

FEATURES

- Adjustable output voltage level
- Adjustable gain
- Breadboard space with undedicated SOIC 8/14/16 pattern
- Resistor and capacitor patterns for input and output filtering

DESCRIPTION

The AD8230 evaluation board allows for quick and easy evaluation of the AD8230. By default, the evaluation board is configured for a gain of 100 with the reference tied to ground. As the board schematic in Figure 1 shows, this configuration is easily adjustable.

The gain can be changed by replacing the gain setting resistors with those of other values. In addition, the AD8230-EVAL can support optional configurations. The input and output traces allow for RC filtering. To apply RC filters, the traces that short the resistors must be cut. Low leakage diodes such as BAV199Ls can be placed on the patterns at CR1 and CR2 for over-voltage protection.

SETTING UP THE EVALUATION BOARD

Connect +Vs, GND, and -Vs to a triple power supply. The supply voltages can vary between ± 4 V and ± 8 V. Refer to the [AD8230](#) data sheet for example applications. These applications include bridge and thermocouple measurements. As is the case for all amplifiers, there must be a return current path to the ground of the triple power supply for proper operation. Figure 2 and Figure 3 show the return current paths.

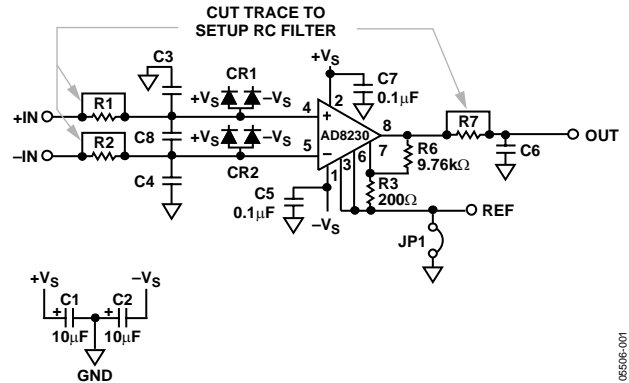


Figure 1. AD8230 Evaluation Board Schematic

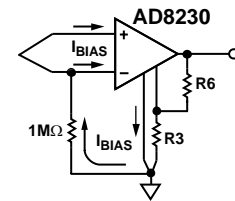


Figure 2. Return Current Path Provided by the 1 MΩ Resistor

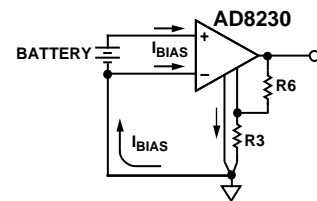


Figure 3. Battery Ground is Connected to the AD8230 Power Supply Ground

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AD8230-EVAL

GAIN ADJUSTMENT

Gain can be adjusted by changing R3 and R6 according to this expression:

$$\text{Gain} = 2 \left(1 + \frac{R6}{R3} \right)$$

Table 1. Gains Using 1% Standard Resistors

Gain	R6	R3	Actual Gain
2	0 Ω (short)	None	2
10	8.06 kΩ	2 kΩ	10
50	12.1 kΩ	499 Ω	50.5
100	9.76 kΩ	200 Ω	99.6
200	10 kΩ	100 Ω	202
500	49.9 kΩ	200 Ω	501
1000	100 kΩ	200 Ω	1002

OUTPUT VOLTAGE LEVEL ADJUSTMENT

The AD8230's V_{REF} pins are tied to ground via JP1. By removing the solder on JP1, the voltage on the V_{REF} pins is determined solely by the voltage applied to the REF terminal on the board.

OPTIONAL INPUT DIODE CLAMPING

SOT-23 diode clamps such as BAV199Ls can be added at CR1 and CR2.

OPTIONAL FILTERING

An antialiasing filter can be added by severing the traces at R1 and R2, replacing those traces with resistors, and then placing capacitors at C3, C4, and C8 (see Figure 1). The differential input impedance should not exceed 10 kΩ. Thus, R1 = R2 < 5 kΩ. Similarly, an output filter may be constructed by severing the trace at R7, replacing it with a resistor, and then placing a capacitor at C6.

ORDERING GUIDE

Model	Description
AD8230-EVAL	Evaluation Board