#include "Dimmer.h"

#include <ArduinoJson.h>

#include "EmonLib.h"

#define mySerial Serial

long unsigned int previousMillis=0;

////////////json//////////////////

String rawTxt;

String powerJson;

unsigned int slider1=0;

unsigned int slider2=0;

unsigned int slider3=0;

bool button1 = false;

bool button2 = false;

bool button3 = false;

////////////Dimmer///////////////

Dimmer dimmers[] = {

Dimmer(4, DIMMER\_RAMP, .1),

Dimmer(5, DIMMER\_RAMP, .1),

Dimmer(6, DIMMER\_RAMP, .1),

};

EnergyMonitor emon;

void jsonParsing(){

StaticJsonBuffer<200> jsonBuffer;

JsonObject& sw = jsonBuffer.parseObject(rawTxt);

if (sw.success())

{

slider1=sw["S1"];

slider2=sw["S2"];

slider3=sw["S3"];

button1 = sw["B1"];

button2 = sw["B2"];

button3 = sw["B3"];

}

}

void jsonEncoding(){

StaticJsonBuffer<200> jsonBuffer;

JsonObject& power = jsonBuffer.createObject();

power["TruePower"]=emon.realPower;

power["ApparentPower"]=emon.apparentPower;

power["Frequency"]=50;

power["PowerFactor"]=emon.powerFactor;

power["Vrms"]=emon.Vrms;

power["Irms"]=emon.Irms;

if (millis()-previousMillis>1000){

power.printTo(mySerial);

mySerial.println();

previousMillis=millis();

}

}

void setup() {

emon.voltage(A1, 395, 1.7); // Voltage: input pin, calibration, phase\_shift

emon.current(A0, 3.75);

Serial.begin(38400);

while (!Serial) {

; // wait for serial port to connect. Needed for native USB port only

}

for(int i = 0; i < sizeof(dimmers) / sizeof(Dimmer); i++) {

dimmers[i].begin();

}

}

void loop() { // run over and over

emon.calcVI(50,20);

jsonEncoding();

if (mySerial.available()) {

rawTxt = mySerial.readStringUntil('\n');

//Serial.println(rawTxt);

jsonParsing();

}

if(button1) dimmers[0].set(slider1);

else dimmers[0].set(0);

if(button2) dimmers[1].set(slider2);

else dimmers[1].set(0);

if(button3) dimmers[2].set(slider3);

else dimmers[2].set(0);

}