LCD Display ⇒ Contrast Problem — I^2C Adapter.

↓

Solved by Vo pin goes to negative when Vdd = 3.3V
Vdd = 5V & adjust the potentiometer on the back

Vss → GND
Vdd → 5V
Vo → Pin 22 contrast adjustment (9) 8.2 mV → 0V
Rs → 23 register select high (12) 4.08 mV 4.44 V (3.24) Adapter
R/w → GND
E → 24 enable signal (11) 12 pmV 7 p 8 mV
DB4 → 25
DB5 → 26
DB6 → 27
DB7 → 28
} Bus (5) (4) (3) (2)

Mega – 4.86V (5V output) 4.7V.

Mega2560 – Cannot use AnalogWriteResolution ( )
pin, bits

→ 256 – 8bits PWM output. 4

default freq : 490 Hz
Pin 12 & 4 : 980Hz

Pin
timer 0 (13, 4) → 980 Hz
timer 1 (11, 12)
timer 2 (9, 10)
timer 3 (5, 3, 2)
timer 4 (8, 7, 6)
} 490 Hz

Timer 1 library 1024

$\frac{4.8}{1024}$ → 4.69 mV

```
#include <Wire.h>
#include <LiquidCrystal_I2C.h>      //Download it here: https://www.electronoobs.com/eng_arduino_liq_crystal.php
//////////////////////////////Library for ADS1115 ADC//////////////////////////////////
#include <Adafruit_ADS1015.h>       //Download here: https://www.electronoobs.com/eng_arduino_Adafruit_ADS1015.php
Adafruit_ADS1115 ads(0x48);         //Define i2c address
/////////////////////////////////////////////////////////////////////////////////////////


// Sometimes the address is 0x27 or 0x3f (try both)
LiquidCrystal_I2C lcd(0x27, 16, 2); //Address, columns, rows

const float multiplier = 0.0001875; //In order to pass from 16bits to real value voltage
int Buzzer = 3;                     //Pin for a buzzer (not yet used)
float offset = 0.004;               //Constant offset (in A) that the read has (yours might be different)

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

  pinMode(Buzzer,OUTPUT);
  digitalWrite(Buzzer,LOW);

  ads.begin();
  delay(10);

  lcd.init();
  lcd.backlight();
  lcd.clear();
  lcd.setCursor(0,0);
  lcd.print("  ELECTRONOOBS  ");
  analogWrite(Buzzer,200);
  delay(100);
  analogWrite(Buzzer,LOW);
  delay(300);
  lcd.setCursor(0,1);
  lcd.print(" CONSTANT  LOAD ");
  delay(1500);
}

void loop() {
  float set_val, real_val;
  real_val = ads.readADC_Differential_0_1();      //Read DIFFERENTIAL voltage between ADC0 and ADC1
  set_val  = ads.readADC_SingleEnded(2);          //Read voltage on potentiometer (this will be our setpoint)

  set_val = (set_val * multiplier) - offset;      //Pass to real voltage and substract offset
  real_val = real_val * multiplier - offset;

  //If we have negative value, we stay at 0.
  if(real_val < 0)
  { real_val = 0;   }
  if(set_val < 0)
  { set_val  = 0;   }

  //Print data on LCD
  //lcd.clear();
  lcd.setCursor(0,0);
  lcd.print("Set:      ");
  lcd.print(set_val,3);
  lcd.print(" A");
  lcd.setCursor(0,1);
  lcd.print("Current: ");
  lcd.print(real_val,3);
  lcd.print(" A");
  delay(100);                                     //Small delay
}
```