INSTRUCTION MANUAL

Model Name : R840 Series

Item : Bearing Temperature Sensor

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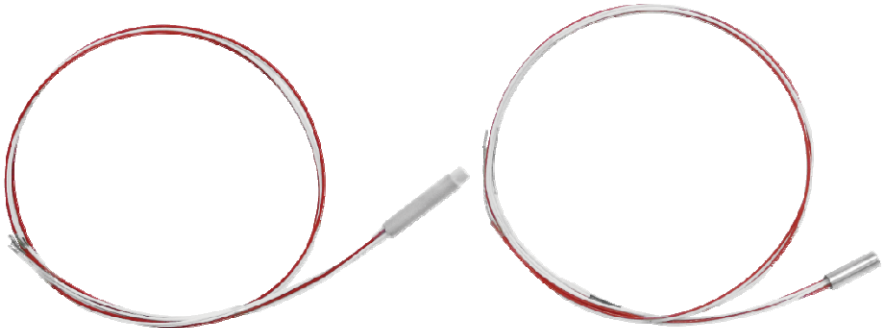


WISE® WISE Control Inc.
www.wisecontrol.com

1. Introduction

Bearing temperature sensor features a sensing tip constructed of stainless steel.
The bearing temperature sensor design also focuses on the temperature sensitive portion of the sensor near the tip of the probe, providing improved accuracy, bearings and other installations.
For safe use of the product, please carefully read this instruction manual for proper use.

2. Purpose

Bearing temperature sensor uses to satisfy the conditions below;

- Highly accurate and repeatable measurements
- Resistance to shock and vibration
- Rapid response

3. Features

Bearing temperature sensors use the phenomenon of changing electric resistance to measure the temperature.
With high stability and sensitivity, it has high precision on temperature measurement.

4. Safety

1) Preface

Bearing temperature sensors manufactured by WISE Control Inc. is a precision instruments.
User must follow the instruction manual and other documents for longer life of the instruments.

2) Usage

Bearing temperature sensor is designed to measure temperature.
It controls and records its values, which can be used by control board.

3) Warranty Provision

WISE Control Inc. will not be responsible for any damages or losses which are caused by misuse or modification of the instrument.

4) Warning

WARNING	***For safety reasons, attachment of instruments must be executed by a trained personnel.***
WARNING	***Please comply with the stated range of capacity of the instrument to avoid the malfunction of the instruments.***
WARNING	***Instrument should be properly installed in the suitable area for use.***
WARNING	***Wiring must be executed according to its regulation.***
WARNING	***All the electric power should be turned off before wiring.***
WARNING	***Insulated compressed terminal must be used on the end of the wiring,***
WARNING	***Disassembling of the instrument is prohibited.***
WARNING	***Please use the product within the range of workable temperature.***
WARNING	***Please do not give any excessive load, vibration or impact.***

5. Specification, Dimension and Marking

The specifications and external dimensions of the product should be chosen rightly depending on installation conditions. The specifications of the products vary depending on performance and treatment conditions. For example, a 4-wire product is recommended for precise temperature measurement.

5.1 Specification

1) Model description

(1) Bearing Temperature Sensor

- R845 : RTD single element
- R846 : RTD double element
- R847 : RTD single element with shield wire
- R848 : RTD double element with shield wire

(2) Explosion Proof Type

- ATEX II 1G Ex ia IIC T6…T3 Ga
- IECEx Ex ia IIC T6…T3 Ga

(3) Element

- Pt 100 Ω (B), 3 wire, Single
- Pt 100 Ω (A), 3 wire, Single
- Pt 100 Ω (B), 6 wire, Double
- Pt 100 Ω (A), 6 wire, Double

(4) Body Material

- 304SS
- 316SS
- 316L SS

(5) Material of lead wire

- FEP - FEP + Outer shield

(6) Ambient Temperature / Electrical data

- Temperature class T6 : -40 °C < Tamb < 75 °C

A) One Pt100

Ui = 30V, Ii = 25mA, Pi = 70mW

B) Two Pt100

Ui = 30V, Ii = 15mA (each Pt100), Pi = 50mW (together)

- Temperature class T5 : -40 °C < Tamb < 95 °C

A) One Pt100

Ui = 30V, Ii = 55mA, Pi = 630mW

B) Two Pt100

Ui = 30V, Ii = 45mA (each Pt100), Pi = 760mW (together)

- Temperature class T4 : -40 °C < Tamb < 130 °C

A) One Pt100

Ui = 30V, Ii = 55mA, Pi = 630mW

B) Two Pt100

Ui = 30V, Ii = 50mA (each Pt100), Pi = 1W (together)

- Temperature class T3 : -40 °C < Tamb < 180 °C

A) One Pt100

Ui = 30V, Ii = 40mA, Pi = 255mW

B) Two Pt100

Ui = 30V, Ii = 30mA (each Pt100), Pi = 260mW (together)

(7) Parameter

- Maximum internal capacitance : Ci 0
- Maximum internal inductance : Li 0

(8) Electrical rating

- Current : 0.2 mA ~ 5.0 mA

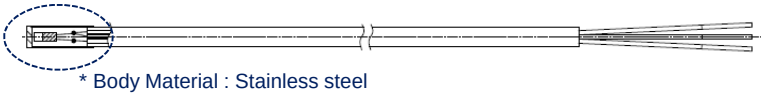
(9) Mechanical strength (Element)

- Vibration resistance : at least 40g acceleration at 10 to 2000 Hz, depends on installation.
- Shock resistance : at least 100g acceleration with Bms half sine wave, depends on installation.

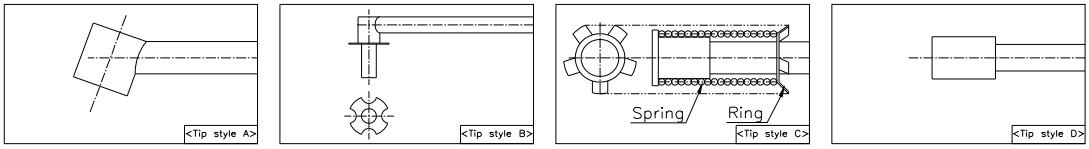
5.2 Product type

The models of the product by specifications are presented in the following. Please refer to the connection diagram of paragraph 7 for the specifications of the product.

1) Bearing Temperature Sensor

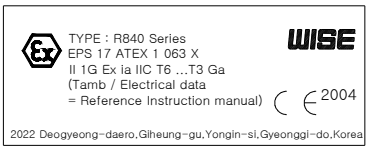


* Body Material : Stainless steel

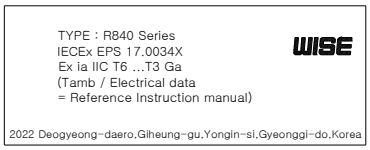


6. Marking Requirement

< ATEX Marking >



< IECEx Marking >

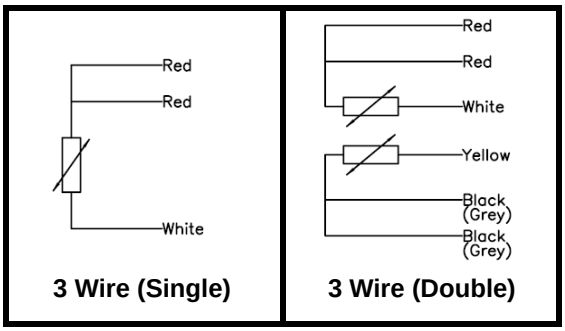


7. Electrical connection

Please refer to below picture to connect the product.

Extension lead wire color shall be different as per customer's requirement.

< Extension lead wire color : According to "BS EN 60751 and IEC 60751" >



1) Extension cable must share the same specification with bearing temperature sensor.

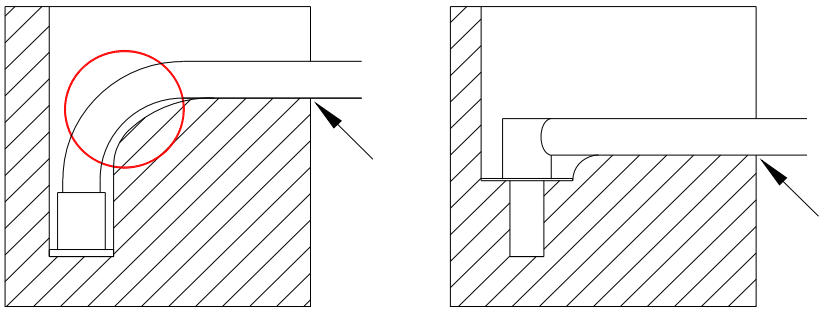
2) Wire size of the extension cable must be considered with voltage flow.

3) Extension cable should be protected from damages such as cutting.

8. Grounding method

When you install a temperature sensor and connect it to its receiver with external conductors,
a grounded shield wire may be used to avoid noise pick up on the conductors.
Generally, one-point grounding is recommended. When the sensor is not grounded, ground the instrument.

9. Installation



1) Install the bearing temperature sensor in between wires of a mild and large motor and of a power generator.
2) It is recommended that six sensors per motor be installed. Install two sensors per phase.
3) Please consider carefully the bending position and bending radius for a lead wire type temperature sensor.
4) For the best performance, it is recommended that the product be installed in the most heating part of a motor and a power generator.
5) Process with caution for any strong impact during installation. Once the installation is complete, check and see if the bearing temperature sensor perform accordingly.
6) The flying leads connected to the RTD Elements must be terminated within an enclosure which provides a degree of protection of at least IP20 with protection suitable for the area of installation.

10. Transportation

1) Transportation
An impact by dropping the product can cause damage on its performance. Therefore, extreme caution is necessary when transporting.
2) Storage
Please keep it away from humidity, vibration, and dust.
In the case of double-loading, Packaging box must not weigh too much for transformation.
Extreme caution is needed to make sure that the items don't drop.
3) Unpacking
In the case of unpacking, be cautious about handling and treating of the product.

11. Storage

1) Install in a less humid place with small corrosive gas.
2) Do not install where temperature exceeds the temperature defined in this Manual.
3) Make enough preparation to prevent lightning and vapor.
4) Keep it away from a place with direct rays of light.
5) If mounting kits & accessories are used, install them firmly.
6) For extension and cable, end wire should be used with compressed terminal,
and use screw to secure the wire.

12. Wiring

1) Be cautious about not overworking the main body.
2) Use vinyl insulated electric wire and cabtyre cable fitting load.
3) Firmly wire the terminal block by using M4 compression terminal.
4) Check the connection point type displayed in the connection diagram before wiring.
5) If a cable entry with Conduit type is used, then use waterproof sealing fitting.
6) If a cable entry with cable gland type is used, then use waterproof cable gland.

13. Maintenance

1) The general safety of facility often depends on the reliability of indications on the temperature sensor installed in the facility, thus any temperature sensor that seams to be abnormal must be maintained by periodic testing if necessary confirmation of temperature sensor accuracy should be maintained by periodic testing
2) Verification and recalibration must be carried out by appropriate test equipment and qualified personnel.