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# Gravity: I2C High Temperature Sensor (K-Type, 800°C)

SKU:DFR0558



## *INTRODUCTION*

PT100 is suitable for most of the temperature measurement below 400°C, but usually the temperature of the household natural gas stove can reach over 800°C, and the temperature of the pottery kiln or high-power electric furnace can be more than 1000°C. The K-type thermocouple are commonly used in such ultra-high temperature scenes.

The digital K-type high temperature sensor consists of a signal amplification conversion module and a stainless steel sheathed K-type thermocouple probe. When the K-type thermocouple probe is placed near a high-temperature heat source, the probe generates a small voltage proportional to the temperature due to the thermoelectric effect. The module uses a MAX31855K dedicated chip to amplify this small voltage, convert it to digital signals, and compensate accordingly. The temperature readings can be read through Gravity I2C interface. The module can measure extremely wide temperature ranging from -270°C to 1372°C, the error from -200°C to 700°C is within  $\pm 2^\circ\text{C}$ , and the error from 700°C to 1350°C is within  $\pm 4^\circ\text{C}$ . The attached K-type thermocouple can measure up to 800 °C with error within  $\pm 2.5^\circ\text{C}$ .

## *FEATURES*

- 14 bit, 0.25°C digital high-resolution temperature measurement



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- Extremely wide temperature range
- Wide input voltage, compatible with 3.3V and 5V controllers
- Gravity I2C interface, convenient connection
- Fits any K-type thermocouple probe

## *APPLICATIONS*

- Electric Oven, Electric Furnace
- High Temperature Flame, Gas
- Pottery Kiln

## *SPECIFICATION*

### **Signal Amplification Conversion Module**

- Input Voltage (VCC): 3.3V~5.5V
- Probe: K Type Thermocouple
- Temperature Range: -270°C~1372°C
- Resolution: 0.25 °C
- Error: within  $\leq \pm 2^\circ\text{C}$ (-200°C~700°C)  $\sim \pm 4^\circ\text{C}$ (700°C~1350°C)
- Interfaces: Gravity I2C (Logic Level 0-3.3V)
- Dimension: 44.0mm\*22.0mm

### **Armored K-Type Thermocouple Probe**

- Temperature Range: up to 800 °C
- Error:  $\leq \pm 2.5^\circ\text{C}$
- Wire Length: 1.5m
- Probe Length: 50mm
- Probe Diameter:  $\Phi 4\text{mm}$
- Features: Waterproof, Corrosion Resistant (Weak Acid or Alkali Resistant, Rustproof), High Temperature Resistance