

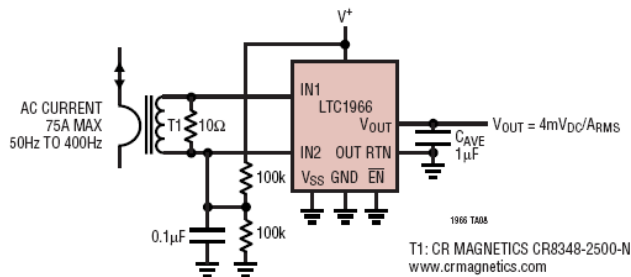
APPLICATION NOTE 105: Current Sense Circuit Collection

AC

Sensing current in ac power lines is quite tricky in the sense that both the current and voltage are continuously changing polarity. Transformer coupling of signals to drive ground referenced circuitry is often a good approach.

To see other chapters in this Application Note, return to the [Introduction](#).

Single Supply RMS Current Measurement



The LT1966 is a true RMS-to-DC converter that takes a single-ended or differential input signal with rail-to-rail range. The output of a pcb mounted current sense transformer can be connected directly to the converter. Up to 75A of AC current is measurable without breaking the signal path from a power source to a load. The accurate operating range of the circuit is determined by the selection of the transformer termination resistor. All of the math is built in to the LTC1966 to provide a dc output voltage that is proportional to the true rms value of the current. This is valuable in determining the power/energy consumption of ac powered appliances.