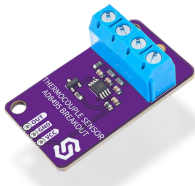


PRODUCT DATASHEET



Thermocouple Sensor AD8495

333053

The AD8495 K-Type thermocouple sensor accurately measures temperatures from -25°C to $+400^{\circ}\text{C}$, ideal for industrial and research applications.

Full product documentation, files and tutorials: solde.red/333053

CORE ATTRIBUTES

SKU **333053**WEIGHT **86 g**BARCODE **732388646500**

DESCRIPTION

Measure extreme temperatures from -25°C to $+400^{\circ}\text{C}$ with precision using our **AD8495 K-Type thermocouple sensor** breakout. Perfect for industrial monitoring, 3D printer hotends, furnace control, and high-temperature research applications, this sensor provides accurate temperature readings where standard sensors fail. The built-in cold junction compensation (CJC) eliminates the need for external reference temperature measurement, while the linear $5\text{mV}/^{\circ}\text{C}$ output makes integration with Arduino and other microcontrollers straightforward and reliable.

Engineered around the precision AD8495 chip, this breakout board features built-in cold junction compensation with $\pm 1^{\circ}\text{C}$ typical accuracy within 0 – 50°C ambient range. The wide supply voltage range (2.7V to 36V single supply, or 2.7V to 18V dual supply) ensures compatibility with various power systems, while the ultra-low $180\mu\text{A}$ typical supply current makes it perfect for battery-powered applications. The 1.25V typical output at 0°C provides a stable reference point for accurate temperature calculations.

Essential for monitoring 3D printer hotends, industrial furnace control, measuring exhaust gas temperature in automobiles, temperature monitoring in food processing, and scientific research requiring precision at high temperatures. Compatibility with K-Type thermocouples and high accuracy make this sensor ideal for both hobby projects and industrial automation systems where reliable measurement is crucial.

TECHNICAL DETAILS

- **Temperature Range:** -25°C to $+400^{\circ}\text{C}$ with K-Type thermocouple
- **Output:** Linear $5\text{mV}/^{\circ}\text{C}$ for easy microcontroller integration
- **Reference Output:** 1.25V typical at 0°C (cold junction)
- **Accuracy:** $\pm 1^{\circ}\text{C}$ typical, $\pm 2^{\circ}\text{C}$ max (0 – 50°C ambient range)
- **Built-in CJC:** Automatic cold junction compensation
- **Stable Operation:** Consistent readings across temperature ranges
- **Supply Voltage:** 2.7V to 36V (single supply) / 2.7V to 18V (dual supply)

- **Supply Current:** Ultra-low 180µA typical consumption
- **Output Type:** Analog voltage proportional to temperature

SPECIFICATIONS

INTERFACE	Analog
QWIIC COMPATIBLE	No
BREADBOARD COMPATIBLE	Yes
MEASUREMENT TYPES	Temperature
IC PART NUMBER	AD8495
SUPPLY VOLTAGE MIN V	2.7
SUPPLY VOLTAGE MAX V	36

LINKS

Full Documentation	https://docs.soldered.com/ad8495/overview/
Arduino Library	https://github.com/SolderedElectronics/Soldered-Thermocouple-Sensor-AD8495-Library
Hardware Details	https://docs.soldered.com/ad8495/hardware/
mim_package	https://checkmim.com/packages/solderedelectronics+Soldered-AD8495-MicroPython-Library
Arduino: Get Started	https://docs.soldered.com/ad8495/arduino/examples/
MicroPython Module	https://github.com/SolderedElectronics/Soldered-AD8495-MicroPython-Library
Pinout	https://cms.soldered.com/products/333053/media/333053_pinout-png_ca16fd.png

GALLERY

