

Tube skin thermocouple and resistance temperature detector

Model : R600 series

Spec. sheet no. RD06-01

Service intended

This tube skin temperature sensor is designed to measure the surface temperature of a pipe or a tube used in a boiler, a furnace, a heat exchanger, and a reactor. It is constructed to resist against high temperature and a corrosive agents by tightly attaching the sensor to the measuring area by welding a knife edge pad or a plate weld pad. Furthermore, to protect the pad and the sheath from the heat expansion, it employs a coil shaped design.



Standard features

Element

Thermocouple : K, E, J, T, N
R.T.D. : Pt 100Ω at 0 °C

Tolerances on temperature reading

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

■ R.T.D.
Class A : $\pm (0.15 + 0.002 | t |)$
Class B : $\pm (0.3 + 0.005 | t |)$

Sheath outer diameter

■ Thermocouple
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

■ R.T.D.
3.2, 4.8, 6.4 and 8.0 mm

Head type

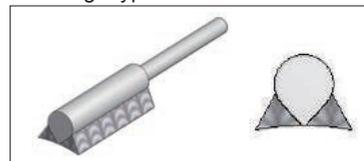
Compact Type	General Type Weatherproof
Explosion Proof Type	Explosion Proof Type Double Conduit

Head material

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

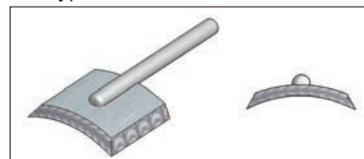
Tube skin type

knife edge type



* Only available for 6.4, 8.0, 9.5 and 12.7 mm diameters of thermocouple

Pad type



1. Base model

R601	Head assembly, single element
R602	Head assembly, double element
R611	Extension lead wire, single element
R612	Extension lead wire, double element

2. Head type

C	General (Weatherproof)
H	Explosion proof
Q	None, extension lead wire
P	Explosion proof (Double conduit)
Z	Other

3. Element (Tolerance)

K	K (0.75)	1	K (0.4)
J	J (0.75)	2	J (0.4)
T	T (0.75)	3	T (0.4)
N	N (0.75)	4	E (0.4)
E	E (0.5)	5	N (0.4)
Q	Pt 100 Ω (B)	9	Pt 100 Ω (A)
Z	Other		

4. Sheath material

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

5. Sheath outer diameter (mm)

A	1.0	F	6.4
B	1.6	G	8.0
C	2.3	H	9.5
D	3.2	L	12.7
E	4.8		

6. Tube skin type

7	Plate
8	Knife edge (Only thermocouple and not available less than sheath outer diameter 6.4 mm)
9	Other

7. 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

8. Mounting type

X	Refer to mounting table (11 th character)
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9. Connection type

XX	Refer to connection table (12 th and 13 th character)
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10. Insert length

X	Refer to insert length table (14 th character)
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11. 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
8	Accessories and head material : 304SS
9	Accessories and head material : 316SS

1	2	3	4	5	6	7	8	9	10	11
R601	H	K	1	G	7	2	X	XX	X	0

Sample ordering code

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

11 th character		12 th character		13 th character		14 th character	
Code	Mounting	Code	Connection size and connector material	Code	Connection type	Code	Insert length (m)
A	None	A	None	A	None	A	2
	Fixed thread lag length	B	1/8" and 304SS	B	PT	B	3
B	80 mm	C	1/4" and 304SS	C	NPT	C	4
C	100 mm	D	3/8" and 304SS	D	PF	D	5
D	150 mm	E	1/2" and 304SS	E	NPS	E	6
E	200 mm	F	3/4" and 304SS	F	UNF	F	7
F	Other	G	1" and 304SS	G	BSPT	G	8
	Fixed flange lag length	H	1 1/4" and 304SS	H	BSPF	H	9
G	80 mm	J	1 1/2" and 304SS	J	MM	J	10
H	100 mm	K	2" and 304SS	K	B16.5 Class 150 RF	K	15
J	150 mm	L	3" and 304SS	L	B16.5 Class 150 FF	L	20
K	200 mm	M	7/8" and 304SS	M	B16.5 Class 300 RF	M	25
L	Other	N	1/6" and 316SS	N	B16.5 Class 300 FF	N	30
M	Movable thread	P	1/4" and 316SS	O	Sanitary	P	35
N	Movable flange	Q	3/8" and 316SS	P	B16.5 Class 600 RF	Q	40
P	Compression fitting	R	1/2" and 316SS	Q	B16.5 Class 600 FF	R	45
	Union and nipple length	S	3/4" and 316SS	R	JIS 5K RF	S	50
Q	100 mm length	T	1" and 316SS	S	JIS 5K FF	Z	Other
R	150 mm length	U	1 1/4" and 316SS	T	JIS 10K RF		
S	Other	V	1 1/2" and 316SS	U	JIS 10K FF		
	Nipple length	W	2" and 316SS	V	JIS 20K RF		
T	50 mm	X	3" and 316SS	W	JIS 20K FF		
U	100 mm	Y	7/8" and 316SS	X	B16.5 Class 1,500 RTJ		
V	150 mm	Z	Other	Y	B16.5 Class 2,500 RTJ		
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.

R600 : Type of mounting

