Non-contact Infrared Temperature Sensor

[Type：SEN0256-TS01(0-3V)]

Product Specification

Version Number：V1.0

ShangHai DFRobot Robotics Co.,Ltd

1. Introduction

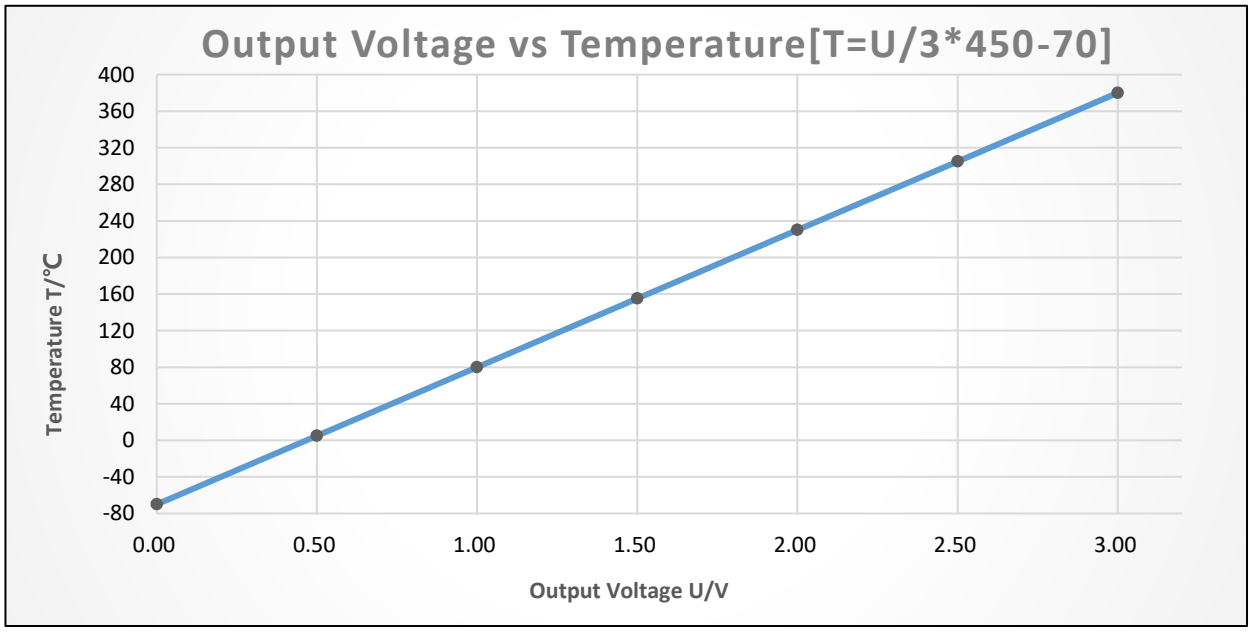
This product is a non-contact infrared temperature sensor. It can be used to detect the infrared intensity of an object so as to calculate its surface temperature without touching, and then convert the temperature value into voltage value and output it.

The sensor’ s case is made of mental which makes it able to protect against impact, water, dust and so on. Given stable output data, this temperature sensor can exhibit a much better measuring performance than most other similar products on the market.

2. Specification

- Operating Voltage：DC 5.0~24.0V
- Operating Temperature Range：-40℃~85℃
- Measuring Range：-70℃~380℃
- Output Signal：0~3V
- Temperature Resolution：0.11℃
- Measuring Accuracy：±0.5℃~±4℃ [see remarks]
- Nominal Operating Current： 20mA
- Field of View(FOV)：5° [see remarks]
- Defense Grade：IP65
- User Interface：DuPont Pin

3. Output Voltage vs Temperature

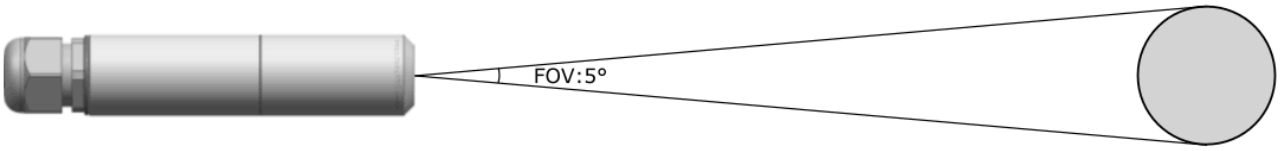


4. Dimension and Interface Description (mm)

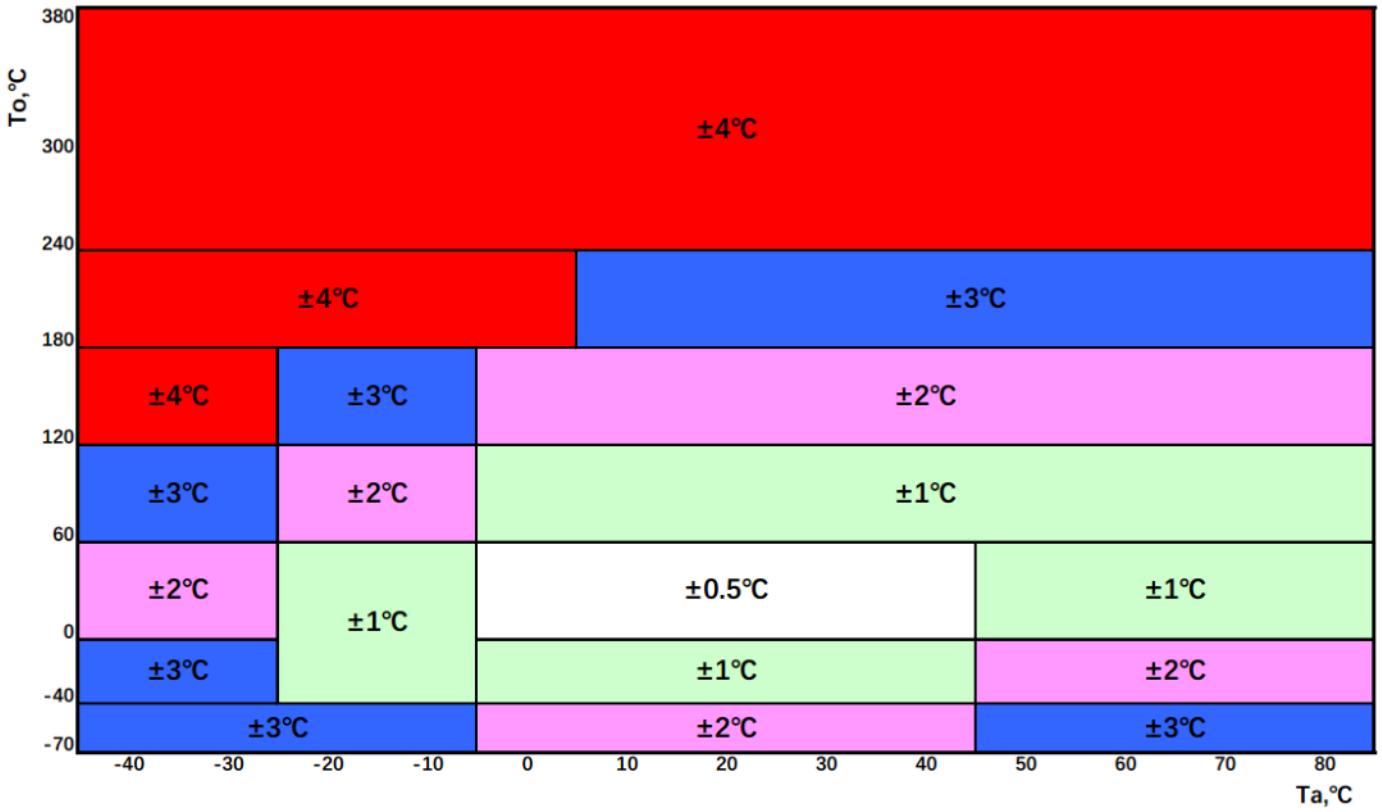
Interface Description	
Name	**Description**
Power Supply	Positive Pole (Vin)
Ground	Negative Pole(GND)
Signal	Analog Voltage Output (0-3V)
Shielding	Grounding the shielding can help to reduce noise

5. Remarks

- The field of view(FOV) of the sensor is 5°. The target dimension and the optical properties of the IR temperature sensor decided the maximum distance between the target and the probe. The field of view of the sensor is shown below.



- The gradient diagram of measuring accuracy of the sensor is shown below (To is the measured temperature; Ta is the temperature of the environment the sensor locates in). Please note that the temperature error only applies to a certain isothermal condition, and it’ s only valid when the detected object is fully filling in the FOV of the sensor.



- The measured temperature is an average temperature value that belongs to the detected heat source in the FOV of the sensor. If there is a need for accurate measurement, users have to correct the data for the practical using scene.
- Using low-noise power input is helpful to improve the accuracy.
- Do not use the sensor in the condition out of the rated technical parameters in order to avoid device damage.
- The product is equipped with an all-mental case and shielding wires, which can effectively reduce electromagnetic interface. However, for a more stable performance, please try to keep the sensor away from electromagnetic source (such as motor, high-power cable) when installing the device.

6. Shipping List

TS01 Infrared Temperature Sensor (with an 1.5 cable), Certificate, Warranty Card.

Declaration

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