

# Metallic protection tube thermocouple

## Model : R110 series

Spec. sheet no. RD01-01

### Service intended

Protection tube type thermocouple is constructed with the insulator which insulates the element wire, and with the protection tube which protects the insulator.

To install this thermocouple on the process pipe or on the container, it normally attaches to a connector, a flange, or a compression fitting on the protection tube. It can be manufactured as it is required for its use.

As its special features, it does not have any resistance issues with a lead wire, and its immediate response to a temperature change leads to a less error rate of temperature change in a broad range.



### Standard features

#### Element

K, E, J, T

#### Tolerances on temperature reading

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

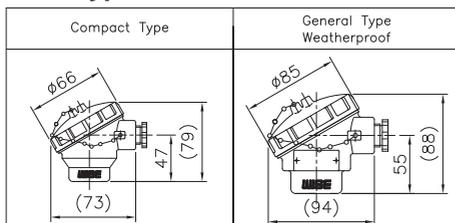
#### Head material

ALDC (Standard)

304SS (Not available compact type)

316SS (Not available compact type)

#### Head type



#### Tube and element wire size

Outer diameter (mm)	
Tube	Element wire
6.4	0.65
8.0	0.65 (1.0)
10.0	1.0 (1.6)
12.0	1.0 (1.6)
15.0	1.0, 1.6 (2.3)
17.3	1.6 (2.3) (3.2)
21.7	2.3 (3.2)

\* ( ) standard

**1. Base model**

- R111** Single element  
**R112** Double (Duplex) element

**2. Head type**

- A** General (Weatherproof)  
**L** Compact (Small)

**3. Element (Tolerance)**

- K** K (0.75)  
**J** J (0.75)  
**T** T (0.75)  
**E** E (0.5)  
**Z** Other

**4. Tube material**

- 0** 304SS  
**7** 316L SS  
**9** Other

**5. Tube and element outer diameter (mm)**

- |                        |                        |
|------------------------|------------------------|
| <b>F0</b> 6.4 and 0.65 | <b>M1</b> 15.0 and 1.0 |
| <b>G0</b> 8.0 and 0.65 | <b>M2</b> 15.0 and 1.6 |
| <b>G1</b> 8.0 and 1.0  | <b>M3</b> 15.0 and 2.3 |
| <b>J1</b> 10.0 and 1.0 | <b>P2</b> 17.3 and 1.6 |
| <b>J2</b> 10.0 and 1.6 | <b>P3</b> 17.3 and 2.3 |
| <b>K1</b> 12.0 and 1.0 | <b>P4</b> 17.3 and 3.2 |
| <b>K2</b> 12.0 and 1.6 | <b>Q3</b> 21.7 and 2.3 |
|                        | <b>Q4</b> 21.7 and 3.2 |

**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 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 (Only for weatherproof head)  
**7** Accessories and epoxy coated ALDC head  
**8** Accessories and head material : 304SS  
 (Only for weatherproof head)  
**9** Accessories and head material : 316SS  
 (Only for weatherproof head)

1	2	3	4	5	6	7	8	9	10
R111	A	K	1	G1	1	X	XX	X	0

Sample  
ordering code

## Mounting, connection type and insert length table - 11<sup>th</sup> thru 14<sup>th</sup> characters

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)
A	None	A	None	A	None	A	100
	Fixed thread lag length	B	1/8" and 304SS	B	PT	B	200
B	80 mm	C	1/4" and 304SS	C	NPT	C	300
C	100 mm	D	3/8" and 304SS	D	PF	D	400
D	150 mm	E	1/2" 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	H	1 1/4" and 304SS	H	BSPF	H	800
G	80 mm	J	1 1/2" 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	1/2" and 316SS	N	B16.5 Class 300 FF	N	2,500
M	Movable thread	P	1/4" and 316SS	O	Sanitary	P	3,000
N	Movable flange	Q	3/8" and 316SS	P	B16.5 Class 600 RF	Q	3,500
P	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	T	1" and 316SS	S	JIS 5K FF	T	5,000
R	150 mm length	U	1 1/4" and 316SS	T	JIS 10K RF	U	6,000
S	Other	V	1 1/2" 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 14<sup>th</sup> character, please choose a code of next higher length if applicable length is not. Actual length shall be specified.

A large, empty rectangular box with a thin black border, intended for writing a memo.