Pt100 Bearings temperature sensors

Introduction

When Bearing Platinum Thermal Resistance Sensors (Pt100) are installed on both the Drive End (DE) and Non-Drive End (NDE) of AmTecs electric motors, they are designed to measure the temperature of the motor bearings. These sensors are highly precise and sensitive, offering reliable and stable performance. Encapsulated in a stainless-steel sheath and fixed into a machined brass fitting with a spring-loaded mechanism, they are easy to install and can directly display the actual temperature of the motor bearings.

Technical Parameters

- **Sensor Type:** Pt100
- **Measurement Range:** -40°C to 200°C
- **Resistance:** 100? ±0.06? (Class A), 100? ±0.12? (Class B)
- **Insulation Resistance:** 100M? (500V ± 5V)

Structure and Dimensions

The bearing Pt100 sensor consists of the following components:

- **Sensor:** Encapsulated in a stainless-steel sheath.
- **Spring:** Provides the necessary loading against the bearing surface.
- **Bolt for Assembling:** Ensures the sensor is securely fixed.
- **Lead Wire:** Typically consists of three wires with a strong external cover for protection.

Installation and Use

1. **Sensor Placement:** The sensor should be embedded in the bearing block such that it contacts the outer race surface of the bearing.
2. **Lead Wires:** The lead wires are led out along the motor shell into the terminal box.
3. **Housing Preparation:** Normally, the bearing housing is drilled and tapped with a 1/8" BSP thread. The end of the stainless-steel sheath is pressed against the bottom of the hole or the outer race of the bearing and secured with a screw fitting.

Notes

Typically, there are two red wires and one white wire in the lead. Either of the two red wires can serve as the compensating wire.

By using these sensors, the temperature of the electric motor bearing can be accurately monitored, ensuring the motor operates safely and efficiently over long periods.

Wiring Detail