



UbiBot Infrared Temperature Sensor

SKU: UBIBOTIR
Manufacturer Warranty period: 12 months
Country of Origin: China

Features

The infrared temperature sensor adopts a professional area array temperature sensor probe as the core detection device which is with stable signal and high accuracy; it has the characteristics of wide measurement range, high precision, good linearity, good versatility, easy use, easy installation, long transmission distance, and low power consumption.

Principle of infrared temperature measurement

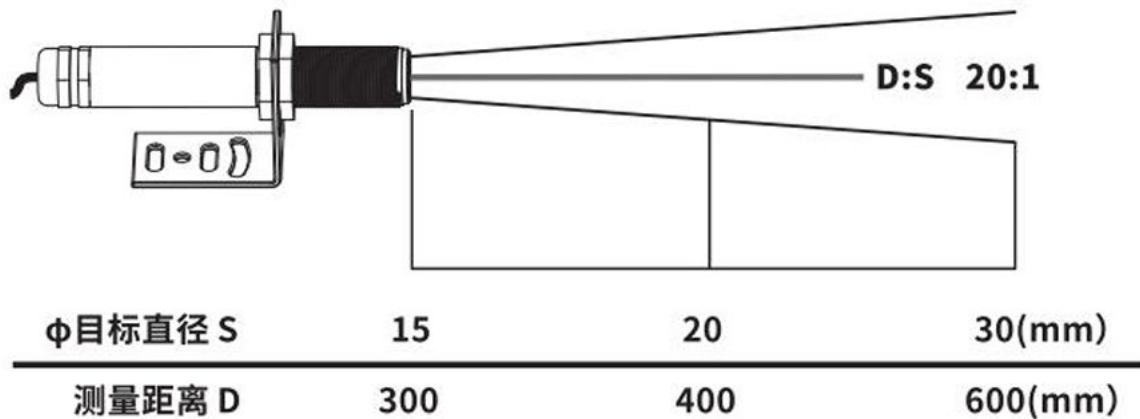
Any object radiates infrared energy, and the intensity of the radiation varies with temperature. Infrared thermometers use infrared radiation energy with wavelengths in the range of 8μm-14μm. An infrared temperature sensor is an optoelectronic sensor that detects infrared radiation and converts it into an electrical signal. It displays or outputs temperature through an electronic circuit amplifier, linearization, and signal processing.

Specifications

Temperature	
Measuring Range	0~100°C
Resolution	0.1°C
Accuracy	±1% or ±1°C of measured value, take the larger value (@300°C)
Spectral Range	8~14 μm
Circuit working environment	
Temperature	-20~60°C
Humidity	10~95%RH (No condensation)
Warm-up time	≥ 40 mins
Response time	300 ms (95%)
Optical Resolution (D:S)	20:1
Emissivity	0.95 (Factory default)
Communication Methods	RS485 (Modbus)
IP Rate	IP54
Shell	304 Stainless Steel
Cable Length	4m

Optical path figure

Object distance ratio (D:S) 20:1, refers to the ratio of the measured distance to the diameter of the measured object. When the distance between the infrared temperature sensor and the measured object increases, the surface area of the measured object is required to be larger.



D refers to the measured distance; S refers to the diameter of the measured object.

Maximum distance and size of measured point

The size of the measured target and the optical characteristics of the infrared thermometer determine the maximum distance between the measured target and the measuring end. In order to avoid measurement errors, the measured target should fill the field of view of the detector as much as possible. Therefore, the measured point should always be kept smaller than the measured object or at least the same size as the measured target.

Lens cleaning

The lens of the instrument must be kept clean to avoid measurement errors or even damage to the lens caused by dust, smoke and other contaminants. If there is dust on the lens, wipe it with lens cleaning paper dipped in absolute alcohol.

Electromagnetic interference

In order to prevent electromagnetic interference, please keep the infrared temperature sensor away from electromagnetic sources (such as motors, high-power cables, etc.). If necessary, add a metal sleeve.