Interfacing Sensor Arus

Deskripsi :

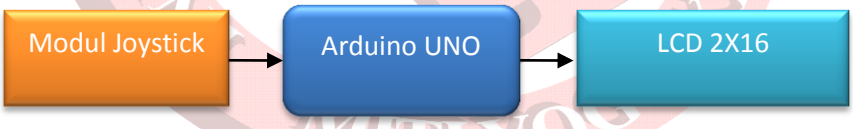
Arduinon UNO membaca output sensor Arus, hasil pembacaannya ditampilkan pada LCD 2x16.

Kebutuhan Hardware :

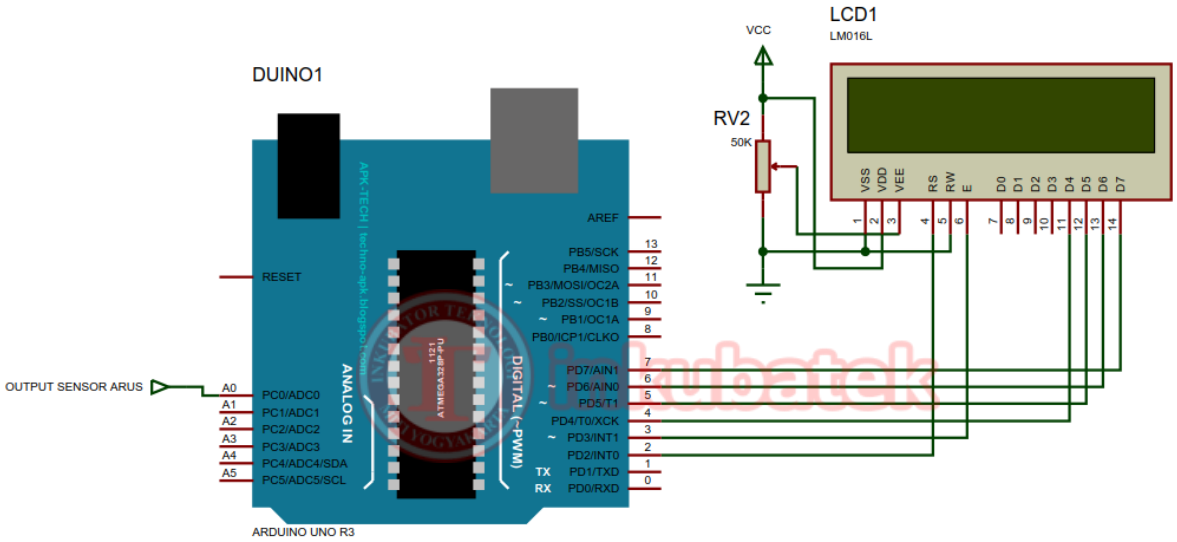
- Current Sensor ACS712
- Modul LCD 2x16
- Modul Arduino UNO
- Power supply +9Volt

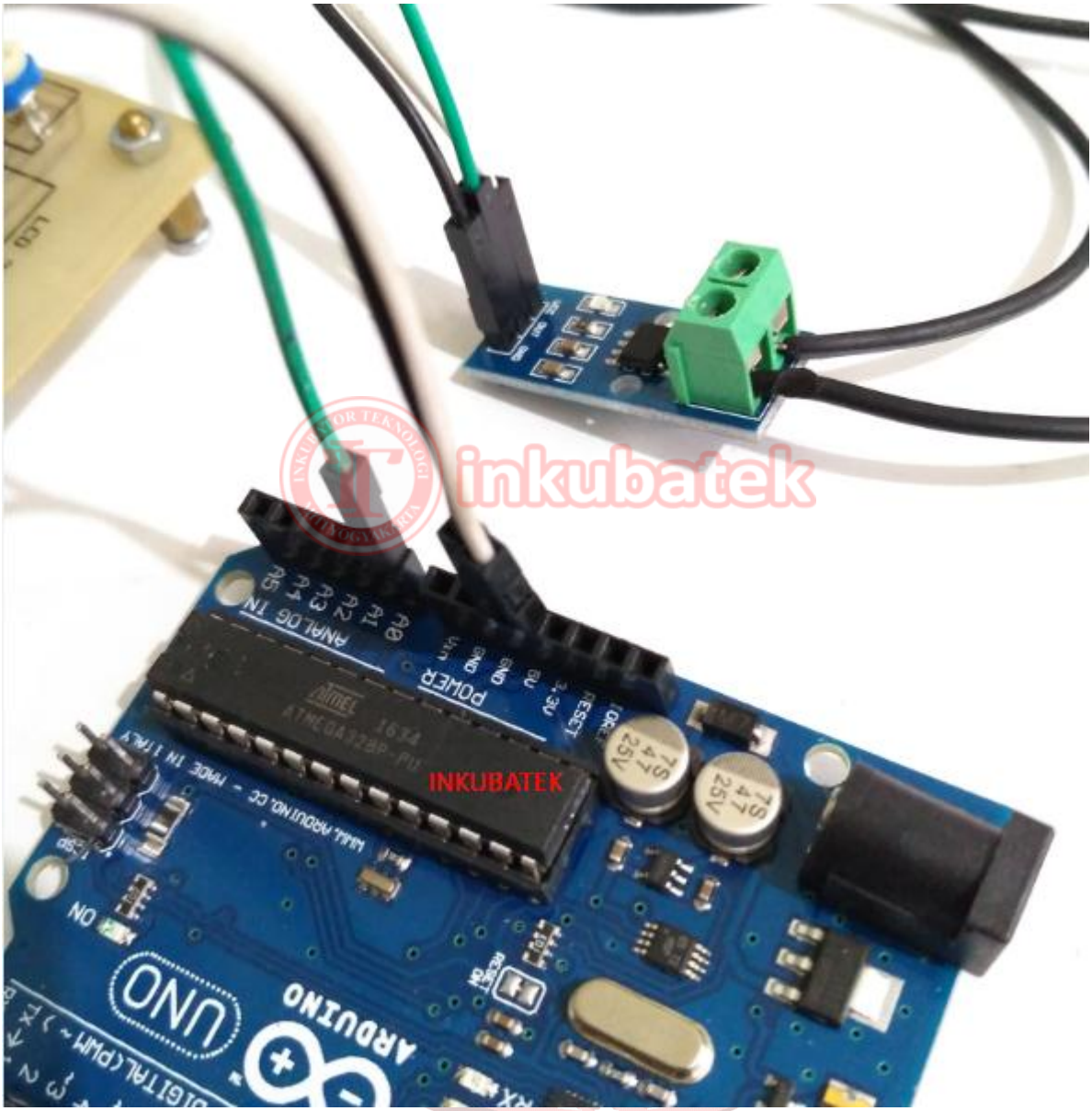
Sensor Arus

Diagram Blok:



Schematics





Koneksi Arduino UNO dengan LCD:

Pin ARDUINO	LCD
2	RS
3	EN
4	D4
5	D5
6	D6
7	D7

Koneksi Modul Sensor Arus:

Modul ACS712	Pin ARDUINO
VCC	+5V
OUT	A0
GND	GND

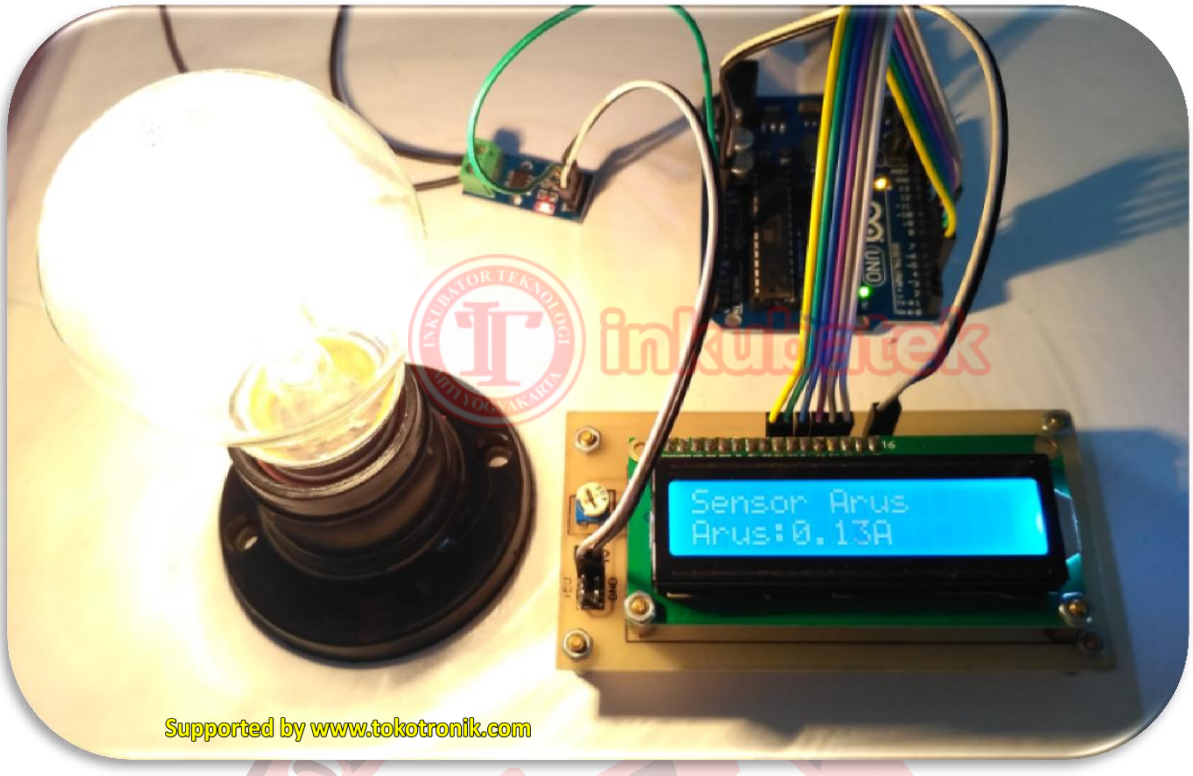
Source Code/Sketch :

```
/************************************
 * Program : Project 35.  Interfacing Sensor Arus
 * Input   : Sensor Arus ACS712
 * Output  : LCD 2x16
 * 125 Proyek Arduino Inkubatek
 * www.tokotronik.com
 * ************************************/
#include <LiquidCrystal.h>
const int currentPin = 0;
const unsigned long sampleTime = 100000UL;
const unsigned long numSamples = 250UL;
const unsigned long sampleInterval = sampleTime/numSamples;
const int adc_zero = 510;
```

```
LiquidCrystal lcd(2, 3, 4, 5, 6, 7);

void setup()
{
 Serial.begin(9600);
  lcd.begin(16, 2);
  lcd.clear();
  lcd.print("Sensor Arus");
  lcd.setCursor(0,1);
  lcd.print("Arus:");
  delay(1000);
}

void loop()
{
 unsigned long currentAcc = 0;
 unsigned int count = 0;
 unsigned long prevMicros = micros() - sampleInterval ;
 while (count < numSamples)
 {
   if (micros() - prevMicros >= sampleInterval)
   {
     int adc_raw = analogRead(currentPin) - adc_zero;
     currentAcc += (unsigned long)(adc_raw * adc_raw);
     ++count;
     prevMicros += sampleInterval;
   }
 }

 float rms = sqrt((float)currentAcc/(float)numSamples) * (75.7576 / 1024.0);
 //Serial.println(rms);
  lcd.setCursor(5,1);
  lcd.print(rms);
  lcd.print("A          ");

}
```

Jalannya Alat :

LCD menampilkan nilai Arus RMS dari beban .


Sensor Arus
Arus:0.13A
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