## BRTD44- Copper Tip RTD with Armor and Twist Lock Bayonet

**BRTD44** is resistance temperature detector specifically designed for bearing temperature or other rotating shafts temperature. Copper Tip probe tip is inserted directly into drilled holes (such as bearing housing,machine components) or the process. With copper tip design small change in temperature can be detected quickly to avoid major damage to the bearing or shaft.

### Key Features

- Available in type Pt100,Pt1000,Ni120 ohm .
- SS Armored lead wire for harsh and demanding environments.
- 20 time faster response than standard stainless steel tip.
- Available in Class B, Class A, (IEC 60751& ASTM E1137)
- Single and Duplex Sensor elements.
- Range -50°C to 260°C ( -58°F to  +500 °F)
- Adjustable Bayonet on Armor length easy installation on site.
- Sheath diameter is available 0.188in.
- Bayonet twist lock for easy connect and disconnect.

### Technical Specification

**Insulation Resistance :** 1000 MG Ohms @ 500 vdc
**Response Time :** <5 Sec in circulating water @ 3ft/sec
**Accuracy :** As per IEC60751 (See tolerance chart)
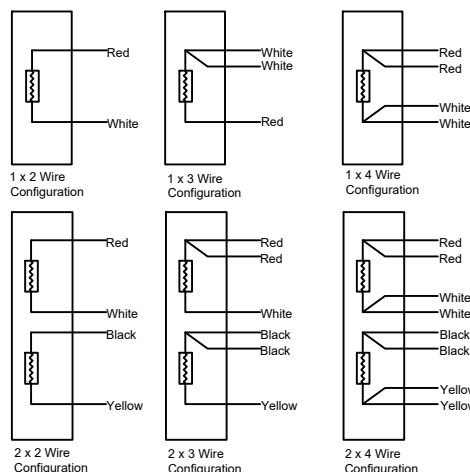**Self Heating Error:** < 0.30°F (0.17°C)
**Time Constanat :** < 3 sec

### RTD Wire Configuration

**2 Wire:** In 2 wire RTDs, one lead wire is connected to each wire of the RTD element. 2 Wire RTDs are an economical option for the applications where high accuracy is not required. Since there is no compensation wire, the accuracy of RTD can be affected if long lead wire is used.

**3 Wire** : 3 wire RTDs are the most common type of RTDs used in the industry. In 3 three-wire Rtd 1 wire is connected to the one side of the RTD element, and on the other side, 2 wires are connected to compensate for the resistance. With compensating wire, accuracy is very close to the element accuracy at the termination end.

**4 wire:** 4 wire RTDs are highly accurate. In  4 wire RTDs 2 wires are connected to each side of the RTD element. With additional wire on each side of the RTD element, the output at the termination is highly accurate. 4 wire RTDs are recommended where high accuracy and long lead wire is required.
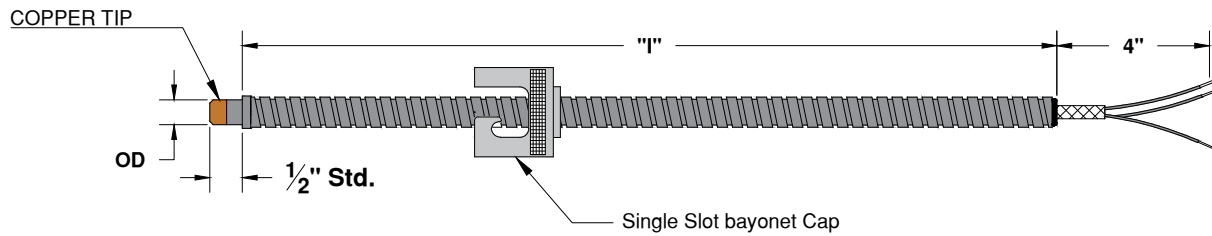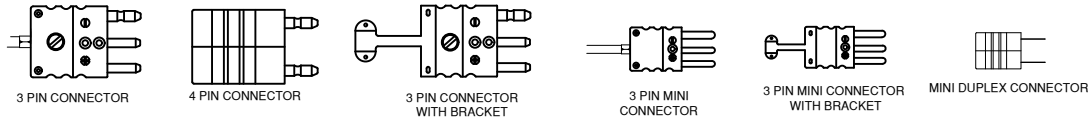


1 x 2 Wire Configuration — Red / White
1 x 3 Wire Configuration — White / White / Red
1 x 4 Wire Configuration — Red / Red / White / White
2 x 2 Wire Configuration — Red / White / Black / Yellow
2 x 3 Wire Configuration — Red / Red / White / Black / Black / Yellow
2 x 4 Wire Configuration — Red / Red / White / White / Black / Black / Yellow / Yellow

| RTD Type Available | | | | |
|---|---|---|---|---|
| Element Type | Pt100 | Pt200 | Pt1000 | Ni120 |
| Thin Film | X | X | X | X |
| Alpha Value | IEC 0.00385 JIS 0.00391 | IEC 0.00385 JIS 0.00391 | IEC 0.00385 | 0.00672 |

**Our RTD class offerings and  Tolerance as per IEC60751 (pt100)**

| Tolerance Class | Temperature Range °C | | Tolerance Values Ω | Tolerance values °C |
|---|---|---|---|---|
| | Wire Wound | Thin Film | | |
| AA | -50 TO +250 | 0 TO +150 | ±0.04 | ± ( 0.1 + 0.0017 \|t\|) |
| A | -100 TO +450 | -30 TO +300 | ±0.06 | ± ( 0.15 + 0.002 \|t\| ) |
| B | -196 TO +600 | -50 TO +500 | ±0.12 | ± ( 0.3 + 0.005 \|t\| ) |
| C | -196 TO +600 | -50 TO +600 | ±0.23 | ± ( 0.6 + 0.01 \|t\| ) |
| a \| t \| = modulus of temperature in °C without regard to sign | | | | |
| For 1/10 DIN B RTD is not standardize. The only accuracy defined is 1/10 of Class B accuracy at 0°C = 0.03°C | | | | |

**Tolerance Chart PT100 (IEC60751)**

| Temperature | Class B± | Class A± | Class AA± (1/3 DIN B) | Class 1/10 DIN B± |
|---|---|---|---|---|
| -50° C | 0.55 | 0.25 | 0.19 | 0.060 |
| 0° C | 0.30 | 0.15 | 0.10 | 0.030 |
| 100° C | 0.80 | 0.35 | 0.27 | 0.070 |
| 200° C | 1.30 | 0.55 | 0.44 | 0.120 |
| 250° C | 1.55 | 0.65 | 0.53 | 0.160 |
| 300° C | 1.80 | 0.75 | 0.61 | 0.220 |
| 350° C | 2.05 | 0.85 | 0.70 | - |
| 400° C | 2.30 | 0.95 | 0.78 | - |
| 450° C | 2.55 | 1.05 | 0.87 | - |
| 500° C | 2.80 | 1.15 | 0.95 | - |
| 550° C | 3.05 | 1.25 | 1.04 | - |
| 600° C | 3.30 | 1.35 | 1.12 | - |
| 650° C | 3.55 | 1.45 | 1.21 | - |

COPPER TIP

"I"   4"

OD

½" Std.

Single Slot bayonet Cap

**Termination options-**



3 PIN CONNECTOR    4 PIN CONNECTOR    3 PIN CONNECTOR WITH BRACKET    3 PIN MINI CONNECTOR    3 PIN MINI CONNECTOR WITH BRACKET    MINI DUPLEX CONNECTOR

Notes:
1. Standard temperature range is -50°C to 260°C
2. Standard sheath material is SS316.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| BRTD44 | | | | | | | | | | |

For Example- BRTD44-PT-A-S-04-3-24i-6-Z-0-0

### 1. RTD TYPE

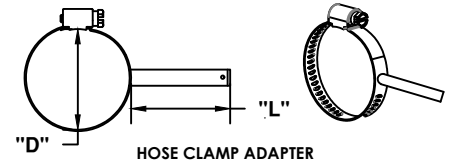| CODE | |
|---|---|
| PT | Pt100 Ohm, 0.00385, Coefficient |
| PTK | Pt1000 Ohm, 0.00385, Coefficient |
| NI | Ni120 Ohm, 0.00672 Curve Class B Only (Only Available in Low temp) |

### 2. RTD ACCURACY

| CODE | |
|---|---|
| B | Class "B" (For Ni120) |
| A | Class "A" (For PT100) |

### 3. SENSOR ELEMENT

| CODE | |
|---|---|
| S | Single |
| D | Dual |

### 4. WIRE CONFIGURATION

| CODE | |
|---|---|
| 02 | 2 wire (Red White) |
| 03 | 3 wire (Red/Red/White) |
| 04 | 3 wire (Red/White/White) STD |
| 06 | 6 wire (4Red/2Red) Dual Element |
| 07 | 6 wire (Red/Red/White/Black/Black/Yellow)Only available with Dual Element |

### 5.TIP OD

| CODE | IMPERIAL SIZE | METRIC SIZE |
|---|---|---|
| 3 | $\frac{3}{16}$" | 4.76 mm |

### 6. IMMERSION LENGTH (I)

Immersion length - use "I" for inches and "M" for millimetre

### 7. WIRE TYPE

| CODE | |
|---|---|
| 6 | TEFLON (260° C) |

### 8. CODES FOR TERMINATION

| CODE | |
|---|---|
| Z | Bare ends |
| TPP | 3 Pin Standard Plug |
| MTPP | Miniature 3 Pin Plug |
| FPP | 4 Pin Standard Plug |

### 9. CODES FOR TERMINATION (JACK)

| CODE | |
|---|---|
| 0 | Not required |
| TPJ | 3 Pin Standard Jack |
| MTPJ | Miniature 3 Pin Jack |
| FPJ | 4 Pin Standard Jack |

### 10. OPTIONAL ACCESSORY

| CODE | |
|---|---|
| 0 | Not required |
| WC | Wire clamp |
| Only choose when ordering with connector | |

### ACCESSORIES

L



⅛" MNPT

**THREADED BAYONET ADAPTER**



"D"    "L"

**HOSE CLAMP ADAPTER**

NOTE : SEE ACCESSORIES PAGE TO ORDER