# Sheathed thermocouple Model : R120 sereis (R series)

#### Spec. sheet no. RD01-02

### Service intended

Sheath type thermocouple generally shares the similar principle of protection tube type thermocouple. However, it has a different construction.

It is filled with inorganic insulating material between the thin wire and the metal sheath, and it shares the same body as one.

Inside the thin stainless steel pipe, thermocouple element is located, and then stainless pipe is filled with a MgO. Normally, thermocouple is used with a thermowell. The advantages over protection tube types are ; it has a faster response time, it has a broader temperature range (-200 ~ 1,600 °C), longer life, it can be bended to install according to its required installation site condition, a better mechanical strength, and a better internal pressure control.

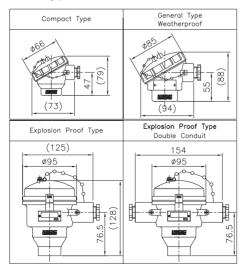


# **Standard features**

#### Element

K, E, J, T, N

### Head type



### Tolerances on temperature reading

Class 1, Class 2 (DIN/IEC584-2, BS/EN60584-2, JIS C1602) Special, Standard (ASTM E230, E988, ISA-MC96.1)

## Head material

ALDC (Standard) 304SS (Not available compact type) 316SS (Not available compact type)

# Hot junction shape

Grounded Ungrounded

### Sheath outer diameters

1.0, 1.6, 2.3, 3.2, 4.8, 6.4, 8.0, 9.5 and 12.7 mm Double element is not available for 1.0 and 1.6 mm sheath outer diameter

### Certificates

KCS Ex d IIC T6



# Main order

#### 1. Base model

R121 Single element

R122 Double (Duplex) element

#### 2. Head & tip shape type

- A General (Weatherproof) and ungrounded
- B General (Weatherproof), ungrounded and spring loaded
- C General (Weatherproof) and grounded
- D General (Weatherproof), grounded and spring loaded
- **E** General (Weatherproof) and exposed
- **F** Explosion proof and ungrounded
- H Explosion proof and grounded
- **K** Explosion proof and exposed
- L Compact (Small) and ungrounded
- M Compact (Small) and grounded
- N Compact (Small) and exposed
- P Explosion proof (Double conduit) and ungrounded
- **Q** Explosion proof (Double conduit) and grounded
- R Explosion proof (Double conduit) and exposed

### 3. Element (Tolerance)

- K K (0.75)
- **J** J (0.75)
- **T** T (0.75)
- **N** N (0.75)
- E E (0.5)
- **B** B (0.5)
- 1 K (0.4)
- **2** J (0.4)
- **3** T (0.4)
- **4** E (0.4)
- 5 N (0.4)
- **R** R (0.25)
- **S** S (0.25)
- Z Other

#### 4. Sheath material

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

## 5. Sheath outer diameter (mm)

A9

1.0

1.6

2.3

- B9
- C9
- **D9** 3.2
- **E9** 4.8
- **F9** 6.4
- **G9** 8.0
- **H9** 9.5
- **L9** 12.7

#### 6. Conduit connection

- 3 ½" NPT
- 6 ¾" NPT
- 7 None
- 8 M20 x 1.5P
- 9 Other

#### 7. Mounting type

**X** Refer to mounting table (11<sup>th</sup> character)

#### 8. Connection type

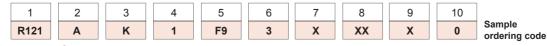
**XX** Refer to mounting table (12<sup>th</sup> and 13<sup>th</sup> character)

#### 9. Insert length

**X** Refer to insert length table (14<sup>th</sup> character)

#### 10. Option

- 0 None
- 1 Accessories
- 4 Epoxy coated ALDC head
- 5 Head material : 304SS (Only for weatherproof head)
- 6 Head material : 316SS
  - (Not available for explosion proof-double conduit type)
- 7 Accessories and epoxy coated ALDC head
- Accessories and head material : 304SS (Only for weatherproof head)
- 9 Accessories and head material : 316SS





# **Ordering information**

11 <sup>th</sup> character		12 <sup>th</sup> character		13 <sup>th</sup> character		14 <sup>th</sup> character	
Code	Mounting	Code	Connection size and connector material	Code	Connection type	Code	Insert length (mm)
А	None	А	None	А	None	А	100
	Fixed thread lag length	В	1⁄8" and 304SS	В	PT	В	200
В	80 mm	С	1⁄4" and 304SS	С	NPT	С	300
С	100 mm	D	3⁄8" and 304SS	D	PF	D	400
D	150 mm	Е	½" and 304SS	E	NPS	E	500
E	200 mm	F	3⁄4" and 304SS	F	UNF	F	600
F	Other	G	1" and 304SS	G	BSPT	G	700
	Fixed flange lag length	Н	1¼" and 304SS	Н	BSPF	Н	800
G	80 mm	J	11/2" and 304SS	J	ММ	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	М	7∕₀" and 304SS	М	B16.5 Class 300 RF	M	2,000
L	Other	N	1⁄8" and 316SS	N	B16.5 Class 300 FF	N	2,500
М	Movable thread	Р	1⁄4" and 316SS	0	Sanitary	Р	3,000
N	Movable flange	Q	3⁄8" and 316SS	Р	B16.5 Class 600 RF	Q	3,500
Ρ	Compression fitting	R	1⁄2" and 316SS	Q	B16.5 Class 600 FF	R	4,000
	Union and nipple length	S	3⁄4" and 316SS	R	JIS 5K RF	S	4,500
Q	100 mm length	Т	1" and 316SS	S	JIS 5K FF	Т	5,000
R	150 mm length	U	1¼" and 316SS	Т	JIS 10K RF	U	6,000
S	Other	V	11⁄2" and 316SS	U	JIS 10K FF	V	7,000
	Nipple length	W	2" and 316SS	V	JIS 20K RF	W	8,000
Т	50 mm	Х	3" and 316SS	W	JIS 20K FF	Х	9,000
U	100 mm	Y	7%" and 316SS	Х	B16.5 Class 1,500 RTJ	Y	10,000
V	150 mm	Z	Other	Y	B16.5 Class 2,500 RTJ	Ζ	Other
W	Other			Z	Other		
Х	Fixed thread						
Ζ	Other						

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

Note for 14<sup>th</sup> character, please choose a code of next higher length if applicable length is not. Actual length shall be specified. Note for \*Y code (Oil sealing type), only available with spring-loaded head type.

