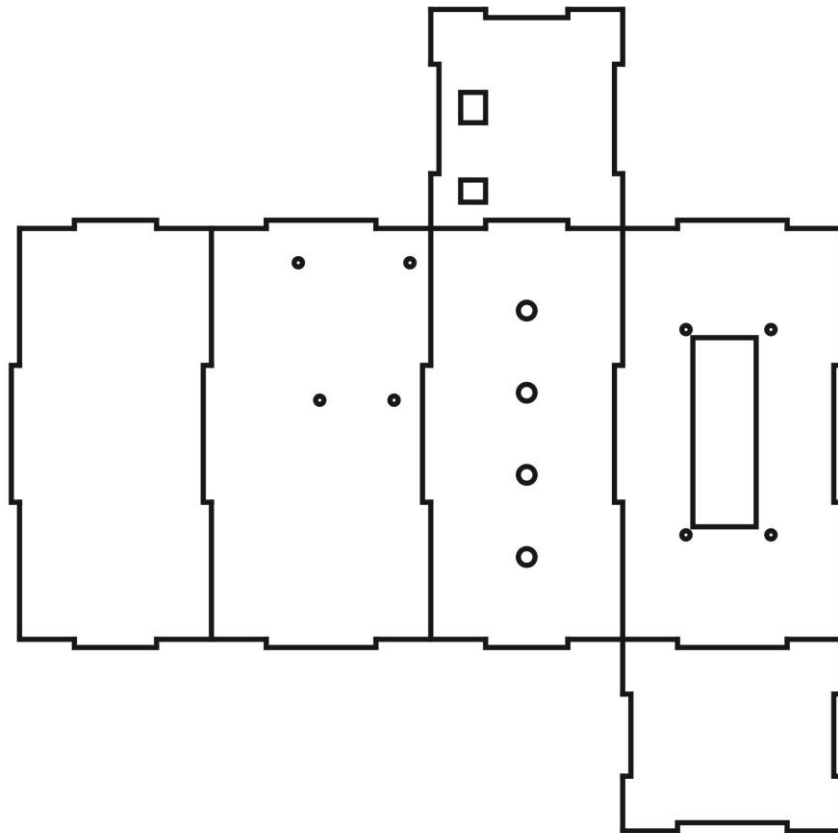


Lampiran 2. Skematik Rangkaian Sistem Monitoring *Picohydro Portable*

Berbasis Arduino



Lampiran 3. Desain Akrilik Sistem Monitoring *Picohydro Portable* Berbasis Arduino



Lampiran 4. Produk Jadi Sistem Monitoring *Picohydro Portable* Berbasis
Arduino



Lampiran 5. Program Sistem Monitoring *Picohydro Portable* Berbasis Arduino

```
#include <LiquidCrystal_I2C.h>
#include <Wire.h>
#include "EmonLib.h"
#define VOLT_CAL 500.4

EnergyMonitor emon1;

const int sensorIn = A3;
int mVperAmp = 185; // sensitivitas pada sensor arus

LiquidCrystal_I2C lcd(0x27, 16, 2);

double Voltage = 0;
double VRMS = 0;
double AmpRMS = 0;

void setup(){
  Serial.begin(9600);
  lcd.begin();

  emon1.voltage(1, VOLT_CAL, 1.7);
}

void loop(){

  //Pembacaan Sensor Arus
  Voltage = getVPP();
  VRMS = (Voltage/2.0) *0.707;
  AmpRMS = (VRMS * 1000000)/mVperAmp;

  if(AmpRMS<1)
  {AmpRMS=0;}

  //Pembacaan Sensor Tegangan
  emon1.calcVI(20,2000);
  float Veff = emon1.Vrms;
  {
  if(emon1.Vrms < 1)
  {Veff = 0;}
  else
```

```

        {Veff = emon1.Vrms;}
    }
    lcd.setCursor (0,0); //baris pertama pada LCD
    lcd.print("Arus:");
    lcd.print(AmpRMS); //menampilkan arus pada LCD
    lcd.print("mA");
    lcd.setCursor (0,1); //baris kedua pada LCD
    lcd.print("Tegangan:");
    lcd.print(Veff); //menampilkan tegangan pada LCD
    lcd.print("V");

}

float getVPP()

{
    float result;

    int readValue;        //nilai yang terbaca oleh sensor
    int maxValue = 0;     // nilai maksimal
    int minValue = 1024; // nilai minimal

    uint32_t start_time = millis();
    while((millis()-start_time)< 1000)//contoh untuk 1 sec
    {
        readValue = analogRead(sensorIn);
        if (readValue > maxValue)
        {
            maxValue = readValue;
        }
        if (readValue < minValue)
        {
            minValue = readValue;
        }

        result = ((maxValue - minValue) * 5.0)/1024.0;
    }
    return result;
}

```