

# Adafruit PT1000 RTD Temperature Sensor Amplifier - MAX31865

PRODUCT ID: 3648

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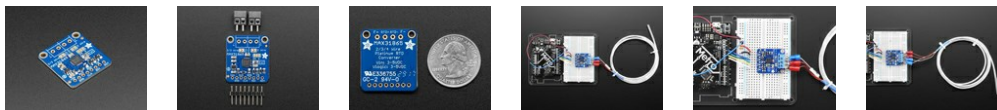
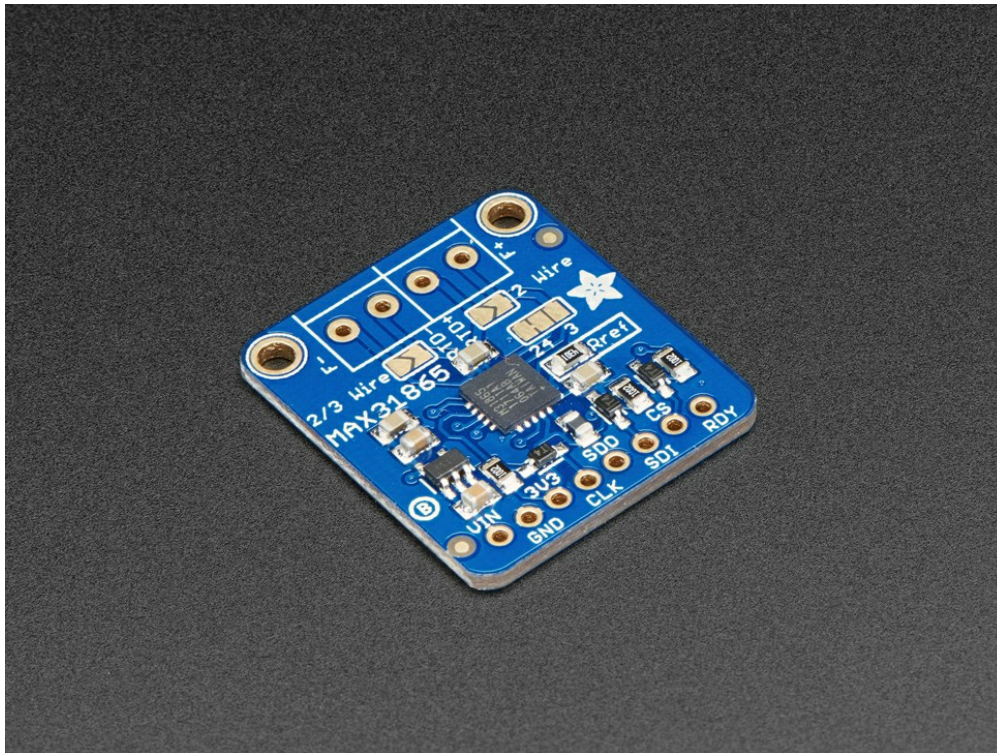
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## DESCRIPTION

For precision temperature sensing, nothing beats a Platinum RTD. Resistance temperature detectors (RTDs) are temperature sensors that contain a resistor that changes resistance value as its temperature changes, basically a kind of thermistor. In this sensor, the resistor is actually a small strip of Platinum with a resistance of **1000 ohms** at 0°C, thus the name PT1000. Compared to most NTC/PTC thermistors, the PT type of RTD is much most stable and precise (but also more expensive) PT1000's have been used for many years to measure temperature in laboratory and industrial processes, and have developed a reputation for accuracy (better than thermocouples), repeatability, and stability.

However, to get that precision and accuracy out of your PT1000 RTD you must use an amplifier that is designed to read the low resistance. Better yet, have an amplifier that can automatically adjust and compensate for the resistance of the connecting wires. If you're looking for a great RTD sensor, today is your lucky day because we have a lovely **Adafruit RTD Sensor Amplifier with the MAX31865** breakout for use with any **2, 3 or 4 wire PT1000 RTD!**

If you have a **PT100 RTD**, please visit [this page](#) to purchase a version of this board with the reference resistor for 100-ohm RTDs

We've carried various MAXIM thermocouple amplifiers and they're great - but thermocouples don't have the best accuracy or precision, for when the readings must be as good as can be.

The MAX31865 handles all of your RTD needs, and can even compensate 3 or 4 wire RTDs for

better accuracy. Connect to it with any microcontroller over SPI and read out the resistance ratio from the internal ADC. We put a **4300Ω 0.1%** resistor as a reference resistor on the breakout. We have some example code that will calculate the temperature based on the resistance for you.

We even made the breakout 5V compliant, with a 3.3V regulator and level shifting, so you can use it with any Arduino or microcontroller.

Each order comes with one assembled RTD amplifier breakout board. Also comes with two 2-pin terminal blocks (for connecting to the RTD sensor) and pin header (to plug into any breadboard or perfboard). **A required PT1000 RTD is not included!** (But we stock them in the shop). Some soldering is required to solder the headers and terminal blocks to the breakout, but it's an easy task with soldering tools.

**Please note: this does not include an RTD sensor! Also, the terminal blocks included with your product may be blue or black**



## TECHNICAL DETAILS

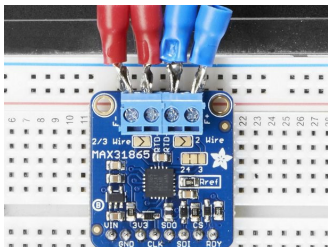
[Datasheets](#), [PCB CAD files](#), [diagrams](#), [Fritzing object](#) and [more in the tutorial](#)

Product Dimensions: 28.0mm x 25.0mm x 2.4mm / 1.1" x 1.0" x 0.1"

Product Weight: 2.6g / 0.1oz

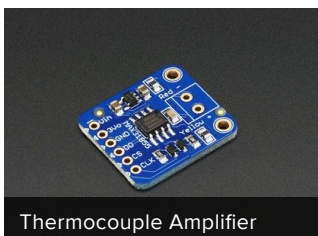


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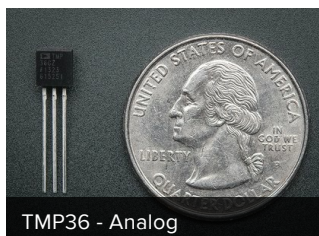


[Adafruit MAX31865 RTD PT100 or PT1000 Amplifier](#)  
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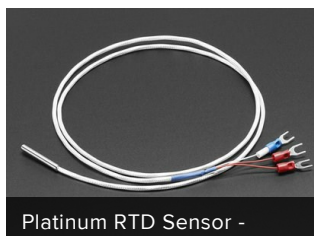
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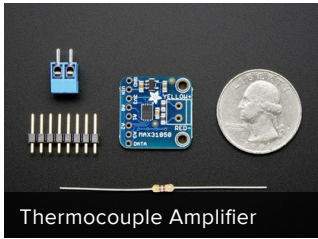
Adafruit PT100 RTD



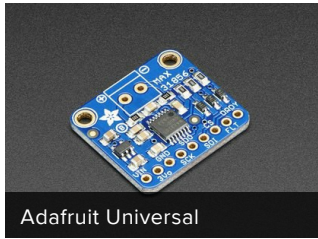
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