

Supplementary information: Code to upload to Attiny85

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#include <TinyWireM.h>
#include <Tiny4kOLED.h>
#include <avr/io.h>
#include <avr/interrupt.h>
#include <avr/sleep.h>
#ifndef cbi
#define cbi(sfr, bit) (_SFR_BYTE(sfr) &= ~_BV(bit))
#endif
#ifndef sbi
#define sbi(sfr, bit) (_SFR_BYTE(sfr) |= _BV(bit))
#endif
volatile int revs = 0;
volatile int cheddar = 0;
unsigned long bit;
void setup() {
    pinMode(0,OUTPUT); // Sets pin 0 as an output for the pin-change interrupt
    pinMode(1,INPUT);
    digitalWrite(1, LOW);
    pinMode(3,INPUT);
    digitalWrite(3, LOW);
    pinMode(2,OUTPUT); //SCL for OLED
    pinMode(4,INPUT); // removing floating variables by setting unused pins to
input to save power
    pinMode(5,INPUT);
    sbi(GIMSK,PCIE); // turns on pin change interrupt
    sbi(PCMSK,PCINT3); // defines pin 3 (IR Sensor) as affected by interrupt
    sbi(PCMSK,PCINT1); // defines pin 1 (Hall-Effect Sensor) as affected by
interrupt
    oled.begin();
    oled.clear();
    oled.setFont(FONT8X16);
}
void loop() { //Main loop checks if IR sensor is triggered to either increase
or display count
bit=pulseIn(3,HIGH,50000UL);
if(bit<4000){
    revs++;
    if(revs>=20000){
        cheddar++; //if revolution number is at 10k, this variable goes up by 1
        revs=0; //Resets counter variable to 0
    }
}
if(bit>4000){
    oled.on();
    oled.clear();
    oled.print(long((revs)/2)); //Displays revoltutions <10k
    oled.setCursor(0, 2);
    oled.print(long(cheddar)); //Displays multiples of 10k below <10k count
    delay(4000);
}
digitalWrite(3,LOW);
system_sleep();
}
void system_sleep() {
    oled.off();
```

```
cbi(ADCSRA, ADEN); // turns ADC off
sleep_bod_disable();
set_sleep_mode(SLEEP_MODE_PWR_DOWN); // sets the sleep mode
sleep_mode(); // turns sleep mode on
sbi(ADCSRA,ADEN); // turns ADC back on
}
ISR(PCINT0_vect){//Occurs whenever the HE or IR sensors sense pin-change
}
```