

VoltageSensor.h

Description

VoltageSensor.h is a non-blocking library designed to be used with the Kewee Meters PCB, which uses a LTV-817S-TA1 Optocoupler. It takes a pointer from the user to store voltage samples in a variable-length buffer and can compute RMS voltage.

VoltageSensor

Construct a new Voltage Sensor object.

Parameters

sensorPin Analog (ADC) pin that the Voltage Sensor output is connected to

buffer Pointer to current sample buffer

bufferLength Number of samples stored in the buffer

Return

None

~VoltageSensor

Destroy the Voltage Sensor object.

Parameters

None

Return

None

begin

Begin using the Voltage Sensor 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 Voltage Sensor and store it to the buffer.

Parameters

None

Return

None

getVoltageValues

Convert raw ADC values to usable voltage values.

Parameters

voltageArray Pointer to array of voltage values

Return

None

getVoltageRMS

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

Parameters

None

Return

float Voltage in Volts RMS