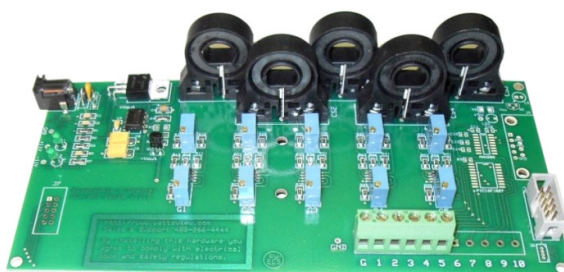


<http://measure-current.com>**PRODUCT DATA SHEET**

H5-ACDC-70 5 Channel Linear Current Sensor Board
 $\pm 72A$ Range, Adjustable Sensitivity = $\sim 32mV$ to $\sim 320mV$ per Amp

- Suited for data acquisition hardware
- Data logger and PLC Compatible
- Electrically Isolated
- Measures both AC & DC Current with
- Individual signal gain adjustment
- Individual signal offset adjustment
- Mounting Kit Option Available

The H5-ACDC-70 is a popular current monitoring platform that provides the versatility needed to handle a wide variety of applications. Each of the 5 sensor channels has individual gain and offset adjustments with 22 turn precision potentiometers.

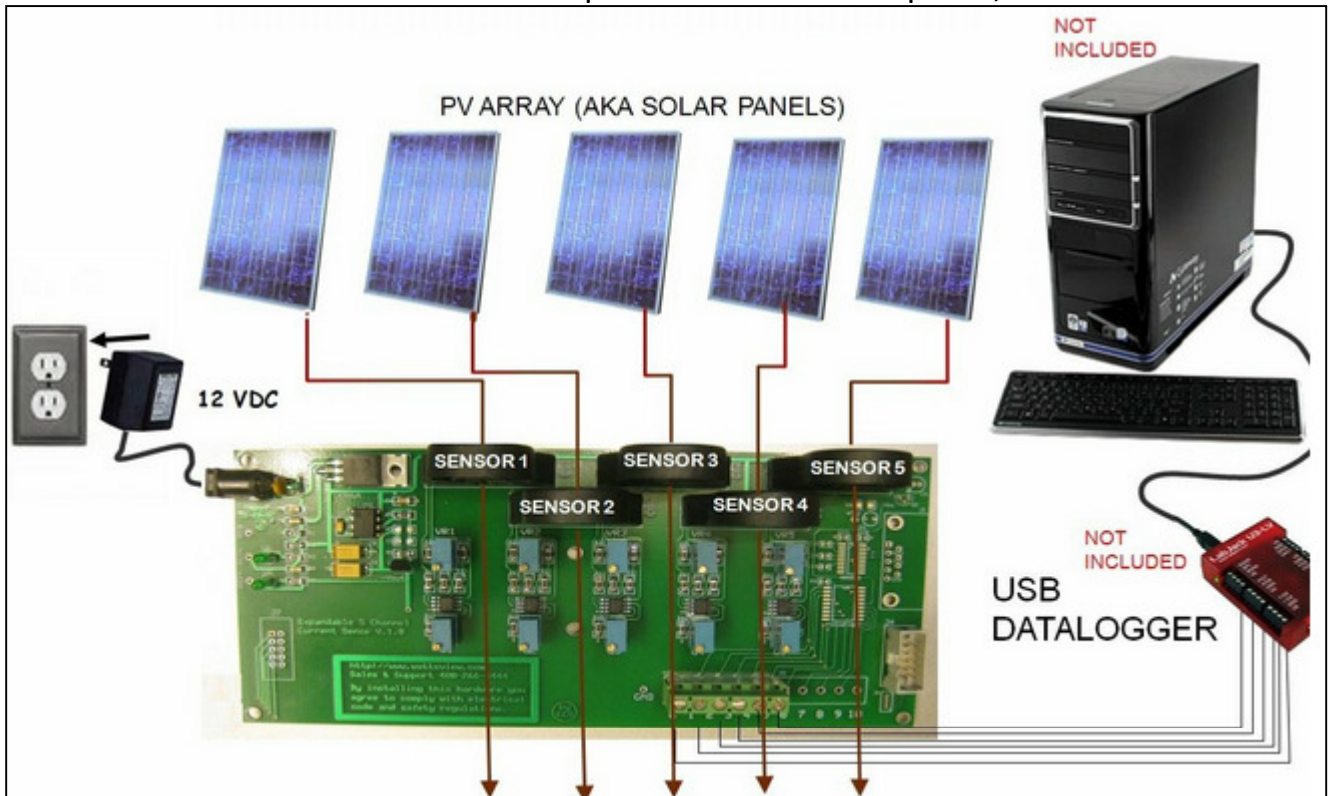
<http://measure-current.com>**SPECIFICATIONS**

Board Size Dimensions & Weight:	7.25" X 3.5" , 6 ounces
Mounting Plate Dimensions & Weight:	Size: 8.24" X 3.5" , 12 Ounces
Response time	3 μ sec
Power requirements	12 to 20 Volts DC, 100mA
Power Connector	2.5mm ID, center positive
Sensor Temperature Drift	± 0.05 %/ $^{\circ}C$
Offset Adjustment 22 turn Pot	-7 to +7 Volts
Linearity	± 0.1 %
Sensitivity gain set to 1x	$\sim 32mV$ per Amp *
Sensitivity gain set to 10x	$\sim 320mV$ per Amp *
Channel Isolation	Single ended with common Gnd
Applications	Monitoring of solar panels, wind turbines, fuel cells, UPS system, battery charging, laboratory research testing.

* NOTE: Looping your wire through the sensor multiple times will increase sensitivity

SOLAR PANEL MONITORING EXAMPLE

The example below shows how individual strings of solar panels can be monitored with data being collected by a LabJACK data acquisition box sold for \$139 U.S. The LabJACK comes with free software that can sample and record data up to 5,000 times a second.



DESIGN IMPLEMENTATION POINTS

You will want to adjust the output of the current sensor board to use the full range of your data acquisition system. To do this, you will want to set your volt meter to measure DC volts, and probe the large green signal output connector as you adjust the potentiometers.

To check Channel 1 transducer, you will need to place the negative (Black) probe of your volt meter into the terminal labeled with "G", then you will need to insert the positive probe of your volt meter (red) into the terminal labeled with the number "1".

See application notes on next page for further information.

MEASURING DC:

For example, if your data logger has a voltage input range of 0 to 5 Volts and the max DC current you are expecting to see is 50 Amps, then you would adjust your offset so your output is at zero volts when there is no current flowing through the wire. And then you would adjust your gain so that at 50 Amps DC, your sensor puts out 5 volts. You will need to do this to optimize your resolution.

MEASURING AC:

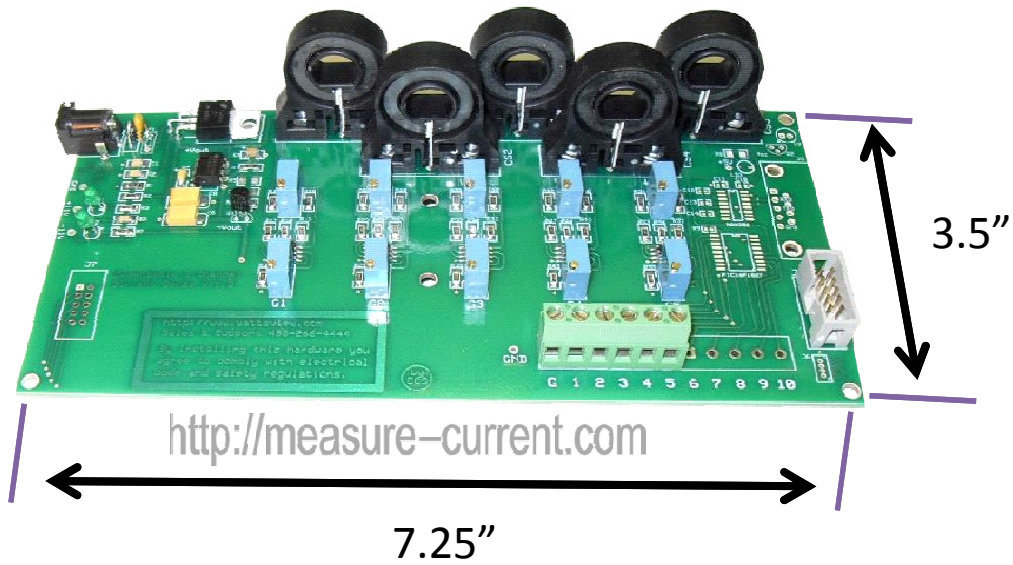
If you want to measure 50 Amps AC, and your data logger has a 0 to 10 Volt input range, then you would adjust your offset so that it sits at 5 Volts, and your gain so that the signal will hit 10 Volts at 50 Amps and 0 Volts at -50 Amps.

If your data logger has a -5 to +5 voltage input range, then you would adjust the offset to zero volts to read an AC signal. Also if your signal is weak, then loop the wire around the sensor multiple times and adjust the gain to its max setting.

Below you can see a typical application for data logging monitoring the current sensor data. In this case the hall effect transducer offset was adjusted to zero using the potentiometer. Then the gain potentiometers were turned to the lowest resistance setting which gives us a gain of ~1.

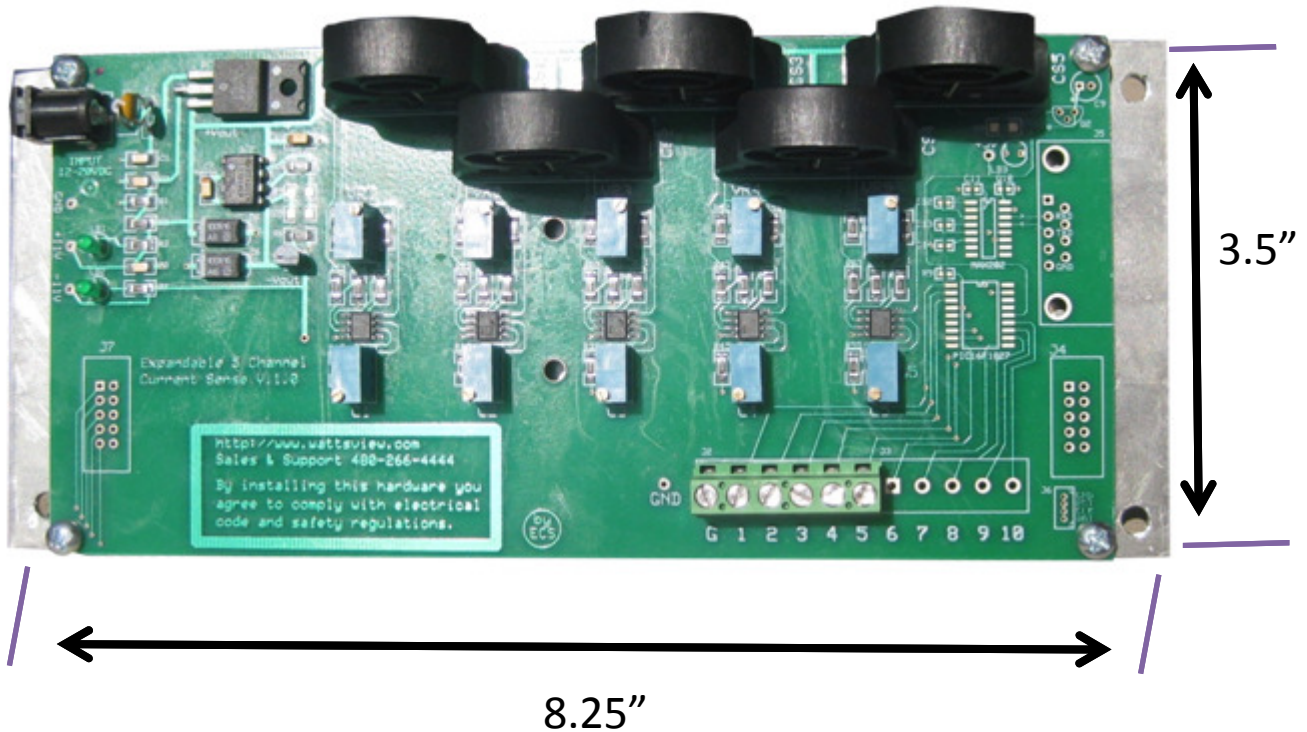
Next a LabVIEW software program ran while monitoring the Lab Jack U3 data acquisition box as shown below. This box has a USB connection to the computer as shown below. Then 20 Amps of DC current was put through each sensor for a time interval of 10 seconds each. You can see that each sensor responded with a nice square pulse at or around 780mV. This is because the sensors put out about ~37mV per amp.

This circuit board allows you to swap out the sensors to install the CSLA2CF which can monitor over 120 Amps of current per sensor. You would have to unsolder the CSLA2CD sensors and solder in some CSLA2CF sensors. Or just buy the board blank



The mounting kit option is available and is indicated by the “-MK” at the end of the model number.

MOUNTING KIT 1/8” Aluminum plate – Open Frame



CALIBRATION

This 5-way Current Sensor Board is pre-calibrated for proper operation with the current sensors installed on the board. To re-calibrate the individual channels back to the original settings at any time, follow this procedure.

You will need a 3 ½ digit digital voltmeter (DVM) and a small flat blade screwdriver.

1) Remove (or disconnect) any cabling through the current sensor openings.

2) Apply 12-20VDC to the J1 input jack. The center pin is (+).

Observe that the two green power LEDs light.

Note: The circuitry is polarity protected and will not work, but is protected from inadvertent reverse polarity application.

3) Attach the black (-) DVM lead to the G terminal of J2 output connector.

4) Attach the red (+) DVM lead to the numbered terminal of the channel you wish to calibrate.

5) Rotate the adjusting screw of the G_x (x is the number of the channel to be calibrated) GAIN potentiometer fully counter-clockwise (CCW) to set the gain of the channel at 1.0. The screw will not stop, but a distinct clicking noise will be heard when the fully CCW position has been reached.

6) Note the polarity and voltage value reading on the DVM. Slowly rotate the VR_x (x is the number of the channel to be calibrated) voltage level potentiometer screw either CW or CCW to display a value 0.000 to 0.001 VDC.

7) Repeat steps 4 to 6 for any additional channels to be re-calibrated.

8) Remove the DVM meter leads and unplug the DC power plug. Your H5-ACDC-70 AC/DC Current Sensor Board is now ready for installation.

IF THE VOLTAGE OUTPUT SIGNAL POLARITY IS (-) DURING OPERATION, REVERSE THE CABLE DIRECTION THROUGH THE CURRENT SENSOR.

Note. Do not press or secure the regulator IC1 to the circuit board.

<http://measure-current.com>

1293 E. Parkview Dr.

Gilbert, AZ 85296

United States

Call 360-545-3869 for assistance

Email: support@measure-current.com