```
const int Pressure_sensor = 5;

#include <LiquidCrystal.h>
LiquidCrystal lcd( 5,6,7,10,11,12,13 );

#define PIN_A 2
#define PIN_B 3
const int8_t ENCODER_TABLE[] =
{0,-1,1,0,1,0,0,-1,-1,0,0,1,0,1,-1,0};
volatile bool StatePinA = 1;
volatile bool StatePinB = 1;
volatile uint8_t State = 0;
volatile long Count = 0;

#define BUTTON 4
int reset = 0;

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

  lcd.begin(16, 2);

  pinMode(8, OUTPUT);
  pinMode(9, OUTPUT);
  pinMode(BUTTON, INPUT);

  analogReference(EXTERNAL);

  pinMode(PIN_A, INPUT_PULLUP);
  pinMode(PIN_B, INPUT_PULLUP);
  attachInterrupt(0, ChangePinAB, CHANGE);
  attachInterrupt(1, ChangePinAB, CHANGE);
}

void loop() {

 int sum_x = 0;
 for (int i = 0; i < 50; i++) {
   int x = analogRead( Pressure_sensor );
   sum_x = sum_x + x;
   delay(2);
  }

  int average_x = sum_x / 50;
```

```
 int PV = 2.40 * average_x - 483;
 Serial.println( PV );

 int SV = 1013-Count;

 reset = digitalRead(BUTTON);

 if (reset == HIGH) {
   Count = 0;
 }

 if (SV > 1013) {
   Count = 0;
 }

 if (SV < 0) {
   Count = 1013;
 }

 lcd.clear();
 lcd.setCursor(0,0);
 lcd.print ("PV:");
 lcd.print (" ");
 lcd.print( PV );
 lcd.print (" ");
 lcd.print ("mbar");

 lcd.setCursor(0,1);
 lcd.print ("SV:");
 lcd.print (" ");
 lcd.print( SV );
 lcd.print (" ");
 lcd.print ( "mbar");

delay(50);

 if (PV > SV+10){
 digitalWrite(8, HIGH);
 digitalWrite(9, LOW);
 }

 if (PV < SV-5){
 digitalWrite(8, LOW);
```

```
  digitalWrite(9, LOW);
  }

  if (PV < SV-20){
  digitalWrite(9, HIGH);
  }

   if (PV > SV-20){
  digitalWrite(9, LOW);
  }
}

void ChangePinAB(){
  StatePinA = PIND & 0b00000100;
  StatePinB = PIND & 0b00001000;
  State = (State<<1) + StatePinA;
  State = (State<<1) + StatePinB;
  State = State & 0b00001111;
  Count += ENCODER_TABLE[State];
}
```