

Temperature Sensor

Ovens & Cooktops Applications



THINKING SENSOR

Ovens & Cooktops Applications

Feature

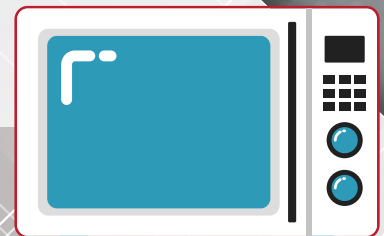
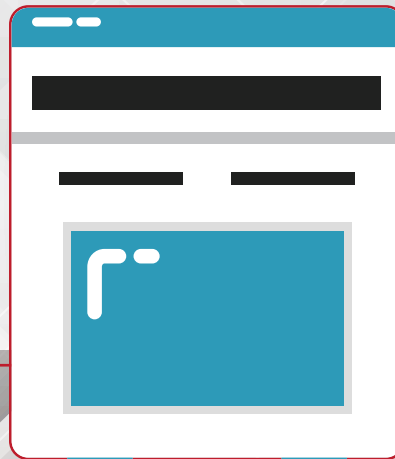
- ◆ High-temperature resistance and fast response
- ◆ Pt sensor is highly stable and durable.
- ◆ Various electrical characteristics are available for your choice.
- ◆ Screw-on type, metal case type, and plastic case type sensors are available, and the sensors are customizable.

Function

- ◆ Sensor is generally installed in heating board or contacts surface of heat receiving board.
- ◆ Sensor is installed in bottom, top, and broadside of oven for multiple point temperature detection.
- ◆ Sensor is applied in ovens, cooktops, ranges, etc.

Application

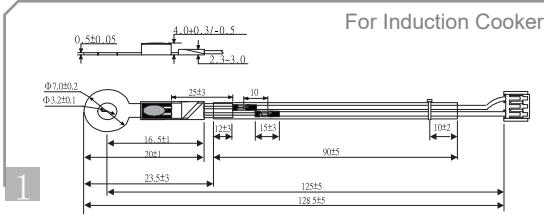
Induction cooker, induction heating cooktop, microwave oven, oven, gas stove, cooking table, etc.



Screw-On Type

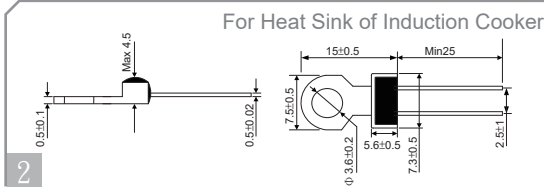
Feature: Screw-on design is for easy installation

Application: The sensor is installed on metallic surface for temperature detection, and the sensor is mostly installed in induction cooker, induction heating cooktop, and heat sink of kitchen appliances.



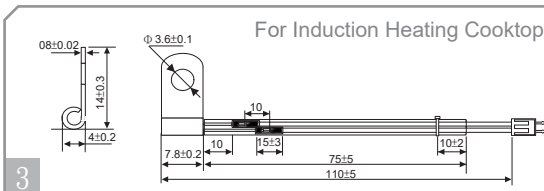
Component | Sensing top (terminal+NTC chip+epoxy)+lead wire +tie+tube+terminal+housing

Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -20~+150°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R100°C=3.3KΩ±3% **B Value** | B0/100=3970K±2%
Thermal Time Constant | Around 6 seconds (heating board)
Hi-Pot Test | AC 1500V 10mA (Max)



Component | Sensing top (terminal+NTC chip+epoxy)+lead wire

Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -20~+125°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R25°C=10KΩ±2% **B Value** | B0/100=3435K±2%
Thermal Time Constant | Around 15 seconds (heating board)
Hi-Pot Test | AC 1000V 10mA (Max)



Component | Sensing top (terminal+NTC chip)+lead wire+tube+tie +terminal+housing

Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -5~+150°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R100°C=3.3KΩ±3% **B Value** | B0/100=3970K±2%
Thermal Time Constant | Around 6 seconds (heating board)
Hi-Pot Test | AC 3000V 0.5mA (Max)

Epoxy Coating Type

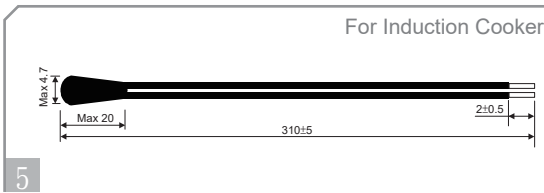
Feature: Structure of the sensor is simple, and it directly detects temperature in air.

Application: The sensor is mostly used for temperature detection of ambient environment or exhaust air.



Component | Sensing top(NTC chip+epoxy)+lead wire

Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -40~+125°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R25°C=10KΩ±1% **B Value** | B25/85=3435K±1%
Thermal Time Constant | Around 3 seconds (in water)
Hi-Pot Test | AC 1000V 10mA (Max)



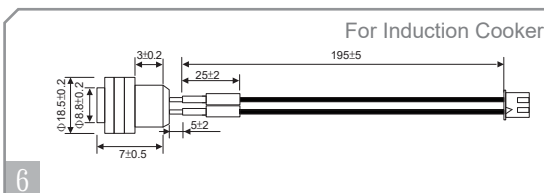
Component | Sensing top (NTC chip+ epoxy)+lead wire

Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -30~+150°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R25°C=5KΩ±1% **B Value** | B25/50=3470K±1%
Thermal Time Constant | Around 5 seconds (in water)
Hi-Pot Test | AC 1000V 10mA (Max)

Metal Case Type

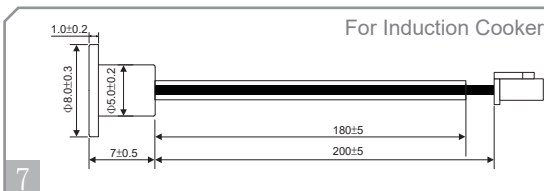
Feature: The sensor fits heating board or directly contacts food to for temperature detection.

Application: The sensor is mostly installed in heating board for direct temperature detection, or installed in oven for multiple point temperature detection.



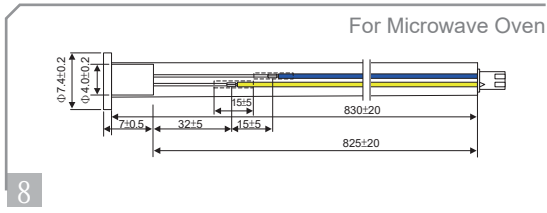
Component | Sensing top (NTC chip+aluminum cap)+connector +lead wire+terminal+housing

Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | 0~+250°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R100°C=3.3 KΩ± 2.5% **B Value** | B0/100=3970K±2%
Thermal Time Constant | Around 2 seconds (heating board)
Hi-Pot Test | AC 1500V 10mA (Max)

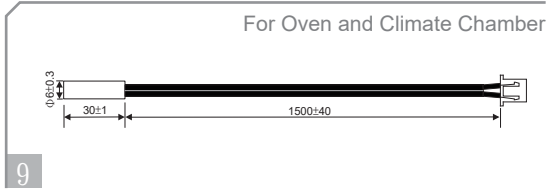


Component | Sensing top (NTC chip+ceramic cap)+tube+lead wire +terminal+housing

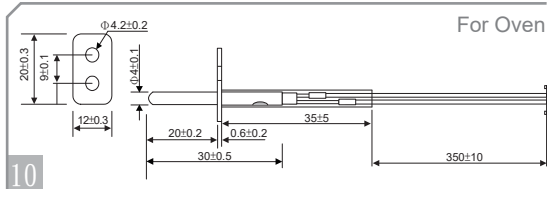
Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -40~+150°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R25°C=100KΩ±1% **B Value** | B25/85=4085K±1%
Thermal Time Constant | Around 5 seconds (heating board)
Hi-Pot Test | AC 1500V 10mA (Max)



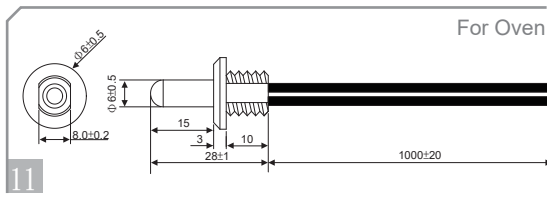
Component | Sensing top (NTC chip+aluminum cap)+tube+terminal+lead wire+terminal+housing
Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -20~+150°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R100°C=3.3KΩ±5% **B Value** | B0/100=3970K±3%
Thermal Time Constant | Around 5 seconds (heating board)
Hi-Pot Test | AC 1500V 10mA(Max)



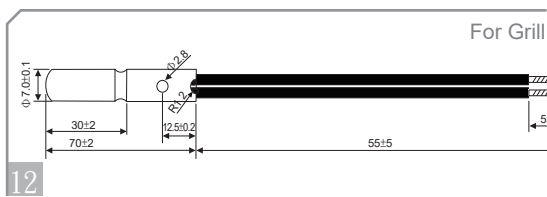
Component | Sensing top (NTC chip+copper cap)+lead wire+terminal+housing
Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -20~+120°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R25°C=10KΩ±3% **B Value** | B25/85=3435K±1%
Thermal Time Constant | Around 15 seconds (in water)
Hi-Pot Test | AC 1500V 10mA(Max)



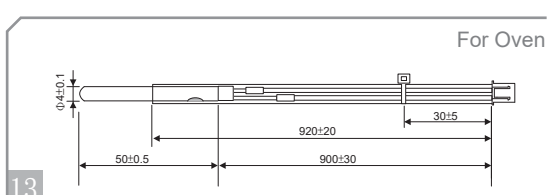
Component | Sensing top (NTC chip+stainless steel cap+holder)+tube+terminal+lead wire+terminal+housing
Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -20~+260°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R25°C=100KΩ±2% **B Value** | B0/100=4036K±1%
Thermal Time Constant | Around 90 seconds (in air)
Hi-Pot Test | AC 1800V 5mA (Max)



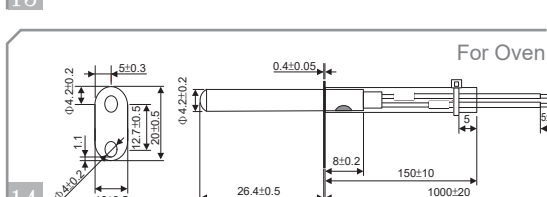
Component | Sensing top (NTC chip+stainless steel screw cap)+lead wire+terminal+housing
Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -20~+200°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R200°C=1KΩ±1% **B Value** | B100/200=4537K±2%
Thermal Time Constant | Around 10 seconds (in water)
Hi-Pot Test | AC 1500V 10mA(Max)



Component | Sensing top (NTC chip+stainless steel cap)+lead wire
Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -40~+240°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R50°C=17.69KΩ±4.8% **B Value** | B25/85=3992K±2%
Thermal Time Constant | Around 12 seconds (in water)
Hi-Pot Test | AC 1500V 10mA (Max)



Component | Sensing top (NTC chip+stainless steel cap)+tube+terminal+lead wire+tie+terminal+housing
Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -20~+300°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R200°C=1KΩ±5% **B Value** | B100/200=4537K±3%
Thermal Time Constant | Around 90 seconds (in air)
Hi-Pot Test | AC 1750V 0.5mA (Max)

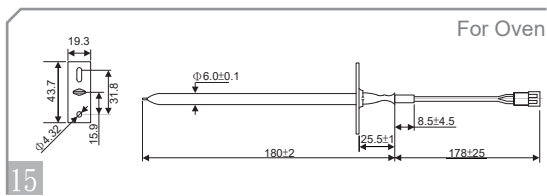


Component | Sensing top (NTC chip+stainless steel cap+holder)+tube+lead wire+terminal+tie
Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -20~+300°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R100°C=3.3KΩ±2.5% **B Value** | B25/100=3988K±1%
Thermal Time Constant | Around 3 seconds (in water)
Hi-Pot Test | AC 1500V 10mA (Max)

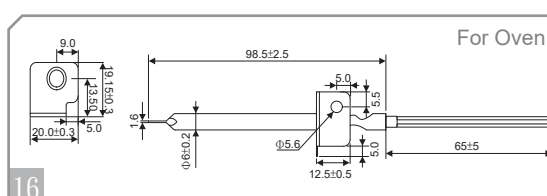
Platinum Sensor (Pt sensor)

Feature: Pt sensor is similar to PTC thermistor, but is more precise and stable.

Application: The sensor is mostly installed in commercial oven or Eco-clean oven.



Component | Sensing top (Pt chip+stainless steel cap+holder)+tube+lead wire+terminal+housing
Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -40~+500°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R0°C=1000±4 Ω / R23.9°C=1091±5 Ω
Temperature Coefficient of Resistance | 3750 ppm
Hi-Pot Test | AC 1500V 10mA(Max)



Component | Sensing top (Pt chip+stainless steel cap+holder)+lead wire+terminal+housing
Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -40~+500°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R0°C=1000±4 Ω / R23.9°C=1091±5 Ω
Temperature Coefficient of Resistance | 3750ppm
Hi-Pot Test | AC 1500V 10mA(Max)

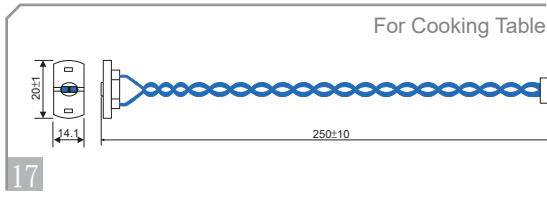


- 1. Temperature sensor is customizable in accordance with customer's needs, and THINKING provides consulting services for sensor design.
- 2. All specifications are subject to change.
- 3. Please contact your sales representative if you have any questions.

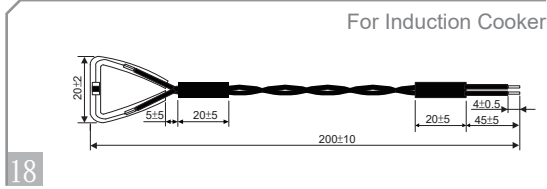
Glass Coating Type

Feature: Glass coated chip is installed on silicon seat or covered by heat shrink tube for direct temperature detection. The sensor responds fast and is installed easily.

Application: The sensor is mostly used in dryer environment, including cooking table, induction cooker, etc.



Component | Sensing top(NTC chip+silicon seat)+lead wire+terminal+housing
Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | 0~+250°C
Insulation Test | DC 500V 100MΩ(Min)
R Value | R185°C= 1.2 KΩ±5% **B Value** | B100/200= 4015K±3%
Thermal Time Constant | Around 4 seconds (heating board)
Hi-Pot Test | AC 1500V 10mA (Max)

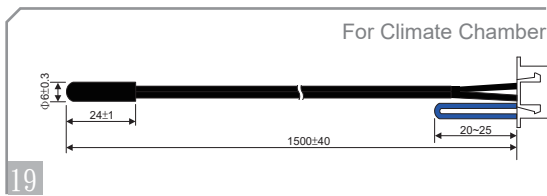


Component | Sensing top (NTC chip+terminal+tube)+lead wire+tube
Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -10~+200°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R200°C=0.55KΩ±2.5% **B Value** | B100/200=4300K±3%
Thermal Time Constant | Around 15 seconds (in air)
Hi-Pot Test | AC 1500V 10mA (Max)

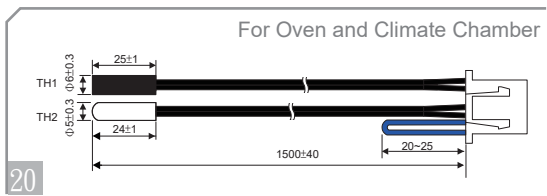
Other Structures

Feature: Plastic case type offers better water insulation, and is applied in moisture environment but its environment temperature is not high. In addition, multiple-sensor structure offers better PCB layout, and structure or electrical characteristics is customizable in accordance with requirement of temperature detection.

Application: The sensor is generally applied in climate chamber, low-temperature oven, etc.

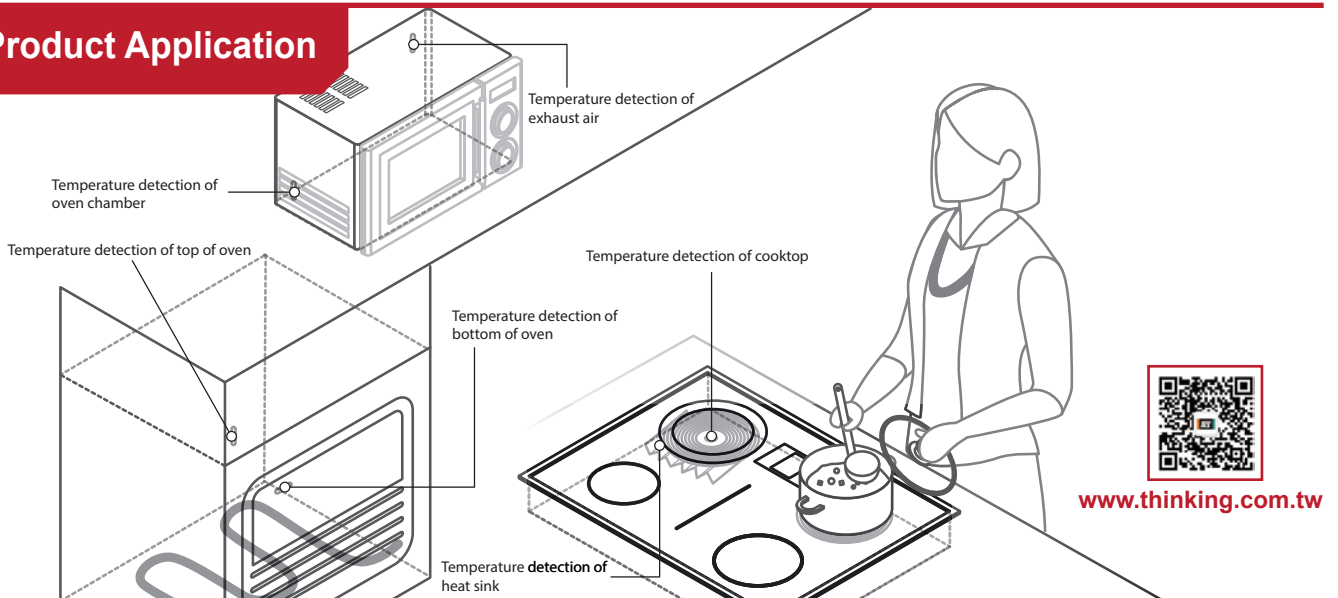


Component | Sensing top (NTC chip+plastic cap)+lead wire+terminal+housing
Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -20~+105°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R25°C=10KΩ±3% **B Value** | B25/85=3435K±2%
Thermal Time Constant | Around 20 seconds (in water)
Hi-Pot Test | AC 1500V 10mA (Max)



Component | Sensing top(NTC chip+plastic cap/NTC chip+copper cap)+lead wire+terminal+housing
Moisture Resistance | 40°C 95% RH X 1000 hours
Operation Temperature | -20~+105°C
Insulation Test | DC 500V 100MΩ (Min)
R Value | R25°C=10KΩ ± 3% **B Value** | B25/85=3435K±2%
Thermal Time Constant | Around 15-20 seconds (in water)
Hi-Pot Test | AC 1500V 10mA

Product Application



HEADQUARTER 12F, No.93, Dashun 1st Rd., Zuoying Dist., Kaohsiung, Taiwan 81357 / Tel: 886-7-5577660

TAIPEI, TAIWAN 3F, No.25, Lane 70, Wugong 2nd Rd., Xinzhuang Dist., New Taipei City, Taiwan 24888 / Tel: 886-2-22990652

JIANGSU, CHINA No.6, Longmen Rd., Wujin High & New-Tech Industrial Development Zone, Changzhou, Jiangsu, China 213161 / Tel: 86-519-86578999

GUANGDONG, CHINA No.45, East Rd., Sha-Tao Dist., Chang-An Town, Dongguan City, Guangdong, China 523863 / Tel: 86-769-85542016

BEIJING, CHINA Room 2707, Building 1, No. 88, Jian Guo Road, Chaoyang Dist., Beijing City, China 100025 / Tel: 86-010-85898940

QINGDAO, CHINA No.696, Hefei Rd., Shibei Dist., Qingdao City, China 266035 / Tel: 86-138-08993369/86-186-69738999

HUBEI, CHINA California Sunshine Community, Guanggu Rd. Donghu New Technical Development Zone, Wuhan City, Hubei, China / Tel: 86-189-95621889