# Chordal type thermocouple
## Model : R980 series

## Service intended

Normally, Chordal type thermocouple is installed on the outer wall of the tube to measure the temperature, however, to measure the temperature more precisely and quickly, it is directly inserted into the boiler tube after generating a hole on the tube. Generally, the tube will be manufactured by the boiler maker, and the thermocouple will be inserted and calibrated by the manufacturer.



## Application

- Boiler tube skin temperature
- Other various tube wall temperature measurement
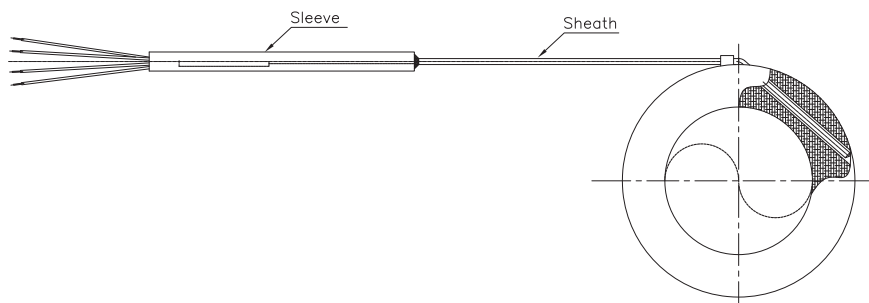
## Standard feature

**Element**
K, E, J, T

**Accuracy**
Standard : 0.75 % (For reading temp.)
Special : 0.4 % (For reading temp.)

**Sheath outer diameter (mm)**
1.6, 2.3 and 3.2

## Standard product drawing



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# Main order

## Ordering information

### 1. Base model

| | |
|---|---|
| **R981** | Chordal type thermocouple (Single element) |
| **R982** | Chordal type thermocouple (Double (Duplex) element) |

### 2. Head type

| | |
|---|---|
| **A** | Explosion proof and ungrounded |
| **B** | Explosion proof and grounded |
| **C** | General (Weatherproof) and ungrounded |
| **D** | General (Weatherproof) and grounded |
| **P** | Non head and ungrounded |
| **Q** | Non head and grounded |

### 3. Element

| | |
|---|---|
| **K** | K (0.75) |
| **J** | J (0.75) |
| **T** | T (0.75) |
| **E** | E (0.5) |
| **1** | K (0.4) |
| **2** | J (0.4) |
| **3** | T (0.4) |
| **4** | E (0.4) |
| **Z** | Other |

### 4. Sheath material

| | |
|---|---|
| **1** | 316SS |
| **2** | Inconel 600 |
| **3** | 310SS |
| **4** | 446SS |
| **5** | 347SS |
| **6** | 321SS |
| **7** | 316L SS |
| **9** | Other |

### 5. Sheath outer diameter (mm)

| | |
|---|---|
| **A** | 1.6 |
| **B** | 2.3 |
| **C** | 3.2 |
| **Z** | Other |

### 6. Conduit connection

| | |
|---|---|
| **1** | ½" PF |
| **2** | ½" PT |
| **3** | ½" NPT |
| **4** | ¾" PF |
| **5** | ¾" PT |
| **6** | ¾" NPT |
| **7** | None |
| **8** | M20 x 1.5P |
| **9** | Other |

### 7. Mounting type

| | |
|---|---|
| **X** | Refer to connection type (11th character) |

### 8. Connection type

| | |
|---|---|
| **XX** | Refer to insert length table (12th and 13th character) |

### 9. Insert length

| | |
|---|---|
| **X** | Refer to insert length table (14th character) |

### 10. Option

| | |
|---|---|
| **0** | None |
| **2** | Epoxy coated ALDC head |
| **3** | Head material : 304SS |
| **4** | Head material : 316SS |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|
| **R981** | **A** | **K** | **1** | **A** | **1** | **X** | **XX** | **X** | **0** | **Sample ordering code** |

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## Mounting, connection type and insert length table - 11th thru 14th characters

| 11th character | | 12th character | | 13th character | | 14th character | |
|---|---|---|---|---|---|---|---|
| Code | Mounting | Code | Connection size and connector material | Code | Connection type | Code | Insert length (mm) |
| A | None | A | None | A | None | A | 100 |
|  | Fixed thread lag length | B | ⅛" and 304SS | B | PT | B | 200 |
| B | 80 mm | C | ¼" and 304SS | C | NPT | C | 300 |
| C | 100 mm | D | ⅜" and 304SS | D | PF | D | 400 |
| D | 150 mm | E | ½" and 304SS | E | NPS | E | 500 |
| E | 200 mm | F | ¾" and 304SS | F | UNF | F | 600 |
| F | Other | G | 1" and 304SS | G | BSPT | G | 700 |
|  | Fixed flange lag length | H | 1¼" and 304SS | H | BSPF | H | 800 |
| G | 80 mm | J | 1½" and 304SS | J | MM | J | 900 |
| H | 100 mm | K | 2" and 304SS | K | B16.5 Class 150 RF | K | 1,000 |
| J | 150 mm | L | 3" and 304SS | L | B16.5 Class 150 FF | L | 1,500 |
| K | 200 mm | M | 7⁄16" and 304SS | M | B16.5 Class 300 RF | M | 2,000 |
| L | Other | N | ⅛" and 316SS | N | B16.5 Class 300 FF | N | 2,500 |
| M | Movable thread | P | ¼" and 316SS | O | Sanitary | P | 3,000 |
| N | Movable flange | Q | ⅜" and 316SS | P | B16.5 Class 600 RF | Q | 3,500 |
| P | Compression fitting | R | ½" and 316SS | Q | B16.5 Class 600 FF | R | 4,000 |
|  | Union and nipple length | S | ¾" and 316SS | R | JIS 5K RF | S | 4,500 |
| Q | 100 mm length | T | 1" and 316SS | S | JIS 5K FF | T | 5,000 |
| R | 150 mm length | U | 1¼" and 316SS | T | JIS 10K RF | U | 6,000 |
| S | Other | V | 1½" and 316SS | U | JIS 10K FF | V | 7,000 |
|  | Nipple length | W | 2" and 316SS | V | JIS 20K RF | W | 8,000 |
| T | 50 mm | X | 3" and 316SS | W | JIS 20K FF | X | 9,000 |
| U | 100 mm | Y | 7⁄16" and 316SS | X | B16.5 Class 1,500 RTJ | Y | 10,000 |
| V | 150 mm | Z | Other | Y | B16.5 Class 2,500 RTJ | Z | Other |
| W | Other | | | Z | Other | | |
| X | Fixed thread | | | | | | |
| Z | Other | | | | | | |

■ Note for 14th character, please choose a code of next higher length if applicable length is not.
Actual length shall be specified.

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## Memo