Temperature Sensors for Air Conditioning Applications

- Temperature sensors for air conditioning applications are customizable in accordance with temperature detection points, indoor and outdoor environments, temperature operation range, etc.
- THINKING temperature sensors for air conditioning applications meet customer’s needs for temperature response time and operate in humid and foul environment with dramatic temperature change.

**Feature**

- Ambient Temperature Detection: temperature sensors are usually installed in heat sinks of indoor and outdoor units, and remote controller.
- Temperature Detection of Copper Tube: detection points vary with models of air conditioners, and detection points can be fan coil in indoor and outdoor units, exhaust pipe of compressor, low pressure pipe, etc.
- Water Temperature Detection: temperature detection of cold water and hot water in central air conditioning and heating system.

**Function**

- **Application**

   Floor standing type air conditioner, single-split type air conditioner, multi-split type conditioner, central air conditioning and heating system, cabinet air conditioner, etc.
**Screw-On Type**

**Feature:** Screw-on design is for easy installation

**Application:** The product is installed on metallic surface for temperature detection, and is generally installed in compressor or collant.

**Component** | Sensing top (terminal+NTC chip+epoxy)+lead wire
---|---
**Moisture Resistance** | 40°C 95% RH X 1000 hours
**Operation Temperature** | -30~+125°C
**Insulation Test** | DC 500V 100MΩ (Min)
**R Value** | R25°C=210KΩ±3%  \( \text{B Value} \) | B25/50=3950K±1%
**Thermal Time Constant** | Around 20 seconds
**Hi-Pot Test** | AC 1500V 10mA (Max)

**Component** | Terminal+NTC chip in plastic case
---|---
**Moisture Resistance** | 40°C 95% RH X 1000 hours
**Operation Temperature** | -40~+105°C
**Insulation Test** | DC 500V 100MΩ (Min)
**R Value** | R25°C=10KΩ±1%  \( \text{B Value} \) | B25/85=3435K±1%
**Thermal Time Constant** | Around 20 seconds (heating plate)
**Hi-Pot Test** | AC 1500V 10mA (Max)

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**Epoxy Coating Type**

**Feature:** Epoxy coated sensing top is a simple design and resistant to humidity, and the sensor usually detects air temperature directly.

**Application:** The product is generally installed in evaporator of indoor unit to detect temperature.

**Component** | Sensing top (NTC chip+epoxy)+lead wire+tube+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±2%  \( \text{B Value} \) | B25/50=3950K±2%
**Thermal Time Constant** | Around 5 seconds (in water)
**Hi-Pot Test** | AC 1500V 10mA (Max)

**Component** | Sensing top (NTC chip+epoxy)+lead wire+terminal+housing
---|---
**Moisture Resistance** | 40°C 95% RH X 1000 hours
**Operation Temperature** | -30~+105°C
**Insulation Test** | AC 500V 100MΩ (Min)
**R Value** | R25°C=10KΩ±1%  \( \text{B Value} \) | B25/50=3450K±1%
**Thermal Time Constant** | Around 5 seconds (in water)
**Hi-Pot Test** | AC 1500V 10mA (Max)

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**Metal Case Type**

**Feature:** Material of metal case is the same as that of detected object for more accurate temperature detection and increase of product stability.

**Application:** The product detects temperatures of fan coil in indoor and outdoor units, exhaust pipe of compressor, and low pressure pipe. Temperature sensor made of stainless-steel material is suitable for above-mentioned applications, and can be installed in inlet and outlet pipes of central air conditioning system for water temperature detection.

**Component** | Sensing top (NTC chip+copper cap)+lead wire+tube+terminal+housing
---|---
**Moisture Resistance** | 40°C 95% RH X 1000 hours
**Operation Temperature** | -30~+125°C
**Insulation Test** | DC 500V 100MΩ (Min)
**R Value** | R110°C=1.28KΩ±5%  \( \text{B Value} \) | B100/110=4400K±3%
**Thermal Time Constant** | Around 10 seconds (in water)
**Hi-Pot Test** | AC 1500V 10mA (Max)
**Feature:** Plastic sensing top is encapsulated with insulation glue, and the sensor is highly resistant to water and corrosion.

**Application:** The product detects not only water temperature of central air conditioning and heating system but also indoor and outdoor ambient temperature.
**Feature:** Sensor is with various sensing tops and electrical characteristics for circuit design and assembly.

**Application:** The sensor is generally installed in split type air conditioner, indoor unit, and outdoor unit, and is designed based on customer’s needs.

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<tr>
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<td>B25=50KΩ±3%</td>
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<td>TH2 : R0/25=3400K±1%</td>
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**Thermal Time Constant:** Around 15 seconds (in water)

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**Thermal Time Constant:** Around 15 seconds (in water)

**Hi-Pot Test:** AC 1500V 10mA(Max)

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**Multiple Sensor Structure**

**Product Application**

Temperature detection of evaporation in indoor unit

Temperature detection of fan coil in indoor unit

Temperature detection of outdoor environment

Temperature detection of indoor environment

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