

# CurrentSensor.h

## Description

CurrentSensor.h is a non-blocking library designed to be used with an ACS725 current sensor. It takes a pointer from the user to store current samples in a variable-length buffer and can compute RMS current.

## ACS725

Construct a new ACS725 object.

### Parameters

**sensorPin** Analog (ADC) pin that the ACS725 output is connected to

**buffer** Pointer to current sample buffer

**bufferLength** Number of samples stored in the buffer

### Return

None

## ~ACS725

Destroy the ACS725 object.

### Parameters

None

### Return

None

## begin

Begin using the ACS725 object. Sets the analog pin to input and sets the resolution of the ADC - all of the hardware functions required for this library. This function is to be ran in the setup() portion of the main .ino file.

## Parameters

None

## Return

None

## sample

Sample a reading from the ACS725 and store it to the buffer.

## Parameters

None

## Return

None

## getCurrentValues

Convert raw ADC values to usable current values.

## Parameters

**currentArray** Pointer to array of current values

## Return

None

## getCurrentRMS

Calculate the AC current based on the samples in the buffer.

## Parameters

None

## Return

**float** Current in Amps RMS