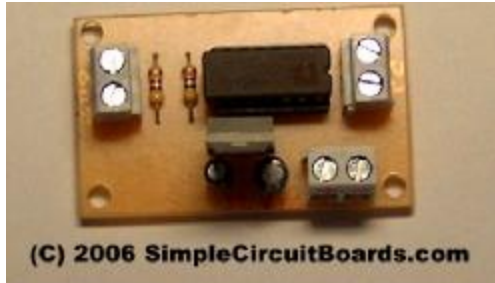


SimpleCircuitBoards.com

Exhaust Gas Thermocouple Amplifier



This board was designed for car enthusiasts who wish to monitor the temperature of their exhaust gas in order to fine tune their engine's performance. The design is based on the Analog Devices AD595 (type K) Thermocouple Amplifier and has additional circuitry to enable its use in automotive applications.

Maximum output is 5V DC at 1000 degrees C (1800 F). This board is intended to be used with a DAC device to handle temperature conversion.

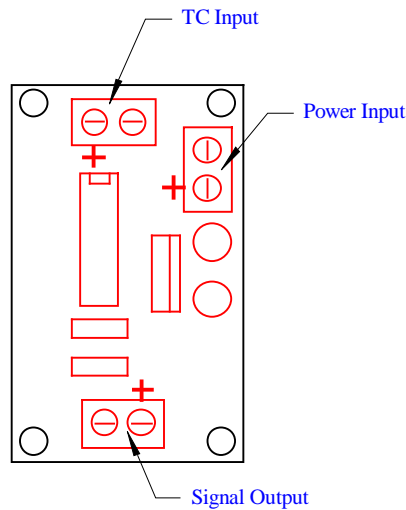
Thermocouple is not included.

Details:

As mentioned above, this board was designed for automotive applications in which the user wishes to measure very high temperatures such as those found in exhaust systems. It has an on-board voltage regulator that will take the DC voltage from the car and clean it up for the board's electronics. The board requires 12V DC minimum but will handle up to 24V DC maximum. The board has connections for a type K thermocouple (type J TC capability is available upon request), DC power input and 0-5V DC output (dependant upon the temperature being measured). The 0-5 VDC output is linear with an output of 5 V occurring at 1000 degrees C (or 1800 degrees F). The board was designed to be used with a DAC device that requires a 0-5 V input. You will have to use the DAC to convert the voltage to a temperature for logging or display and since all applications are a little different, you will have to calibrate the output to your input.

Miscellaneous Information:

- For all thermocouples, the red wire connects to the negative terminal

Board Layout:**Specifications:**

- Input Power: 12 – 24 VDC
- Output: approx. 5 mV per °C
- Temperature Range: 0 to 1000 °C (32 to 1800 °F)
- Thermocouple Type: Type K
- Board Dimensions: 1.5 x 2.0 inches

Disclaimer:

These boards are designed for educational use only. In no circumstances should these circuit boards be used in critical situations where failure could mean injury or property damage.

Please check out the other circuit board designs that I offer at www.SimpleCircuitBoards.com. Here are just a few examples:

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- DC to DC Converters
- TTL-Driven Relay Boards – 1 Amp and 10 Amp
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- Voltage Amplifier Board
- Water Level Monitors
- Water Level Control Boards
- Motor Control Boards
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