

POLOLU ACS711EX CURRENT SENSOR CARRIER

-31A TO +31A

USER'S GUIDE

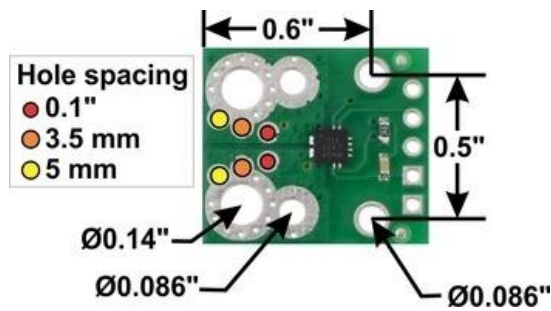
ELECTRICAL CONNECTIONS

The sensor requires a supply voltage of 3 V to 5.5 V to be connected across the Vcc and GND pads, which are labeled on the bottom silkscreen. The sensor outputs an analog voltage that is linearly proportional to the input current. The quiescent output voltage is $V_{cc}/2$ and changes by 45 mV per amp of input current (when $V_{cc} = 3.3$ V), with positive current increasing the output voltage and negative current decreasing the output voltage. The relationship between the instantaneous input current, i , and sensor output voltage, V_{OUT} , can be represented by the following equations:

$$V_{OUT} = \frac{V_{cc}}{2} + i * \frac{V_{cc}}{73.3 A}$$

$$i = 73.3 A * \frac{V_{OUT}}{V_{cc}} - 36.7 A$$

The FAULT pin is normally high and latches low when the current exceeds ± 31 A. Once the FAULT pin is latched low, the only way to reset it is by toggling power on the Vcc pin. In our tests, this module was able to handle 31 A of continuous current without exceeding 100°C, with no cooling beyond the heat dissipation of the PCB.



ACS711EX current sensor carrier connection and mounting dimension diagram.

ACS711 current sensor carrier (LC package version) with solderless ring terminal connectors (not included).

The input current can be connected to the board in a variety of ways. Holes with 0.1", 3.5 mm, and 5 mm spacing are available as shown in the diagram above for connecting male header pins or terminal blocks. For high-current applications, you can solder wires directly to the through-holes that best match your wires, or you can use solderless ring terminal connectors, as shown in the picture above. The large through-holes are big enough for #6 screws.

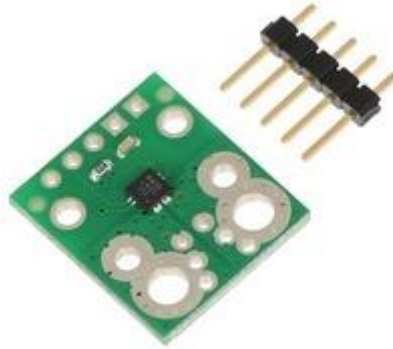
Warning: This product is intended for use below 30 V. Working with higher voltages can be extremely dangerous and should only be attempted by qualified individuals with appropriate equipment and protective gear.

MOUNTING INFORMATION

The board has two mounting holes on the logic side of the board. These mounting holes are 0.5" apart and are designed for #2 screws.

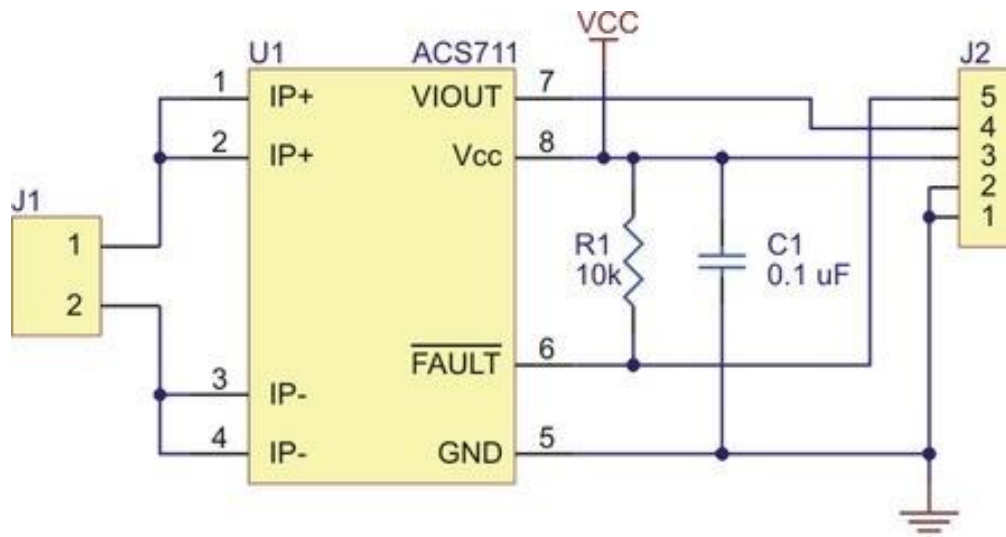
INCLUDED COMPONENTS

This board ships assembled with all surface mount components, and a 5×1 strip of 0.1" header pins is included but not soldered in, as shown in the picture below.



ACS711EX current sensor carrier with included 5 × 1 0.1" header pins.

SCHEMATIC DIAGRAM



ACS711 current sensor carrier schematic diagram.